

# Is Leader Developing Behavior Related to Employees' Health Complaints? A Multilevel Investigation

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## Abstract

The goals of this study were to ascertain whether a specific leadership behavior (developing subordinates) is related to employees' health complaints and determine some of the underlying mechanisms involved. The hypothesized relationships were investigated in a sample composed of 538 employees working in 170 work-units of a public regional health service. Multilevel structural equation modeling was used to estimate the hypothesized relationships at the individual and work-unit levels. Results obtained at the individual level showed, as expected, that leader developing behavior was negatively related to employees' health complaints through two mediators: organizational commitment and emotional exhaustion. At the work-unit level, leader developing behavior was not related to employees' health complaints. Our findings uncover some of the mechanisms linking leader developing behavior and employees' health complaints at the individual level, show that the observed relationships cannot be generalized across levels, and have implications for the Job Demands-Resources theory.

**Keywords:** leadership behavior, health complaints, JD-R theory.

## O Comportamento de Desenvolvimento do Líder está Relacionado às Reclamações de Saúde dos Funcionários? Uma Investigação Multinível

### Resumo

Os objetivos deste estudo foram verificar se um comportamento específico de liderança (desenvolvimento de subordinados) está relacionado a queixas de saúde dos funcionários e determinar alguns dos mecanismos subjacentes envolvidos. As relações hipotetizadas foram investigadas em uma amostra composta por 538 funcionários que atuam em 170 unidades de trabalho de um serviço público de saúde regional. A modelagem de equações estruturais multinível foi usada para estimar os relacionamentos hipotéticos nos níveis individual e da unidade de trabalho. Os resultados obtidos no nível individual mostraram, como esperado, que o comportamento de desenvolvimento do líder estava negativamente relacionado às queixas de saúde dos funcionários por meio de dois mediadores: comprometimento organizacional e esgotamento emocional. No nível da unidade de trabalho, o comportamento de desenvolvimento do líder não estava relacionado às queixas de saúde dos funcionários. Nossas descobertas revelam alguns dos mecanismos que ligam o comportamento de desenvolvimento do líder e as queixas de saúde dos funcionários no nível individual, mostram que as relações observadas não podem ser generalizadas entre os níveis e têm implicações para a teoria de demandas de trabalho-recursos.

**Palavras-chave:** comportamento de liderança, queixas de saúde, teoria JD-R.

## ¿La Conducta de Desarrollo del Líder está Relacionado con las Quejas de Salud de los Empleados? Una Investigación Multinivel

### Resumen

Los objetivos de este estudio fueron determinar si una conducta de liderazgo específica (desarrollo de subordinados) está relacionada con las quejas de salud de los empleados y determinar algunos de los mecanismos subyacentes involucrados. Las relaciones hipotetizadas se investigaron en una muestra compuesta por 538 empleados que trabajaban en 170 unidades de trabajo de un servicio regional público de salud. Se utilizó un modelo de ecuaciones estructurales multinivel para estimar las relaciones hipotetizadas a nivel individual y de unidad de trabajo. Los resultados obtenidos a nivel individual mostraron, como se esperaba, que la conducta de desarrollo del líder estaba relacionada negativamente con las quejas de salud de los empleados a través de dos mediadores: el compromiso organizacional y el agotamiento emocional. A nivel de unidad de trabajo, la conducta de desarrollo del líder no estaba relacionada con las quejas de salud de los empleados. Nuestros hallazgos descubren algunos de los mecanismos que vinculan la conducta de desarrollo del líder y las quejas de salud de los empleados a nivel individual, muestran que las relaciones observadas no se pueden generalizar a través de los niveles, y tienen implicaciones para la teoría de las demandas y los recursos laborales.

**Palabras clave:** conductas de liderazgo, quejas de salud, teoría JD-R.

Leaders can contribute to modeling employees' responses in organizations. In fact, there is ample evidence about the relationship between leadership and relational (e.g., trust in manager), attitudinal (e.g., job satisfaction), and behavioral (e.g., job performance) employee criteria (see Hoch et al.'s (2018) meta-analysis). However, we still know very little about the relationship between leadership and an important indicator of employees' health: health complaints (e.g., head and back pain, constant fatigue, digestive problems, anxiety state). In a recent narrative review of the literature about leadership behavior and employee wellbeing that included physical wellbeing (e.g., health complaints), Inceoglu and colleagues (2018) only found five studies that considered the relationship between leadership behavior and physical wellbeing. However, only in two of them the relationship between leadership styles and health complaints was specifically investigated. Liu et al. (2010) found that transformational leadership was indirectly and negatively related to health complaints via self-efficacy. Rahimnia and Sharifirad (2015) observed that authentic leadership was indirectly and negatively related to health complaints via attachment insecurity. In two of the other three studies, physical wellbeing was operationalized by means of sleep quality, not health complaints (Munir & Nielsen, 2009; Nielsen & Daniels, 2012). In the remaining study, health complaints was an indicator of a dependent latent variable of mental health (Moyle, 1998).

This scarcity of knowledge about the relationship between leadership and health complaints is surprising given that several international organizations are stressing the need to improve employees' health. For instance, since 2014 the European Agency for Safety and Health at Work has been launching campaigns to promote healthy workplaces and employee health (see: <https://osha.europa.eu/en/healthy-workplaces-campaigns>).

Moreover, this lack of knowledge is worrisome for theoretical and practical reasons. First, leaders are key actors in organizational environments. Given the role they occupy and the influence they have, their behavior has the capacity to influence employees' work experiences and responses. The fact that we know so little about the relationship between leadership behavior and employees' health complaints is worrying because it means we do not know whether we can use the former to improve the latter. We need to ascertain what leadership behaviors can foster employees' health and what the underlying mechanisms are. Second, Duijts and colleagues' (2007) meta-analysis about the predictors of sickness absence found that experiencing health complaints was one of the "significant predictors for occurrence of sick leave, both uncertified short spells ( $\leq 3$  days) and certified sick leaves ( $> 3$  days)" (Duijts et al., 2007, p. 1112). This result suggests that understanding the mechanisms that link leader behavior and employees' health complaints not only can help design strategies to improve employees' health, but also decrease the costs associated with sickness absence.

Thus, the goal of this study is to ascertain whether a specific leadership behavior (developing subordinates; i.e., the extent to which leaders help employees to develop their skills and facilitate their career advancement; Yukl, 2012; Yukl et al., 2002) is indirectly related to employees' health complaints, and identify some of the mechanisms (i.e., mediators) involved in this relationship. In order to do so, we used the Job Demands-Resources (JD-R) theory as a theoretical framework. We chose this theory for several reasons.

First, JD-R theory and its associated empirical evidence suggest different mechanisms through which leader developing behavior may be related to employees' health complaints. This theory distinguishes between job demands (aspects of work that cost energy, such as role overload; Bakker & Demerouti, 2018) and job resources ("aspects of the job that are functional in achieving

work goals, reduce job demands and the associated physiological and psychological costs, or stimulate personal growth, learning, and development"; Bakker & Demerouti, 2017, p. 274), such as leader developing behavior. The theory posits that job demands and job resources initiate two different processes: 1. a motivational process, through which job resources improve employee motivational states (e.g., work engagement, commitment), which in turn lead to employee wellbeing and performance (Bakker & Demerouti, 2017, 2018), and 2. a health-impairment process, through which chronic job demands lead to employee strains (e.g., emotional exhaustion), which in turn can result in health problems. Although the theory suggests that these two processes are independent (Demerouti et al., 2001), several studies (e.g., Bakker et al., 2003; Schaufeli & Bakker, 2004) and meta-analyses (Alarcon, 2011; Crawford et al., 2010; Lee & Ashforth, 1996) have shown cross-links between variables involved in the two processes: job resources also are negatively related to employee burnout, whereas job demands also are negatively related to motivational states. Therefore, the combination of the JD-R theory and the available empirical evidence, together with the specific theoretical arguments that we will present later, suggest that leader developing behavior (a job resource) can be related to employees' health complaints via two mechanisms: 1. its relationship with motivational states (as considered in the aforementioned motivational process), but also 2. its relationship with employees' strains (e.g., emotional exhaustion).

Second, JD-R theory allows us to estimate the indirect relationship between leader developing behavior and employees' health complaints while controlling for the influence of job demands on the health-impairment and the motivational processes. Doing so yields a more accurate estimation of the investigated indirect relationship. Third, Bakker and Demerouti (2017, 2018) have recently proposed that the theory should be also tested at multiple levels of analysis and suggest ways in which these extensions can be accomplished. Therefore, the theory is informative for researchers willing to investigate the relationship between job resources and employee health indicators at multiple levels (as we are). And fourth, with its explicit reference to job resources, JD-R theory is well-connected with the Conservation of Resources (COR) theory (Hobfoll, 2002), which we will use to justify some of the specific relationships investigated.

Our research model is displayed in Figure 1. This model posits that leader developing behavior is indirectly related to employees' health complaints via two mediators (organizational commitment and emotional exhaustion; see the black arrows in Figure 1). These relationships are estimated while controlling for the relationships between role overload and the two considered mediators (see the grey arrows in Figure 1).



Figure 1. The research model. Black lines represent the relationships included in the hypothesized mediated relationships. Grey lines represent relationships we controlled for when estimating the hypothesized relationships.

We focused on leader developing behavior because it is a work-unit resource that produces additional personal resources for employees in the form of improved and new skills, and increased confidence in their capabilities and promotion opportunities (Yukl,

2012). This “resource multiplier” characteristic may enhance its relationship with its hypothesized correlates, and renders it a valid choice to examine the relationship between leadership behavior and employees’ health complaints. Moreover, leader developing behavior is one of the specific leadership behaviors “found to be relevant for effective leadership in research conducted over the past half century” (Yukl et al. 2002, p. 29; see also, Yukl, 2012). We chose organizational commitment as the mediator in the motivational process embedded in our model for the following reasons. First, leaders are the organization representatives for employees. According to social exchange theory (Blau, 1964), organizational commitment (i.e., the psychological attachment felt by employees for the organization; O’Reilly & Chatman, 1986) is a direct response of employees to the resources provided by leaders (e.g., training, career support) that show a developing behavior. Second, as Meyer et al. (2004) explain, commitment is one component of motivation. Thus, it is an appropriate intervening variable to consider when modeling the distant correlates of leader developing behavior through the motivational process of JD-R theory. We included role overload (i.e., having role expectations that surpass employees’ time and resources; Tordera et al., 2008) because it is a typical job demand that has shown significant relationships with not only employee strains (e.g., emotional exhaustion; Alarcon, 2011) but also with motivational states (e.g., organizational commitment; see meta-analysis by Mathieu & Zajac (1990) and Örtqvist & Wincent (2006), and Bowling et al. (2015)). Thus, controlling for role overload when estimating the relationships between leader developing behavior and its correlates will yield more accurate estimates. Finally, we chose emotional exhaustion (i.e., “feelings of being overextended and depleted of one’s emotional and physical resources”, Maslach et al., 2001, p. 399) for three reasons. First, research suggests that job resources, such as leader developing behavior, protect individuals from strains related to resource depletion, such as emotional exhaustion (Crawford et al., 2010). Second, emotional exhaustion “represents the basic individual stress dimension of burnout” (Maslach et al., 2001, p. 399). And third, when it comes to health outcomes, emotional exhaustion is the most predictive component of burnout (Maslach et al., 2001, p. 406).

This study aims to make several contributions. First, we identify two mechanisms through which leader developing behavior is negatively related to employees’ health complaints. Considering the scarcity of knowledge and empirical evidence about this relationship (Inceoglu et al., 2018), we contribute to enhancing our understanding about why these two variables are related. Second, recent updates of JD-R theory have asked researchers to extend it at higher levels of analysis (Bakker & Demerouti, 2017, 2018). By investigating the hypothesized relationships at the within (i.e., individual) and between (i.e., work-unit) levels by means of multilevel-SEM, we answer the question about whether the relationships observed within work-units (i.e., at the individual level) are generalizable at the work-unit level. Third, the mentioned updates of JD-R theory have also called for research about the relationship between leadership behaviors and employee well-being. Our study contributes to answer this call by elaborating on the constructs, relationships, and empirical evidence associated with JD-R theory. Finally, Bakker and Demerouti (2017) acknowledge that one of the unresolved issues of JD-R theory is related to the independence of the health-impairment and motivational processes. Crawford et al. (2010) meta-analytical path-analysis provides evidence about cross-links within JD-R theory (e.g., both demands and resources had significant relationships with work engagement and burnout). Our study contributes to clarifying this issue by providing empirical

evidence about these cross-links at multiple levels.

## Theoretical Background and Hypotheses

Firstly, we focus on the hypothesized relationships at the individual (within-unit) level.

**The motivational sequence.** We posit that leader developing behavior is negatively related to employees’ health complaints via organizational commitment. This mediated relationship is congruent with the motivational process embedded within JD-R theory. This theory posits that job resources are key drivers of motivational states, which in turn lead to “increased well-being and positive organizational outcomes” (Bakker, Demerouti, & Sanz-Vergel, 2014, p. 399). Next, we focus on the theoretical justification of the specific relationships proposed above.

Leaders are the organization representatives toward their subordinates. By developing employees’ skills and capabilities and supporting their career advancement, leaders help employees to satisfy their competence and autonomy needs (Deci & Ryan, 1985). According to social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960), employees may reciprocate this leadership behavior that yields important benefits for them by becoming more committed to their organization (Cropanzano et al., 2017). Therefore, we posit that leader developing behavior is positively related to organizational commitment. Supporting this expectation, Yukl (2012) suggests that leaders can use relations-oriented behaviors (such as developing) to increase employee commitment.

We expect to observe this relationship even after controlling for the negative relationship between role overload and organizational commitment. This latter relationship can be justified by using social exchange theory. According to it, when the organization treats employees in an undesirable way, in response they can reciprocate this unwanted treatment with decreased attachment (Cropanzano et al., 2017). Thus, role overload can be understood by employees as a lack of consideration from the organization that may be reciprocated with reduced organizational commitment (Bowling et al., 2015). Supporting this reasoning, Bowling and colleagues’ (2015) meta-analysis showed that the corrected correlation between role overload and organizational commitment was statistically significant and negative (-.11).

We propose that organizational commitment is negatively related to health complaints. This relationship can be explained by using Conservation of Resources (COR) theory (Hobfoll, 2002; Panaccio & Vandenberghe, 2009). Employees with high commitment can attach meaning and purpose to their work because they identify with the organization’s goals and values. This identification also yields a high level of self-esteem and pride of belonging to the organization. Having meaning and purpose, and feeling self-esteem and pride, are key resources for employees. According to Hobfoll (2002, p. 318), employees with resources “are clearly positioned to experience fewer stressful events, can preserve their resource armamentaria, and can apply resources toward growth and development”, that is, they can use their resources to foster and preserve their wellbeing (i.e., “the overall quality of an employee’s experience and functioning at work”, Grant, Christianson, & Price, 2007, p. 52). Moreover, because resources are valuable per se, “those who possess resources ... will view themselves, more favorably” (Hobfoll, 2002, p. 319). Therefore, the resources provided by high levels of commitment lead to high levels of perceived wellbeing. Health complaints are indicators of physical wellbeing (i.e., defined “in terms of bodily health and functioning”, Grant et al., 2007, p. 53), which in turn is considered a dimension of wellbeing (Grant et al., 2007; Inceoglu

et al., 2018). Research has shown that wellbeing is positively related to physical health (Hobfoll, 2002; Veenhoven, 2008). Finally, there is empirical evidence supporting a negative relationship between organizational commitment and health complaints (Graf, Cignacco, Zimmermann, & Zúñiga, 2016; Schalk, 2011).

Considering the arguments explained above, we hypothesize the following:

**Hypothesis 1:** Within units, employees' perceptions of leader developing behavior has a negative indirect effect on employees' health complaints via organizational commitment, so that leader developing behavior is positively related to organizational commitment, which in turn is negatively related to health complaints.

At this point, we remember that in multilevel-SEM, individual-level variables can be decomposed into two latent components: a between-unit component that represents the unit's latent mean, and a within-unit component that represents individual scores centered around the unit mean (see Preacher et al., 2016, p. 190). In Hypotheses 1 and 2, the proposed relationships involve the within-unit components of the corresponding variables.

**The resource-protector sequence.** We also posit that leader developing behavior is negatively related to employees' health complaints via emotional exhaustion. The relationship between the first and the latter variable can be justified with COR theory. According to it, stress occurs when resources are lost, and if stress is maintained over time, it yields emotional exhaustion (Hobfoll & Freedy, 1993; Hobfoll et al., 2018). However, employees that have more resources "are less vulnerable to resource loss and more capable of resource gain" (Hobfoll et al., 2018, p. 106), so that they are better protected from the strains associated with resource depletion (Crawford et al., 2010). Thus, by obtaining resources, employees decrease the probability of experiencing the emotional exhaustion associated with resource depletion (Hobfoll et al., 2018). Support for this relationship is provided by Crawford and colleagues' (2010) meta-analytical SEM model, which shows that resources were negatively related to burnout, after controlling for the influence of job demands.

Leaders who enact a developing behavior provide their subordinates with valuable resources such as training, new skills and knowledge, and support for career advancement. These resources have the capability of generating additional personal resources such as increased confidence in employees' competence and professional career, and self-esteem (Yukl, 2012). Therefore, based on COR theory and the protector role of resources against strains, we expect leader developing behavior to be negatively related to emotional exhaustion.

We expect to observe this relationship even after controlling for the positive relationship between role overload and emotional exhaustion. COR and JD-R theories posit that demands such as role overload consume resources. If role overload persists over time, it can lead to resource depletion and emotional exhaustion (Bakker et al., 2014). Meta-analyses show that role overload is positively related to emotional exhaustion (Alarcon, 2011; Bowling et al., 2015).

Research shows that emotional exhaustion is positively related to health complaints (see Bakker et al., 2014, for a review). This relationship is part of the health-impairment process proposed by JD-R theory. The mechanisms linking burnout (including emotional exhaustion) and physical health were reviewed by Melamed and colleagues (2006). These mechanisms included "the metabolic syndrome, dysregulation of the hypothalamic-pituitary-adrenal axis along with sympathetic nervous system activation, sleep disturbances, systemic inflammation, impaired immunity functions, blood coagulation and fibrinolysis, and poor

health behaviors" (p. 317). These authors concluded that "burnout has deleterious consequences for physical health" (p. 344).

Considering the arguments explained above, we hypothesize the following:

**Hypothesis 2:** Within units, employees' perceptions of leader developing behavior has a negative indirect effect on employees' health complaints via emotional exhaustion, so that leader developing behavior is negatively related to emotional exhaustion, which in turn is positively related to health complaints.

**Relationships at the work-unit level.** "The vast majority of research on the JD-R model has been conducted at the individual level" (Bakker & Demerouti, 2017, p. 280). Thus, Bakker and Demerouti (2017, 2018) have encouraged researchers to extend the model at higher levels of analysis. Because leader developing behavior can be also conceptualized as a work-unit construct (as work-unit members' shared perceptions of their leader's developing behavior), it makes sense to investigate whether the relationships hypothesized at the individual level can be generalized at the work-unit level. We think that analogous mechanisms as those proposed to operate at the individual level may operate at the work-unit level.

Briefly, based on the motivational sequence, in work-units in which leaders develop unit members, the latter will have a shared obligation to reciprocate that will lead them to experience a high level of shared organizational commitment. This provides unit members with valuable resources (shared meaning, purpose, self-esteem, and pride) that can be used to maintain and preserve their general and physical well-being. Considering the "resource protector" sequence, in work-units in which leaders develop unit members, these members will have a great amount of shared resources that will protect them against high shared emotional exhaustion. Low shared emotional exhaustion will not trigger the physiological and behavioral mechanisms that impair physical health. Considering these arguments, we hypothesize:

**Hypothesis 3:** Between units, leader developing behavior has a negative indirect effect on health complaints via organizational commitment, so that leader developing behavior is positively related to organizational commitment, which in turn is negatively related to health complaints.

**Hypothesis 4:** Between units, leader developing behavior has a negative indirect effect on employees' health complaints via emotional exhaustion, so that leader developing behavior is negatively related to emotional exhaustion, which in turn is positively related to health complaints.

The relationships proposed in Hypotheses 3 and 4 involve the between-unit components of the concerned variables (i.e., units' latent means).

## Method

### Participants and Data Collection

Data were collected from a regional public health service in Spain following a two-stage randomized sampling procedure. First, 250 work-units were randomly selected from the health service. Work-unit was defined as the group of employees who hierarchically depended on the same supervisor. Then, four members of each work-unit were sampled, one of whom was the supervisor. An external firm was hired to collect data from employees by means of a structured interview in which a questionnaire was used. When it was not possible to interview 3 unit members from the sampled units, the interviewing agency agreed to compensate for this by interviewing more than 3 members pertaining to the more accessible units. These additional

unit members were also randomly selected. Participation was voluntary and participants' verbal consent was provided to the interviewer before the interview. Because our interest was focused on the relationship between unit members' perceptions of leadership behavior and health complaints, data from work-unit supervisors were excluded. After removing units with only two respondents, the sample for this study was composed of 538 employees working in 170 work-units.

The median unit size was 25 members ( $Mean = 32.8$ ,  $SD = 25.6$ ). Sixty-five percent of the employees were women. Average age was 41.2 years ( $SD = 9.6$ ) and average organizational tenure was 14.2 years ( $SD = 8.1$ ). Twenty-one percent were physicians, 34% were nurses, 14.9% were other health professionals, and the remaining were non-health care employees (i.e., blue- and white-collar workers).

## Instruments

**Leader developing behavior.** This variable was measured with a 3-item scale developed by the authors ("My supervisor or immediate boss: 1. Helps me to develop my skills and knowledge at my job; 2. Gives me adequate training to do my job; 3. Helps me to prepare to take on greater responsibilities in the future"). Respondents answered using a 5-point scale (1. Strongly in disagreement, 5. Strongly in agreement). We submitted the scale to a multilevel confirmatory factor analysis (ML-CFA) to test the expected 1-factor structure. Following recent recommendations to assess fit in multilevel models (González-Romá & Hernández, 2017; Ryu, 2014), we based model fit on level-specific fit indices, and reported the level-specific indices provided by Mplus 8.4: the Standardized Root Mean Square Residual (SRMR) for the within and between parts of the model. We also estimated the omega reliability coefficient at both levels (Geldhof et al., 2014; McNeish, 2018). The unifactorial model showed good fit to data (SRMR-within = .004; SRMR-between = .036). The omega reliability coefficients of the scale at the between (unit) and within (individual) levels were .97 and .89, respectively. The average index of within-unit agreement ( $r_{wg(j)}$ ; James et al., 1984) was moderate (.52,  $SD = .38$ ,  $Median = .66$ ; LeBreton & Senter, 2008). We conducted a one-way analysis of variance (ANOVA) to ascertain whether there was statistically significant between-units discrimination in average unit scores in this variable. The results obtained,  $F(169, 358) = 1.53$ ,  $p < .01$ , showed that there was a significant degree of between-units differentiation. The corresponding Intraclass Correlation Coefficient (1) [ICC(1)] obtained (.14) indicated that 14% of the variance resided at the unit level.

**Role overload.** This variable was measured with a 3-item scale (Camman et al., 1979): "1. I have too much work to do, to do everything well. 2. The amount of work I have to do, or I am asked to do, is excessive. 3. I usually lack time to complete my work". Respondents answered using a 5-point scale (1. Strongly in disagreement, 5. Strongly in agreement). We submitted the scale to a ML-CFA. The unifactorial model showed good fit to data (SRMR-within = .003; SRMR-between = .023). The omega reliability coefficients of the scale were: between-level: .90; within-level: .82. The average index of within-unit agreement ( $r_{wg(j)}$ ; James et al., 1984) was moderate (.53,  $SD = .35$ ,  $Median = .65$ ). The ANOVA results  $F(169, 366) = 1.57$ ,  $p < .01$ , showed that there was a significant degree of between-units differentiation. The corresponding ICC(1) obtained (.15) indicated that 15% of the variance resided at the unit level.

**Organizational commitment.** This variable was measured with 3 items based on the internalization subscale of O'Reilly and

Chatman's (1986) organizational commitment scale ("1. I am proud to tell others that I am a part of this organization. 2. The values that the company I work for defends and supports are important to me. 3. I share the goals of my company"). Respondents answered using a 5-point scale (1. Strongly in disagreement, 5. Strongly in agreement). The unifactorial model submitted to a ML-CFA showed an acceptable fit to data (SRMR-within = .012; SRMR-between = .093; "Fit values of SRMR  $\leq .10$ ... are typically considered indicators of an acceptable fit", Lang & Fries, 2006, p. 219). The omega reliability coefficients of the scale were: between-level: .95; within-level: .78. The average index of within-unit agreement ( $r_{wg(j)}$ ; James et al., 1984) was moderate (.61,  $SD = .37$ ,  $Median = .75$ ). The ANOVA results  $F(169, 365) = 1.63$ ,  $p < .01$ , showed that there was a significant degree of between-units differentiation. The corresponding ICC(1) obtained (.17) indicated that 17% of the variance resided at the unit level.

**Emotional exhaustion.** This variable was measured with a reduced version of the emotional exhaustion subscale of the Maslach Burnout Inventory (Maslach & Jackson, 1986). The reduced version was proposed and validated by Peiró et al. (2001), and is composed of three items (e.g., "I feel used up at the end of the work day"). Respondents answered using a 5-point scale (1. Never, 5. Many times). The unifactorial model submitted to a ML-CFA showed good fit to data (SRMR-within = .003; SRMR-between = .024). The omega reliability coefficients of the scale were: between-level: .97; within-level: .77. The average index of within-unit agreement ( $r_{wg(j)}$ ; James et al., 1984) was moderate (.63,  $SD = .32$ ,  $Median = .75$ ). The ANOVA results  $F(169, 365) = 1.64$ ,  $p < .01$ , showed that there was a significant degree of between-units differentiation. The corresponding ICC(1) obtained (.17) indicated that 17% of the variance resided at the unit level.

**Health complaints.** This variable was measured with a 5-item scale whose items asked respondents to report how often they had had the following health problems: constant fatigue, back pain, headaches, digestive problems, and a state of anxiety and nervousness. Respondents answered using a 5-point scale (1. Never, 5. Many times). Very similar scales have been used in previous research (Graf et al., 2016; Liu et al., 2010; Schalk, 2011). The unifactorial model submitted to a ML-CFA showed good fit to data (SRMR-within = .029; SRMR-between = .067). The omega reliability coefficients of the scale were: between-level: .91; within-level: .70. The average index of within-unit agreement ( $r_{wg(j)}$ ; James et al., 1984) was moderate (.60,  $SD = .35$ ,  $Median = .75$ ). The ANOVA results  $F(169, 366) = 1.43$ ,  $p < .01$ , showed that there was a significant degree of between-units differentiation. The corresponding ICC(1) obtained (.12) indicated that 12% of the variance resided at the unit level.

## Data Analysis Procedures

The hypothesized relationships were tested simultaneously at the individual and unit levels by means of multilevel Structural Equation Modeling (ML-SEM) methods (Preacher et al., 2010), using the program Mplus 8 (Muthén & Muthén, 2017). Robust maximum likelihood estimation methods were used. The hypothesized indirect effects were estimated as the product of the structural parameters involved in the corresponding mediated relationship. The hypothesized indirect effects were tested by means of the distribution-of-the-product method as implemented in the RMediation tool (Tofghi & MacKinnon, 2011). We chose this method because it "has the best statistical performance of existing methods for building CIs [confidence intervals] for the mediated effect" (Tofghi & MacKinnon, 2011, p. 692).

Because the study hypotheses specified directional

relationships derived from theory, based on logical consistency, we conducted one-tailed,  $\alpha = .05$  hypothesis tests (Cho & Abe, 2013). Mediation methodologists think one-tailed tests “are often justified in mediation research” (Preacher et al., 2010, p. 217). To be consistent, we reported the 90% confidence intervals for all the indirect effects.

**Results**

Descriptive statistics and correlations among the study observed individual-level variables are displayed in Table 1.

Table 1  
Descriptive statistics and correlations among the study observed variables

Variables	1	2	3	4	M	SD
1. Leader Developing behavior					3.02	1.22
2. Role overload	-.02				3.03	1.09
3. Organizational commitment	.28*	-.14**			3.58	1.00
4. Emotional exhaustion	-.09*	.43**	-.22**		3.05	0.95
5. Health complaints	-.12*	.22**	-.16**	.51**	2.41	0.85

Note. \* $p < 0.05$ , \*\* $p < 0.01$ , 1-tailed tests.  $N = 538$  employees.

Our research model was simultaneously tested at the individual and work-unit levels (see Figure 2). The model showed good fit to data at both levels (SRMR-within = .019; SRMR-between = .068), and also showed good levels of overall fit ( $\chi^2 = 4.71$ ,  $d.f. = 4$ ,  $p = .32$ ; RMSEA = .018; CFI = .998). We compare the fit of the hypothesized model (M1), which posited full mediation, with the fit of two alternative, partial mediation models: M2, a model that included direct paths from leader developing behavior and role overload to health complaints at the within level; and M3, a model that included the aforementioned paths at the between level only. The differences in fit between M1 and M2 ( $\Delta\chi^2 = 2.19$ ,  $\Delta d.f. = 2$ ,  $p = .33$ ) and between M1 and M3 ( $\Delta\chi^2 = 1.59$ ,  $\Delta d.f. = 2$ ,  $p = .45$ ) were not statistically significant. Moreover, the Akaike Information Criterion (AIC) obtained for M1 (7184.08) was smaller than the AICs obtained for M2 (7185.85) and M3 (7187.04). Thus, the hypothesized model was the most parsimonious and best fitting model. In addition, none of the additional paths included in M2 and M3 was statistically significant. The estimated parameters for the hypothesized relationships are displayed in Figure 2.

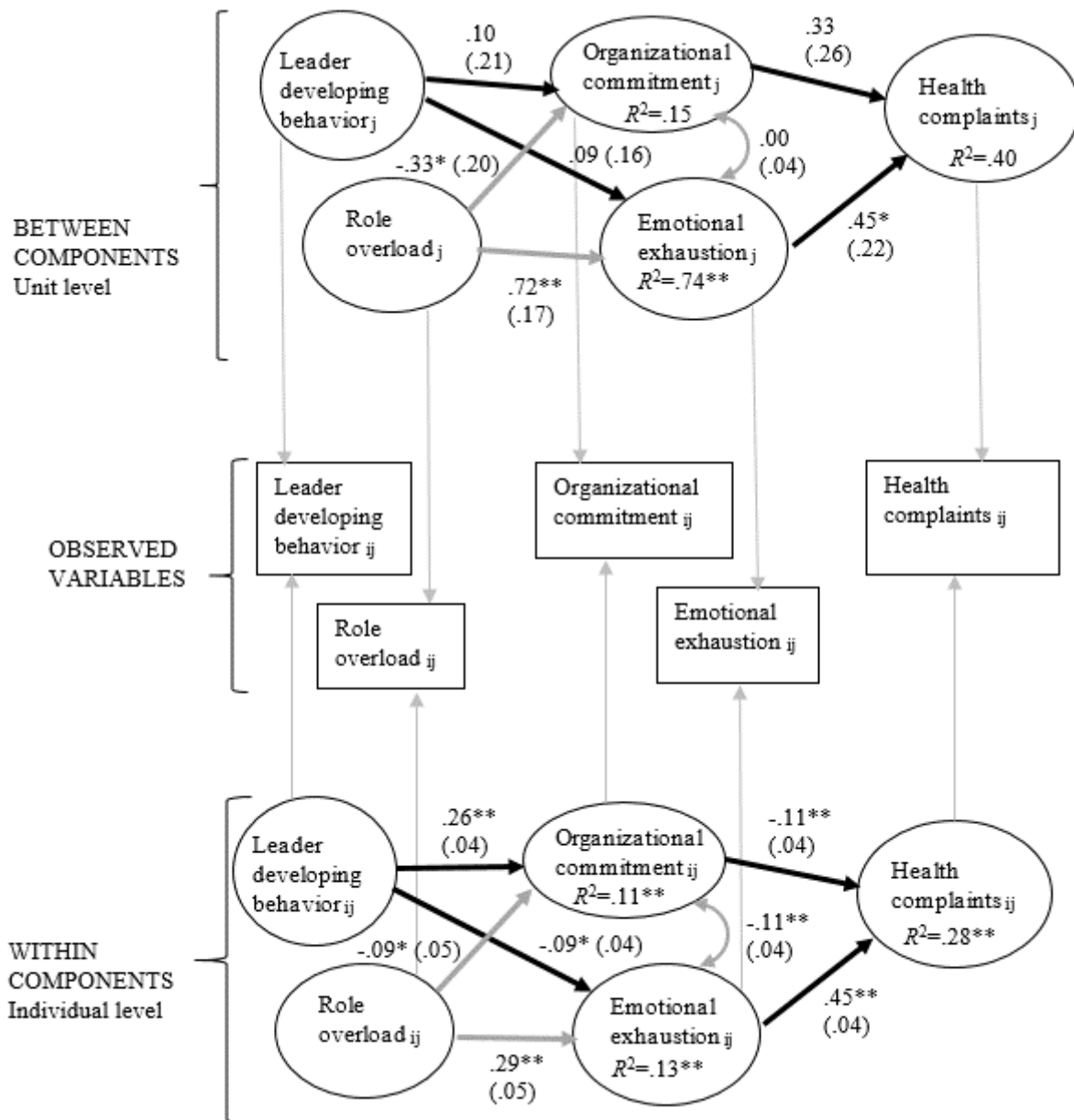


Figure 2. Unstandardized parameter estimates for the hypothesized relationships at the between (unit) and within (individual) levels. Black lines represent the hypothesized relationships. Grey thick lines represent relationships we controlled for when estimating the hypothesized relationships. Grey thin lines show the decomposition of observed variables into their within and between components.  $R^2$ : explained variance. \*  $p < .05$ ; \*\*  $p < .01$ , 1-tailed tests.

## Individual Level Relationships

First, we will focus on the relationships observed at the individual level. Leader developing behavior was positively related to organizational commitment (.26,  $p < .01$ ), and the latter was negatively related to health complaints (-.11,  $p < .01$ ). The indirect effect estimating the relationship between leader developing behavior and health complaints via organizational commitment was negative (-0.029, SE = 0.011) and statistically significant (90% CI = [-0.048, -0.011]), rendering support for Hypothesis 1.

Leader developing behavior was negatively related to emotional exhaustion (-.09,  $p < .05$ ), which in turn was positively related to health complaints (.45,  $p < .01$ ). The indirect effect estimating the relationship between leader developing behavior and health complaints via emotional exhaustion was negative (-0.04, SE = 0.018) and statistically significant (90% CI = [-0.071, -0.011]), providing empirical support for Hypothesis 2.

All the aforementioned relationships were observed after controlling for the relationship of role overload with organizational commitment (-.09,  $p < .05$ ) and emotional exhaustion (.29,  $p < .01$ ). Although not hypothesized, role overload showed a positive indirect effect on health complaints via emotional exhaustion (0.13, SE = 0.025, 90% CI = [0.09, 0.174]). The indirect effect of role overload on health complaints via organizational commitment was positive (0.009, SE = 0.007) but not statistically significant because its 90% CI included zero (0, 0.021).

The hypothesized model accounted for 28% of the variance of health complaints at the within-unit (i.e., individual) level, and 11% and 13% of the within-unit variance of organizational commitment and emotional exhaustion, respectively.

## Work-unit Level Relationships

Focusing on the relationships observed at the work-unit level, leader developing behavior was not related to organizational commitment (-.10, SE = .21,  $p > .05$ ), and the latter was not related to health complaints (.33, SE = .26,  $p > .05$ ). The indirect effect of leader developing behavior on health complaints via organizational commitment was not statistically significant (0.033, SE = 0.092, 90% CI = [-0.096, 0.201]). Thus, Hypothesis 3 was not supported by the data.

Regarding Hypothesis 4, leader developing behavior was not related to emotional exhaustion (.09, SE = .16,  $p > .05$ ), but the latter was positively related to health complaints (.45, SE = .22,  $p < .05$ ). The indirect effect of leader developing behavior on health complaints via emotional exhaustion was not statistically significant (0.04, SE = 0.083, 90% CI = [-0.081, 0.188]). Thus, Hypothesis 4 was not supported by the data.

Although not hypothesized, role overload showed a positive indirect effect on health complaints via emotional exhaustion (0.32, SE = 0.18, 90% CI = [0.057, 0.642]). Moreover, role overload showed a negative relationship with organizational commitment (-.33, SE = .20,  $p < .05$ ), but its indirect effect on health complaints via organizational commitment was not statistically significant (0.11, SE = 0.12, 90% CI = [-0.336, 0.039]).

The hypothesized model accounted for 40% of the variance of health complaints at the between-unit level, and 15% and 74% of the between-unit variance of organizational commitment and emotional exhaustion, respectively.

## Discussion

The goal of our study was to ascertain whether a specific leadership behavior (developing subordinates) was indirectly

and negatively related to employees' health complaints and identify some of the mechanisms involved in this relationship. The results obtained at the individual level of analysis showed that, as expected, leader developing behavior was negatively related to employees' health complaints through two different mediators: organizational commitment and emotional exhaustion. However, at the work-unit level, leader developing behavior was not indirectly related to employees' health complaints via any of the two mediators considered. These results have theoretical and practical implications that we discussed next.

## Theoretical Implications

First, at the individual level of analysis, we identified two mechanisms through which leader developing behavior is related to employees' health complaints. In the first mechanism, organizational commitment plays a key mediator role. We suggest that the underlying theoretical rationale may be as follows. Leaders that develop subordinates' skills and capabilities and support their career, help the latter to satisfy their competence and autonomy needs (Deci & Ryan, 1985). As a consequence, and based on social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960), employees may feel the obligation to reciprocate their leaders, and a way to do so is by becoming more committed to their organization (Cropanzano et al., 2017), of which leaders are representatives. Employees committed to their organization identify with the organization's goals and values (O'Reilly & Chatman, 1986). This identification provides them with a sense of meaning and purpose in their job, and also yields a high level of self-esteem and pride of belonging to the organization (Panaccio & Vandenberghe, 2009). These are important resources for employees that can be used to foster and preserve their wellbeing (Hobfoll, 2002). Because health complaints are an indicator of wellbeing (Grant et al., 2007; Inceoglu et al., 2018), committed employees who experience high levels of wellbeing should also report less health complaints.

According to the second mechanism we identified at the individual level, leader developing behavior is related to employees' health complaints through emotional exhaustion. We posit that the underlying theoretical rationale may be as follows. Leaders who develop their subordinates offer them valuable resources (e.g., new skills and career support) that can generate additional personal resources, such as enhanced confidence and self-esteem (Yukl, 2012). Based on COR theory (Hobfoll, 2002), employees that have more resources are better protected from the strains associated with resource depletion (Crawford et al., 2010). Therefore, by obtaining resources like those mentioned above, employees decrease the probability of experiencing the emotional exhaustion associated with resource depletion (Hobfoll et al., 2018). Considering the physiological and behavioral mechanisms that link emotional exhaustion and physical health (Melamed et al., 2006), feeling low levels of emotional exhaustion should lead to reporting less health complaints.

The results observed and the theoretical justifications provided contribute to improving our understanding about *how* and *why* a specific leadership behavior (developing subordinates) is related to health complaints. Considering the scarcity of empirical research in this area, and that according to Inceoglu and colleagues' (2018) review, "generally, studies did not provide a strong theoretical basis for the mechanisms that explain the relationship between specific leadership behaviors and employee well-being" (p. 184), our study helps understand the underpinnings of an important relationship for employee health. Future studies can consider our theoretical arguments to investigate the relationships between other specific

leadership behaviors and wellbeing indicators through different mediators.

Second, our multilevel investigation allowed us to determine whether the relationships observed at the individual level can be generalized at the work-unit level. As far as the hypothesized relationships are concerned, they cannot be generalized. At the work-unit level, leader developing behavior was not indirectly related to health complaints via either organizational commitments or emotional exhaustion. These results suggest that organizational commitment is not a key mediator at the work-unit level. Thus, future research should consider other potential mediators (e.g., work-unit engagement; Costa et al., 2014). Interestingly, although not hypothesized, the observed indirect effect of role overload on health complaints via emotional exhaustion at the individual level was also observed at the work-unit level. This means that the health-impairment process involved in our model (i.e., role overload → emotional exhaustion → health complaints) operated at both levels of analysis, supporting the existence of a specific homology. All these results contribute to answering Bakker and Demerouti's (2017, 2018) call of extending JD-R theory at higher levels of analysis.

Third, Bakker and Demerouti (2017) pointed out that one of the unresolved issues of JD-R theory is related to the assumed independence of the two processes that link job demands and resources to job outcomes: the health-impairment process and the motivational process. Previous multi-sample (e.g., Schaufeli & Bakker, 2004) and meta-analytical studies (Crawford et al., 2010) have provided evidence that supports the existence of cross-links between the two aforementioned processes. For instance, Crawford and colleagues (2010) found that job resources were negatively related to burnout and hindrances job demands (such as role overload) were negatively related to work engagement. Our study provides evidence supporting the existence of cross-links at the individual and unit levels. As expected, at the individual level, leader developing behavior was negatively related to emotional exhaustion, and role overload was negatively related to organizational commitment. Moreover, the fact that Hypothesis 2 was supported suggests the existence of a *resource-protector process* by means of which obtaining resources may protect employees from the emotional exhaustion associated with resource depletion (Hobfoll et al., 2018) and the subsequent health problems (Melamed et al., 2006). In addition, the observed (non-hypothesized) indirect effect of role overload on health complaints via organizational commitment at the individual level suggests the existence of a *disengagement process* by means of which job demands may trigger detachment from the organization (and the job) and lead to the undesired consequences associated with it. Interestingly, in our study, the relationship between role overload and organizational commitment was also observed at the work-unit level. Previous empirical evidence (Crawford et al., 2010) and the results reported here, together with the theoretical arguments we have provided, suggest that: 1. the health-impairment process and the motivational process are not as independent as assumed by JD-R theory, and 2. there might be additional processes operating among the constructs considered in JD-R theory. Future research should test for these additional processes.

### Practical Implications

Our findings have a clear and direct practical implication: by enacting a developing behavior, organizational leaders (i.e., supervisors, team managers, middle managers and top managers) can help employees to increase their organizational commitment, reduce their emotional exhaustion, and improve their health.

Therefore, efforts aimed at promoting developing behaviors among organizational leaders should be encouraged. These efforts can take different forms. For instance, training programs of managerial and leadership development should include a specific module devoted to fostering developing behavior. In this module, the utilization of role playing, vicarious learning, and role models could be helpful. As another example, job crafting interventions can be used to train employees to increase their resources and decrease their hindrance demands (e.g., role overload). Several studies have shown that these interventions are effective (see Gordon et al., 2018; Hulshof et al., 2020; Van den Heuvel et al., 2015). Job crafting interventions could be used to train employees to stimulate an important resource: developing behaviors from their leaders. In addition, considering the relationship between role overload and health complaints via emotional exhaustion observed in our study, job crafting interventions could be also used to train employees to reduce their role overload.

Based on the available empirical evidence, efforts aimed at promoting developing behaviors among organizational leaders may not only contribute to improving employee health, but also to enhance individual and organizational performance (Yukl, 2012).

### Limitations and Strengths

This study has important limitations that must be considered when interpreting its results. First, we implemented a cross-sectional design. This precludes any sound conclusion about causality among the variables in our research model. Future research should investigate the relationships addressed here with time-lagged or longitudinal designs. Second, all the data came from the same source. Thus, common method variance might have inflated the observed relationships. Future studies could try to replicate our findings using objective or external measures of employee health (i.e., visits to the physician, sickness absence records, coworker ratings). This concern notwithstanding, Spector (2006) stated that empirical evidence casts doubt “that the method itself produces systematic variance in observations that inflates correlations to any significant degree” (p. 221). The fact that some of the correlations between the observed variables were low and close to zero (see Table 1) suggests that common method variance was not a main problem in our study. Third, we did not measure some constructs that we mentioned in our theoretical arguments (e.g., felt obligation to reciprocate, employee wellbeing). Thus, we cannot offer empirical evidence about their role in the investigated relationships. Future studies could measure these constructs to ascertain whether they play the role we assumed in our theoretical arguments. Fourth, leader developing behavior was measured with a scale built by the authors, which may yield some doubts about its validity. However, the facts that the scale items were strongly based on the variable definition and cover the construct content, and the relationships that our leader developing behavior scale showed with organizational commitment and emotional exhaustion at the individual level were as expected (positive and negative, respectively) support its validity. These promising results notwithstanding, future studies should investigate further the validity of this scale.

Our study also has some strengths we want to highlight. First, because we used a two-stage randomized sampling procedure the results obtained can be generalized to the involved population. Second, we used a multilevel approach that allowed us to model the investigated relationships at the individual and work-unit level of analysis, and determine which relationships operate at the two levels and which ones do not. In order to extend JD-R theory at higher levels of analysis, future studies should adopt a multilevel



approach.

## Conclusion

We showed that leader developing behavior is related to employees' health complaints through two different mediators: organizational commitment and emotional exhaustion. Thus, our study contributes to improving our understanding about *how* and *why* this specific leader behavior is related to employee health. We hope our study helps develop an area of inquiry that needs more attention from researchers (Inceoglu et al., 2018).

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