

# Antecedents of Health-Promoting Leadership and Workload as Moderator

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## Abstract

This study builds on the theory of planned behavior and investigates antecedents of health-promoting leadership behaviors (HPL behaviors): positive health-promoting leadership attitude (HPL attitude) as well as perceived health-promoting leadership norms (perceived HPL norms), and lack of perceived health-promoting leadership behavioral control (perceived HPL behavioral control). Furthermore, based on the conservation of resources theory, these antecedents are conceptualized as personal and job resources with managers' perceived workload being examined as a moderating boundary condition, suggesting that workload as a job demand facilitates resource loss. A survey was administered to 315 managers. Data were analyzed using hierarchical linear regression analysis and moderation analysis. Results revealed that HPL attitude and perceived HPL norms were positively related to HPL behaviors, whereas a lack of perceived HPL behavioral control was negatively related to HPL behaviors. Furthermore, high workload weakened the relationship between perceived HPL norms and HPL behaviors. Workload did not moderate the relationships between the antecedents HPL attitude and lack of perceived HPL behavioral control, and HPL behaviors. Organizations should offer interventions to foster positive HPL attitude, give managers opportunities for HPL behavioral control, and promote perceived HPL norms. They should acknowledge that high workload may inhibit perceived HPL norms. Intervention approaches with regard to personnel and organizational development for practitioners are discussed. This study contributes to the literature by testing direct antecedents of HPL behaviors. Moreover, this study is the first to test workload as a boundary condition.

## Keywords

health-promoting leadership, job resources, occupational health promotion, theory of planned behavior, workload

For decades, leadership researchers have focused mainly on performance impacts (Gang, In-Sue, Courtright, & Colbert, 2011), although employee health is known to be crucial for organizational productivity and success (Leka & Houdmont, 2010; Quick & Tetrick, 2011). Consequently, review articles and meta-analyses have recently shifted attention to positive and negative leadership effects on health-related outcomes (Harms, Credé, Tynan, Leon, & Jeung, 2017; Inceoglu, Thomas, Chu, Plans, & Gerbasi, 2018; Kuoppala, Lamminpää, Liira, & Vainio, 2008; Montano, Reeske, Franke, & Hüffmeier, 2017; Skakon, Nielsen, Borg, & Guzman, 2010; Sonntag & Stegmaier, 2015).

Employee-oriented, health-promoting leaders demonstrate trustworthiness, respect, and appreciation of employees as individuals and encourage employees to participate in health programs. Consequently, they enhance affective well-being and job satisfaction and reduce burnout and depression (Nyberg, Bernin, & Theorell, 2005). In contrast, negative, disloyal, and unreliable leaders dishearten employees and affect their mental health negatively (Montano et al., 2017; Schyns & Schilling, 2013; Tepper, 2007).

Consequently, employee-oriented, health-promoting leadership (HPL) includes efforts to consider employee needs, create healthy work environments, and implement health-promoting interventions. HPL leaders act as role models, participate in workplace health promotions, and encourage subordinates to actively participate. Despite growing research into effects of leadership behaviors on health, there is a knowledge gap about the antecedents and boundary conditions for HPL behaviors. In particular, to date, researchers have only examined personal factors, such as self-directed HPL (Franke, Felfe, & Pundt, 2014; Wilde, Hinrichs, Bahamondes Pavez, & Schüpbach, 2009), and external organization-directed factors encouraging HPL,

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such as the organizational structures enabling HPL (Wilde et al., 2009) as antecedents, but moderating effects are yet to be explored. Accordingly, the aim of this study is to contribute to closing this research gap by evaluating three antecedents of HPL behaviors, namely: managers' attitude toward HPL (HPL attitude), perceived organizational norms with regard to HPL (perceived HPL norms), and one's own perceived behavioral control to execute HPL behaviors (perceived HPL behavioral control) as well as workload as boundary condition of HPL. We selected these antecedents in line with the theory of planned behavior (TPB; Ajzen, 1991, 2012), which posits that attitudes toward a behavior, subjective norms, and perceived behavioral control are pivotal determinants of individuals' behaviors. TPB serves as the main theoretical framework for our study but is not sufficient for answering the two research questions this study aims to address:

**Research Question 1:** How do the proposed antecedents relate directly to HPL behaviors?

**Research Question 2:** How are these relationships affected by managers' workload?

To comprehensively address these research questions, the authors combine the main propositions of TPB with the conservation of resources theory (COR; Hobfoll, 1989). In the context of health-related behaviors, COR adds a resource perspective to the TPB assumptions and thereby explains why the proposed antecedents directly relate to HPL behaviors. Integrating these two theoretical models, this study seeks to show that in line with Hobfoll (1989) as well as Halbesleben, Neveu, Paustian-Underdahl, and Westman (2014), the assumed antecedents of HPL behaviors can be categorized as resources. Hobfoll (1989) defined resources as "personal characteristics, conditions, or energies that are valued by the individual or that serve as a means for attainment of these [ . . . ] personal characteristics, conditions, or energies" (p. 516). Halbesleben et al. (2014) built on this definition and redefined resources more specifically as "anything perceived by the individual to help attain his or her goals" (p. 1338) to clarify that resources have to be considered valuable by individuals for goal attainment.

Resources can be divided into personal and job resources (Michel, O'Shea, & Hoppe, 2015). On the one hand, HPL attitude is a personal resource which reflects an executive's belief and awareness about the importance of HPL in promoting employees' health, well-being, and performance. On the other hand, perceived HPL norms reflecting a health promoting organizational culture and perceived HPL behavioral control (i.e., offers by the organization to perform HPL) represent job resources. According to COR (Hobfoll, 1989), individuals strive toward retaining or increasing their resources. In the context of HPL, resources such as HPL attitude, perceived HPL norms, and perceived HPL

behavioral control are believed to stimulate applying these resources, for example, by leading in a health-promoting way. This is suggested to lead to positive feedback from employees or simply to the alignment with one's own values, and thus will preserve or increase the leader's resources.

In contrast, job demands have been shown to reduce resources (Hobfoll, 1998), which likely leads to adverse consequences such as reduced HPL behaviors. To our best knowledge, researchers have neglected to study boundary conditions for HPL behaviors such as job demands. Although health-promoting managers have been shown to design health-promoting working conditions (Nielsen, Randall, Yarker, & Brenner, 2008), their impact on designing their own working conditions (e.g., reducing job demands) might be limited as they may be faced with high job demands such as time pressures, workload, and priority demands (Larsson, Stier, Åkerlind, & Sandmark, 2015). According to the six areas of worklife, the only significant job demand predicting employee health (e.g., emotional exhaustion) is workload (Maslach & Leiter, 2008), which has also been shown to be especially important in the context of HPL (Jiménez, Winkler, & Dunkl, 2017). According to COR (Hobfoll, 1989), the positive effect of resources can be limited when job demands are high. Hence, job demands are likely to affect the positive relationship between resources and health-related behaviors as they deplete resources which will consequently not be available for executing the desired behavior. Building on COR (Hobfoll, 1998), we hypothesize that workload is a potential boundary condition shaping HPL behaviors, constraining resources and thus moderating the relationship between the proposed antecedents and HPL behaviors.

In summary, the work reported here makes several contributions to HPL literature. First, by integrating assumptions of TPB (Ajzen, 1991, 2012) and COR (Hobfoll, 1989), we add a resource perspective to TPB enabling us to investigate antecedents of HPL behaviors and their boundary conditions to foster a holistic understanding of these complex relationships. As the core-elements of TPB (i.e., HPL attitude, perceived HPL norms, and perceived HPL behavioral control) can be categorized as resources, COR adds value by explaining how these personal and job resources are directly related to HPL behavior. Following the law of parsimony, knowledge of direct antecedents is essential not only for scientists but also for practitioners designing interventions that aim at behavior changes and not only at altering behavioral intentions. In addition, COR explains why workload acts as a moderator as it drains resources and affects the relationship to HPL behaviors. Insights into moderating effects are especially valuable because they show conditions that may hinder or facilitate HPL behaviors. Second, our sample size of managers is larger than those used in previous studies examining antecedents of HPL behaviors increasing statistical power, thereby

allowing for detection of smaller effects. Last, our findings provide concrete suggestions for organizations to design and implement more effective interventions that foster HPL behaviors.

### *Health-Promoting Leadership*

HPL is a relatively new construct in leadership research (Eriksson, Axelsson, & Axelsson, 2011). As such, its general definition is debatable. However, four key elements of health-promoting leaders are empirically supported: they (1) establish a positive relationship with employees, characterized by individual consideration and appreciation (Stocker, Jacobshagen, Krings, Pfister, & Semmer, 2014), (2) create healthy working conditions (Eriksson et al., 2011), (3) integrate health-related topics into everyday working life and encourage employees to participate in the processes and interventions (Eriksson et al., 2011; Gurt, Schwennen, & Elke, 2011), and (4) are a role model for healthy behaviors (Franke et al., 2014). We build on those empirical findings to define HPL as a considerate employee-oriented leadership style aimed at creating a healthy work environment and supporting health promotion interventions. Health-promoting leaders act as role models by participating actively themselves and encouraging active participation of their followers.

Empirical research shows that positive leadership behaviors are negatively associated with burnout (Harms et al., 2017; Montano et al., 2017; Seltzer & Numerof, 1988; Steffens, Haslam, Kerschreiter, Schuh, & van Dick, 2014), stress (Harms et al., 2017; Schmidt et al., 2014), reduced work-related well-being, and diminished psychological health (Montano et al., 2017; Stocker et al., 2014; Zwingmann et al., 2014), such as depression and anxiety (Kuoppala et al., 2008). Furthermore, positive leadership behavior incrementally contributes to psychological well-being beyond well-established predictors such as social support, stressful work events, and health practices (Gilbreath & Benson, 2004).

The few studies explicitly testing HPL effects on employee well-being have consistently indicated positive impacts: reduced health complaints, increased state of health, decreased employee irritation (Franke et al., 2014), and enhanced overall organizational health climate (Gurt et al., 2011). Moreover, HPL explains positive health outcomes over and above positive leadership styles such as transformational leadership (Vincent, 2012).

***Antecedents of Health-Promoting Leadership Behaviors.*** Because HPL behaviors have such positive effects on employee well-being, identifying its antecedents is of both scientific and economic interest, although the subject area remains mostly unclear (for an exception, see Pangert, 2011). Consequently, employers lack evidence-based guidelines showing how to facilitate HPL behaviors. The TPB, a

theoretical framework that offers a rationale for explaining and predicting changes in human behavior (Ajzen, 1991, 2012), identifies three determinants of behaviors: attitudes toward the behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). First, individuals evaluate the valence and their beliefs to form their attitude about the behavior. Second, they look to the subjective norm: the perceived social pressure to perform or refrain from the behavior according to their normative beliefs about whether valued others will approve or disapprove. Hypothetically, their attitudes and subjective norms will form their behavioral intentions to overcome impediments and pursue the behavior (Ajzen, 1991). Third, in contrast with the intention-forming aspects, perceived behavioral control is based on whether they believe they have opportunities and resources to pursue the behavior. The more favorable the beliefs, the more confidence they will feel about performing the behavior.

TPB has been used in the leadership literature, mostly to predict behavioral leadership intentions to implement health-promotion measures in the workplace (Downey & Sharp, 2007) or to take part in leadership development (Maurer & Palmer, 1999). The few studies seeking to predict effective leadership behavior have mainly focused on directly related antecedents rather than behavioral intentions as mediators (Bommer, Rubin, & Baldwin, 2004; Casper, Fox, Sitzmann, & Landy, 2004; McCarthy & Garavan, 2006; Pangert, 2011). One exception focused on behavioral intention and HPL behaviors (Wilde et al., 2009): In this cross-sectional study, a mediation via the behavioral intention could only be supported for the relationship between HPL attitude and HPL behaviors; there was no mediation found between the antecedents perceived HPL norms or perceived HPL behavioral control, and HPL behaviors.

Although TPB proposes behavioral intention as mediator, we investigate antecedents and their direct relationship to HPL behaviors without underlying transformational processes. As a distinction of the self-reported constructs behavioral intention and actual leadership behavior is questionable, we follow the approach by Pangert (2011), which omits the test of mediation (e.g., behavioral intention). This cross-sectional study supports HPL attitude, perceived HPL norms, HPL competences, and perceived autonomy as direct antecedents of HPL behaviors. Our approach corresponds to empirical evidence implying that HPL attitude, perceived HPL norms, and perceived HPL behavioral control are directly related to HPL behaviors (Pangert, 2011; Wilde et al., 2009).

***Health-Promoting Leadership Attitude.*** The attitudinal component of the TPB is represented by managers' personal attitude about HPL. According to TPB, a favorable attitude of concrete behaviors acts as a prerequisite of the execution of

these specific behaviors (Ajzen, 1991). Hence, managers must evaluate HPL as good and worthwhile before adopting it. In line with COR, HPL attitude is considered a personal resource since a manager's belief that HPL behaviors are positive and beneficial will be helpful in the actual execution of such behaviors. Defined HPL attitude can be seen as a person-centered means of attaining HPL behaviors: leaders who genuinely believe that employee health is key for their employees and the organization's well-being will be more likely to execute HPL behaviors. Hence, we assume that executing HPL behaviors is a (implicitly or explicitly) defined goal of leaders (cf. Halbesleben et al., 2014). Concerning transformational leadership, conceptualizing more general leadership behaviors, research showed the predictive power of leaders' attitudes (Bommer et al., 2004). Empirical evidence with regard to HPL behaviors is scarce but supporting the assumptions as HPL attitude has been found to be the most powerful antecedent of HPL behaviors (Pangert, 2011). In fact, research shows that personal attitude correlates more strongly with HPL behaviors than intentions (Wilde et al., 2009). Therefore, managers' positive HPL attitude should be positively related with HPL behaviors:

**Hypothesis 1:** Positive HPL attitude is positively related to HPL behaviors.

*Perceived Health-Promoting Leadership Norms—Perceived Health-Promoting Culture.* As TPB proposes, organizational culture acts as a normative component that influences managers' evaluations of prevailing values and norms (Schein, 2004). Organizations that have a health-promoting culture value their employees' health and set norms encouraging health-promotion participation (Wilde et al., 2009), constituting a job resource. However, TPB highlights the subjective nature or perceptions of these norms as being crucial regarding the impact on individual behavior (Ajzen, 1991). Thus, perceived organizational culture implies specific norms setting organizational guidelines for leadership behavior. The subjectively perceived health-promoting culture is highly correlated with HPL behaviors (Eriksson et al., 2011; Schein, 2004; Wilde et al., 2009). That is, most organizational members share many normative values of HPL behaviors representing perceived HPL norms (Pangert, 2011). According to COR, job resources, particularly a perceived health-promoting culture, also facilitate other resources to build up such as HPL behaviors. Consequently,

**Hypothesis 2:** Perceived HPL norms are positively related to HPL behaviors.

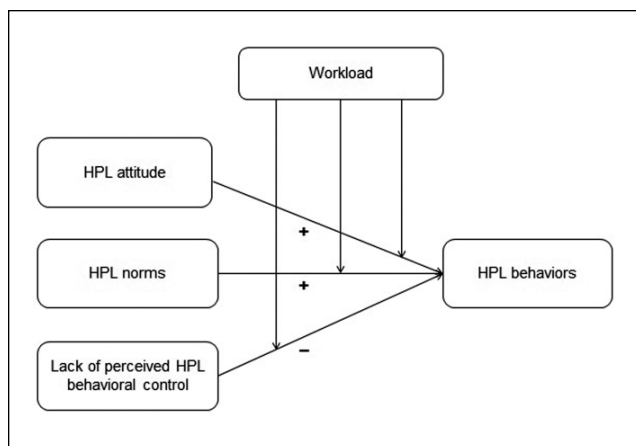
*Perceived Health-Promoting Leadership Behavioral Control—Perceived Organization-Provided Possibilities.* In TPB terms,

perceived behavioral control is based on a belief to have opportunities to pursue a specific behavior (Ajzen, 1991). If leaders hold favorable beliefs of their opportunities to enact HPL behaviors, the more confident they will feel about executing the behavior. Perceived organization-provided possibilities reflect the subjective evaluation of the feasibility of executing HPL behaviors. In this case, active health promotion substantially depends on whether the organization offers appropriate measures and the related perceived HPL behavioral control. Indeed, possibilities for workplace health promotion were shown to be the only antecedent directly influencing HPL behaviors (Wilde et al., 2009). COR adds to this assumption in two ways: First, it stresses that such organization-provided possibilities are means offered by the organization to help leaders act in a health-promoting way; that is, such possibilities represent a job resource. In line with this assumption, empirical findings regarding perceived organizational support—a much studied health-promoting resource—show that it is positively correlated with employee-oriented leadership behaviors (Rhoades & Eisenberger, 2002). Second, COR contributes by predicting that a lack of job resources is associated with limited subsequent resources. That is, managers perceiving that the organization fails to provide possibilities for HPL will inhibit attaining the goal of leading in a health-promoting way, thus lacking relevant resources for accomplishing HPL behaviors. Hence, we hypothesize a negative association between lacking perceived HPL behavioral control and HPL behaviors:

**Hypothesis 3:** A lack of perceived HPL behavioral control is negatively related to HPL behaviors.

*Boundary Condition for Health-Promoting Leadership: Manager's Workload as Moderator.* Managerial work is associated with high job demands such as workload (Larsson et al., 2015) that impede work performance (Gilboa, Shirom, Fried, & Cooper, 2008). For instance, when workdays are fragmented by numerous meetings, managers tend to perceive high workload and report that their job demands exceed available resources (Wickens, 1992). In profit-seeking environments, managers must allocate their resources to profitable areas that will reach managerial goals and attract positive appraisals and bonuses, leaving little room for health-related outcomes (Larsson et al., 2015).

HPL, a leadership style involving personnel management, is assumed to take time resources from time needed to achieve performance goals. Managers under work pressure can be reasonably expected to set other priorities. Indeed, the predominant reason managers reject health promotion projects is their need to focus on more important work tasks (Larsson et al., 2015). Furthermore, they need more resources such as time or administrative support (Locke, Leach, Kitsell, & Griffith, 2011) if they are to



**Figure 1.** Research model.

adopt HPL behaviors. However, workload will consume resources and therefore impact the relationships between resources and HPL.

Consequently, we hypothesize that workload is a boundary condition for HPL behaviors. We build on COR (Hobfoll, 1989) to assume that heavy workload consumes resources. HPL attitude, a personal resource, and job resources such as perceived HPL norms and perceived HPL behavioral control will therefore be affected by workload perceptions. Specifically, overburdened managers might fail to act in line with their personal attitude regarding HPL. Instead, they feel they must prioritize performance goals. Also, they might perceive that organizational goals are at odds with a perceived health-promoting organizational culture. In addition, they perceive that they lack resources and time to take part in or even read about workplace health promotion. Therefore, we hypothesize:

**Hypothesis 4:** Workload weakens the positive relationships between (a) HPL attitude, and (b) perceived HPL norms, (c) but exacerbates the relationship between lack of perceived HPL behavioral control and HPL behaviors.

Figure 1 depicts the integrated research model tested in this study.

## Method

### Procedure and Participants

In the context of a project aimed at improving workplace health promotion, we conducted a survey in a German automobile manufacturing plant in 2012. This project was initiated by the plant to investigate the determinants of employee health and motivation in order to improve their occupational health promotion. At the start of the project, the plant

manager sent an email inviting approximately 350 managers to self-rate their leadership behavior either online or via a paper-and-pencil questionnaire.

Participating were 315 managers; 13.7% managed 1 to 5 employees; 14.9% managed 6 to 10; 25.1% managed 11 to 20; 46.3% managed more than 20. Men represented 94.3% ( $N = 297$ ) of the sample; 17.4% were 35 years old or younger, 51.1% were 36 to 50 years old; 31.5% were older than 51 years. Most respondents had worked for the company for more than 25 years (42.9%); 27.6% had 16- to 25-year tenures; 25.7% had 6- to 15-year tenures; 3.8% had tenures of less than 5 years. Furthermore, 47.3% rotated morning and evening shifts; 33.3% worked day shift; 19.4% worked permanent night shift.

### Measures

To gather the data, we used previously validated scales, either originally German or translated into German using back-translation procedures (Brislin, 1970). Some of the original scales had to be shortened as the works council restricted the number of items of the questionnaire to reduce the workload of participants taking part in this study. To ensure that shortening the scales did not affect the scale reliability negatively, we conducted a pilot study with 50 employees of the company and only used the shortened scales when showing satisfactory quality criteria. Respondents indicated their agreement with the statements on 5-point Likert-type scales (1 = *strongly disagree* and 5 = *strongly agree*).

**HPL Behaviors.** Managers self-evaluated their HPL behaviors on four items adopted from Wilde et al. (2009) such as “In my work as a manager, I address the topic of health regularly in meetings with individual employees or in team meetings.” Cronbach’s alpha coefficient was .89.

**HPL Attitude.** Four items adopted from Wilde et al. (2009) were used to measure whether managers acknowledged the importance of employees’ health and their responsibility for encouraging it (e.g., “As a manager, I am responsible for the health of my employees”). Cronbach’s alpha indicated a reliability of  $\alpha = .80$ .

**Perceived HPL Norms.** To measure the presence of a culture supporting managers in health promotion, we adopted four items ( $\alpha = .78$ ) from Wilde et al. (2009). For example, “Workplace health promotion is an important element of [organization’s] corporate philosophy.”

**Perceived HPL Behavioral Control.** We used another Wilde et al. (2009) scale to measure managers’ perceptions of whether the organization provides possibilities for HPL. Three items were applied ( $\alpha = .92$ ), with a higher

**Table 1.** Means, Standard Deviations, Intercorrelations, and Reliabilities of the Study Variables.

Variable	M	SD	1	2	3	4	5	6	7	8
1. HPL behaviors	3.85	0.81	(.89)							
2. HPL attitude	4.12	0.74	.64***	(.80)						
3. HPL norms	3.62	0.73	.46***	.36***	(.78)					
4. HPL behavioral control	2.55	1.01	-.43***	-.34***	-.45***	(.92)				
5. Workload	2.89	0.94	-.08	.05	-.22***	.24***	(.86)			
6. Span of control	4.04	1.08	.27***	.20***	.08	-.16**	-.07			
7. Tenure	4.09	0.93	.25***	.27***	.15**	-.14*	.13*	.18**		
8. Job autonomy	3.50	0.82	.30***	.36***	.26***	-.29***	-.09	.11	.26***	(.85)

Note.  $N = 315$ . Internal consistency reliabilities (Cronbach's  $\alpha$ ) are given in parentheses on the diagonal.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

score indicating a lack of possibilities. For example: "At [organization], it is difficult to manage in ways that benefit employees' health."

**Workload.** The feeling of being overwhelmed by work was measured using four items adopted from Luong and Rogelberg (2005), yielding a Cronbach's alpha coefficient of .86. For example, "I feel busy or rushed."

**Control Variable.** Managers' span of control was a control, assumed to be a confounding variable because, theoretically, all managers have the same time resources but are responsible for different numbers of employees. Managers who have a greater span of control might find it more difficult to be quality leaders (Green, Anderson, & Shivers, 1996; Schriesheim, Castro, & Yammarino, 2000). Furthermore, managers' tenure within the organization was controlled for because we assume that tenure might affect how well managers know about the culture and about organization-provided opportunities. That is, we believe that managers gain valuable expertise and experience as their tenure increases affecting their leadership effectiveness (Wertheim, Neill, & Clements, 2016). Managers' job autonomy was also controlled for as we assume that managers with a higher autonomy may have more possibilities to act in a health-promoting way than managers with less autonomy. Moreover, autonomy has been reported to highly correlate with HPL behaviors (Pangert, 2011). Job autonomy was measured with five items by Stegmann et al. (2010); Cronbach's alpha coefficient was .85.

### Data Analysis

First, the hypotheses in relation to the antecedents of HPL behaviors (i.e., Hypotheses 1-3) were tested applying hierarchical linear regression analysis. Control variables were entered in Model 1, focal predictor variables in Model 2.

Subsequently to the regression analysis, the PROCESS syntax v3.0 provided by Hayes (2018) was applied to test

the proposed moderating effects of workload (Hypotheses 4a-c). All predictor variables (including the aforementioned control variables) and interaction terms were entered in the same model. As the main focus of this analysis was the interpretation of the interaction term, no mean-centering was applied in line with Hayes (2018). To probe significant interactions, we used the Johnson–Neyman technique as advised by Hayes (2018). Other than the commonly used pick-a-point approach in which certain values of the moderator have to be selected to evaluate the conditional effect of the predictor variable on the outcome (i.e., mean, and plus and minus one standard deviation from the mean), the Johnson–Neyman technique enables to evaluate the conditional effect at each level of the moderator and provides regions of significance rather than evaluating significance of arbitrarily selected values of the moderator (Bauer & Curran, 2005).

## Results

### Descriptive Statistics and Construct Validity

Table 1 depicts the means, standard deviations, intercorrelations, and internal consistencies of all study variables. Regarding the proposed associations, significant correlations were found between HPL behaviors and the assumed antecedents, as expected. Managers' workload was, however, unrelated to HPL behaviors. Span of control was significantly related to all study variables, except for perceived HPL norms and workload, whereas job autonomy was significantly related to all study variables, except for workload and span of control. Finally, tenure was significantly related to all study variables.

A confirmatory factor analysis of the five main study variables provided support for the construct validity of the proposed variables: The proposed measurement model indicated a good fit to the empirical data,  $\chi^2(142) = 212.30$ ,  $p < .001$ ,  $\chi^2/df = 1.50$ , comparative fit index (CFI) = .971, Tucker–Lewis index (TLI) = .965, Bayesian information

**Table 2.** Hierarchical Regression Analysis Predicting HPL Behaviors.

Variable	Model 1			Model 2		
	<i>b</i>	SE	$\beta$	<i>b</i>	SE	$\beta$
Span of control	0.13**	0.04	.17	0.08**	0.03	.11
Tenure	0.14**	0.05	.16	0.06	0.04	.07
Job autonomy	0.27**	0.07	.27	0.01	0.06	.01
HPL attitude				0.59***	0.07	.54
HPL norms				0.20**	0.06	.18
HPL behavioral control				-0.10*	0.05	-.12
<i>F</i>	21.07			58.17		
<i>R</i> <sup>2</sup>	.17			.53		
$\Delta R^2$				.36***		

Note. *N* = 315.

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

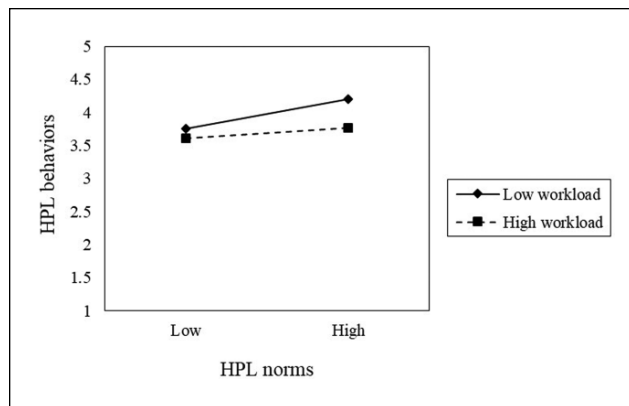
criterion (BIC) = 14084.32, root mean square error of approximation (RMSEA) = .040). Factor loading examination showed that all loadings were significant and directed as proposed.

### Hypothesis Testing

Hypotheses 1, 2, and 3 were tested with hierarchical linear regression analysis. The results are displayed in Table 2. In Model 1, with the control variables only, HPL behaviors were positively predicted by span of control ( $b = 0.13$ ,  $p = .001$ ), tenure ( $b = 0.14$ ,  $p = .008$ ), and job autonomy ( $b = 0.27$ ,  $p = .001$ ). Including the focal predictor variables in Model 2 added significantly to the predictive power of the model ( $\Delta R^2 = .36$ ,  $p < .001$ ), overall explaining 53.1% of variance. It was found that all three proposed antecedents were significantly related to HPL behaviors. More precisely, HPL behaviors were positively predicted by both HPL attitude ( $b = 0.59$ ,  $p < .001$ ) and perceived HPL norms ( $b = 0.20$ ,  $p = .002$ ), whereas negatively predicted by lack of perceived HPL behavioral control ( $b = -0.10$ ,  $p = .04$ ). Consequently, Hypotheses 1, 2, and 3 were supported.

To test Hypothesis 4, a moderation analysis was conducted applying Hayes (2018) PROCESS syntax. The only significant interaction was found between perceived HPL norms and workload ( $b = -0.10$ ,  $p = .04$ ), adding 0.63% of explained variance, thus providing support for Hypothesis 4b. There were no other significant interactions, neither between HPL attitude and HPL behaviors ( $b = 0.03$ ,  $\Delta R^2 = .0006$ ,  $p = .52$ ), nor between lack of perceived HPL behavioral control and HPL behaviors ( $b = 0.01$ ,  $\Delta R^2 = .0002$ ,  $p = .74$ ). Hypotheses 4a and 4c, accordingly, had to be rejected.

Probing the interaction between perceived HPL norms and workload with the Johnson–Neyman technique, it was



**Figure 2.** Interaction effect of health-promoting leadership (HPL) norms and workload on HPL behaviors.

found that the conditional effect of perceived HPL norms on HPL behaviors was significant only if workload was less than 3.71 (on a scale from 1 to 5;  $M = 2.89$ ,  $SD = 0.94$ ). That means that high workload scores greater than 3.71 negated the positive relationship between perceived HPL norms and HPL behaviors. In other words, high workload blocks the positive effect of perceived HPL norms regarding HPL behaviors. The interaction effect is illustrated in Figure 2.

### Discussion

One objective for this study was to investigate the antecedents of HPL behaviors. By combining TPB and COR assumptions, we tested personal (i.e., HPL attitude) as well as job resources (i.e., perceived HPL norms, perceived HPL behavioral control) as antecedents of HPL behaviors. We found that HPL attitude and perceived HPL norms were significantly and positively related with HPL behaviors, while a lack of perceived HPL behavioral control had a significant negative relation with HPL behaviors. Our findings support prior studies showing that TPB and the three chosen antecedents predict HPL behaviors (Pangert, 2011; Wilde et al., 2009). However, our study extends previous research by adding COR as a theoretical explanation of how the antecedents directly relate to HPL behaviors. This resource perspective is especially relevant in the context of health-related outcomes: First, it offers an explanation by stating that resources help to attain set goals, and second, COR assumptions allow for testing more complex relationships which we did by shedding light on moderating effects.

The second objective was to examine workload as a moderator. We found workload to be a significant boundary condition for the relation between perceived HPL norms and HPL behaviors. As hypothesized, workload affects the relationship between perceived HPL norms and HPL behaviors, in particular resulting in a weakened to

nonsignificant relationship of perceived HPL norms and HPL behaviors under high workload. Hence, workload seems to make social norms salient for the managers as they might experience cognitive dissonance when they perceive their organization to call for implementing HPL culture and at the same time overwhelms them with high workload. According to TPB, salience of beliefs is one important requirement for affecting the behavior (Ajzen, 1991). We found no indication that workload moderates the relationship between HPL attitude or lack of perceived HPL behavioral control, and HPL behaviors. With regard to HPL attitude, we assume that workload might not affect the relationship between HPL attitude and HPL behaviors since HPL attitude is a personal belief which may not be strongly affected by situational influences. We assume that the evaluation of perceived HPL behavioral control rather relates to an objective fact (i.e., availability of organization-provided possibilities), which depends on the knowledge and/or accessibility rather than a perception, which varies according to the perceiver's individual resources. That is, that the evaluation of the availability of organization-provided possibilities does probably not depend strongly on the leaders' situational workload.

Our findings make several contributions to research. By combining the core tenets of TPB and COR, we were able to extend previous research and to show that HPL behaviors directly and significantly depend on personal resources as well as job resources. Although TPB allows for the prediction of HPL behaviors on its own, the resource perspective of COR is an addition that helps to gain a better understanding of how antecedents are related in the bigger picture. Investigating workload as a job demand, our second research question addressed boundary conditions of the antecedents and HPL behaviors. We extend current knowledge by showing that workload weakens the positive relationship between perceived HPL norms and HPL behaviors. Taken together, both personal and job resources are important; in addition to understand HPL behaviors, job demands such as workload need to be considered.

### *Limitations and Implications for Future Research*

Despite our contributions, our study has some limitations. First, our cross-sectional design prevented testing relationship causality. Future research should use longitudinal or quasi-experimental study designs to clarify causal directions. Second, our data are based on self-report measures. We cannot rule out the possibility of common-method variance although we aimed to reduce it by explicitly emphasizing that responses would be anonymous and by highlighting that there are no right or wrong answers (Podsakoff, MacKenzie, & Podsakoff, 2012). In addition, self-reports regarding HPL behaviors might have been biased. Social desirability or missing feedback from

their employees, manager, or peers may have caused participants to misrepresent their own actual behavior. Therefore, future studies should integrate multiple data sources and match employee/manager evaluations to corroborate our findings (Podsakoff & Organ, 1986). Third, participation was voluntary, so a self-selection bias may have occurred: managers who declined to participate might have had greater workload than those who participated. However, our sample indicated workload ranges from 1 to 5, implying that some participating managers had high workload, reducing the likelihood of biased results. Fourth, our findings might have limited generalizability to other industries because male managers dominated the sample by more than 90%, and the sample came from a single German automotive company. Although the sample is representative for the automotive industry, the study should be replicated in another context to contribute to the ongoing debate about gender effects in leadership research (Eagly & Johnson, 1990; Paustian-Underdahl, Slattery Walker, & Woehr, 2014). Our unbalanced sample prevented controlling for gender differences when testing the hypotheses. However, we found no significant gender differences in reported HPL behaviors ( $M_f = 3.90$ ,  $SD = 0.86$ ;  $M_m = 3.85$ ,  $SD = 0.81$ ;  $U = .467$ ,  $p < .05$ ). Nevertheless, future studies with more balanced samples should control for gender and further potential confounds such as management experience or hierarchical position. Furthermore, our study's generalizability is limited as we tested our hypotheses in one organization only. This relates especially to our results regarding perceived HPL norms, namely health-promoting culture. To better understand if the organizational culture is perceived as binding for the actual behavior future studies are needed. We recommend researchers to investigate different organizations to be able to also assess effects at organizational level (e.g., by applying a multilevel design) contributing to a deeper understanding of antecedents of organizational behavior. To further shed light on relationships at the organizational level, it would be interesting to investigate if job resources, such as perceived HPL norms and perceived HPL behavioral control, moderate the relationship between personal resources, such as HPL attitude and HPL behaviors. Fifth, our measures to assess the antecedents and outcome came from a German publication that tested a similar model, though with a smaller sample (Wilde et al., 2009). Considering that previous studies and our study had good-to-excellent values for internal consistency, we believe that the chosen measures captured the constructs well. However, as HPL is relatively new in leadership research, we call for internationally validated measures. Additionally, we recommend testing alternative models illuminating the effects of workload which might also affect HPL behaviors and its antecedents directly. Finally, the combination of TPB and COR enabled us to better



understand the interplay of antecedents and moderating effects on HPL. As only one of the predicted interaction effects was found to be significant, we believe it is worthwhile to study further job demands and resources. However, as a resource perspective is closely linked to a salutogenetic understanding of health, we believe this adds to a more holistic view on the prediction of health-related behaviors. To further leverage this approach, we recommend researchers to apply a resource perspective more rigorously in the study of employee health in the context occupational health promotion.

### *Practical Implications*

Our study offers practical organizational implications. Based on the reported results we recommend six specific interventions to increase HPL behaviors:

**Leadership Training.** We provide insights into antecedents of HPL behaviors that should be used in leadership training. That is, we recommend organizations to offer leadership training including a module on HPL. Hence, when practitioners develop trainings or other interventions to enhance HPL behaviors, they should strongly focus on building positive managerial attitudes regarding employee health and well-being as HPL attitudes directly relate to HPL behaviors. Trainers should make managers aware that they can greatly influence employee well-being by directly promoting health programs or by being role models. An HPL training module should ideally include a part reflecting the perceived health-promoting culture as this was also shown to be related to HPL behaviors. By discussing the current cultural perceptions of their everyday working life, a transfer of learned content is facilitated. Additionally, an informational part containing the different offers for health promotion by the organization could help to promote HPL behaviors as well as our results reveal. For example, inviting staff from social counselling or a health promotion department (depending on organizational structures) to present the offers should help to give the discussed content a “face” and to build networks within the organization which will probably decrease barriers of making use of or recommending the offers.

**Coaching.** To increase awareness and shape a positive attitude regarding HPL, promoting and exercising HPL behaviors should also be a central component of manager-focused interventions. Organizations could offer individual coaching sessions or conduct organization-wide team events dedicated to this topic. By offering different interventions, a mindset change can be triggered, which should positively affect managers’ HPL attitudes.

**Promoting Organizational Health-Promoting Culture.** From an organizational development perspective, it is crucial to

promote a health-promoting culture beyond mentioned leadership training given that the number of participants of such trainings might be limited and organizational members at the employee-level will not be able to attend. To make an organizational culture tangible, it is important to communicate associated norms and values by giving concrete examples. Managers willing to act as testimonials who show how they behave in a health-promoting way or demonstrate available possibilities for occupational health promotion will foster a perception of the targeted health-promoting culture. Consequently, organizational development should include HPL as an integral part of cultural development initiatives by highlighting personal and job resources.

**Availability and Communication.** The finding that the lack of perceived organization-provided possibilities impedes HPL behaviors suggests that organizations would benefit from establishing accessible workplace health management programs as well as an improved information management system regarding the existing offers, given that managers seem to differ regarding their access and/or knowledge of possibilities. A lack of perceived organization-provided possibilities might also be the result of missing offers or programs that do not match the managers’ actual needs. In such a case, cross-functional collaboration requires improvement: the departments responsible for health promotion, communications, and organizational development should work closely together to make sure that (1) the offers match existing needs, (2) are communicated in a transparent and “easy to use” way, and (c) they are in line with organizational goals and culture.

**Personnel Selection.** As we identified HPL attitude as a significant antecedent of HPL behaviors, organizations aiming at increasing HPL are advised to select candidates who indicate positive personal attitudes toward health-promotion programs. To do so in an effective way requires experts to determine competencies and behaviors that constitute HPL. In a next step, exercises or questions need to be defined according to the competencies that reflect everyday working situations, which are useful to differentiate good or weak HPL behaviors. Furthermore, the developed materials should be validated using experienced recruiters and managers to assess their quality criteria. After validating the materials, the exercises or questions can be used in an assessment center or structured interview led by trained persons to evaluate candidates during the recruiting process.

**Onboarding.** Organizations should use onboarding processes and welcome receptions to assure that new employees perceive a health-promoting culture and know how they can participate in health-promotion programs.

## Conclusion

This study is one of the first to discuss antecedents of HPL as well as a boundary condition for the tested antecedents, namely managers' workload. Combining the TPB (Ajzen, 1991, 2012) and COR (Hobfoll, 1989), we proposed that HPL is predicted by personal resources (i.e., HPL attitude) as well as job resources (i.e., perceived HPL norms and perceived HPL behavioral control). The predictive power of these antecedents was furthermore proposed to be weakened by job demands, particularly high workload. We tested our hypotheses with a sample of managers in a German automobile manufacturing plant. We identified positive relationships between managers' positive attitude toward their employees' health, a perceived organizational culture supporting health promotion and HPL behaviors. Additionally, HPL behaviors were negatively predicted by a lack of perceived possibilities for HPL. Workload weakened the relationship between perceived HPL norms and HPL behaviors.

Our findings are important for organizations aiming to implement HPL, emphasizing the importance of bringing managers on board with HPL by creating a positive attitude toward their employees' health. Second, organizations need to provide possibilities to lead in a health-promoting manner and create a supportive culture for HPL; the latter should not be negated by putting high workload on managers. Although our findings should be replicated with more rigorous research designs (i.e., multilevel, longitudinal, and quasi-experimental designs), this study provides new valuable insights into HPL from a resource perspective, indicating the importance to consider both resources and demands in the context of these leadership behaviors.

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Alexandra Michel is also affiliated to Heidelberg University, Heidelberg, Germany.

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