

Transformational and Transactional Leadership and Followers' Chronic Stress

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Abstract

This study sought to provide information about the relationship between supervisors' leadership styles and subordinates' experience of chronic stress. Drawing on a sample of employees ($N = 244$) working in a German government agency, we tested relationships between transformational, transactional and nonleadership styles and facets of chronic stress (i.e., excessive work and social demands, dissatisfaction with work and social recognition, performance pressure, and social conflicts), while controlling for subordinates' demographics and hierarchical level. Findings: It was found that one of the transformational leadership scales (i.e., individualized consideration) was negatively related to dissatisfaction. In contrast, the transactional subscale of management-by-exception passive was positively related to four indicators of chronic stress, while controlling for all other transformational and transactional leadership styles. Future research should include objective indicators of stress. Managers in governmental organizations should avoid utilizing the transactional leadership style of management-by-exception passive in order to foster employees' health. The results allow for a more thorough and detailed understanding of leadership behavior, stress prevention, and occupational health.

Introduction

Over the last decades, the relationship between leaders' behavior and subordinates' perceived stress has gained increasing attention from the scientific community (Bass, 1990; Gilbreath & Benson, 2004). The kind of leadership style influences how subordinates cope with stress (Ryska, 2002). The leadership domain has recently focused on the so-called "new leadership paradigm" (Yukl, 2002) such as transformational leadership (Alban-Metcalf & Alimo-Metcalf, 2007; Bass, 1999; Harvey, Royal & Stout, 2003; Trautmann, Maher & Motley, 2007). Transformational leaders emphasize higher motive development, and arouse followers' motivation and positive emotions by means of creating and representing an inspiring vision of the future (Bass, 1985). In contrast, transactional leadership explains the relationship between leader and follower as an exchange system of well-defined transactions. In turn, the leader rewards or disciplines the follower with regard to his/her performance. While several studies have focused on the relationship between these leadership styles and performance (Dumdum, Lowe & Avolio, 2002; Judge & Piccolo, 2004) the relationship between the leaders' behavior and subordinates' work related stress has mainly been neglected.

The present study addresses this gap and explores the relationships between transformational and transactional leadership styles and employees' experience of stress. Drawing on organizational data from an empirical study, we describe how different leadership styles relate to different aspects of chronic stress.

The Concepts of Transformational and Transactional Leadership and Chronic Stress

As a result of empirical findings, the theory of transformational and transactional leadership has been expanded over the past two decades (Bass, 1998; Bass & Avolio, 1994). In its current form, the "full range leadership theory" represents nine factors that consist of five transformational leadership factors, three transactional leadership factors, and one nonleadership or laissez-faire leadership factor (Antonakis, Avolio & Sivasubramaniam, 2003).

The first of the transformational factors is inspirational motivation. Central to this factor of transformational leadership is the articulation and representation of a vision. If followers have a positive attitude concerning the future as a result of leadership behavior, they will be motivated to perform well. Next, idealized influence (attributed) relies on the attribution of charisma to the leader. If a leader is thought to display certain positive attributes (e. g. perceived power, focus on higher-order ideals and values), his/her followers will develop an emotional tie to their leader. This relationship then consists of trust and confidence. Idealized influence (behavior) emphasizes a collective sense of mission and values, as well as acting upon these values. As another factor of transformational leadership, intellectual stimulation includes leader behaviors such as challenging the assumptions of followers' beliefs as well as analyzing subordinates' problems and possible solutions. Individualized consideration contains the consideration of individual needs and the development of followers' individual strengths. As a transactional leadership factor, contingent reward entitles a task-oriented leadership behavior, that provides followers with rewards (materialistic or psychological) depending on the fulfillment of certain tasks. In active management-by-exception, the leader watches and searches actively for deviations from rules and standards in order to avoid divergent behavior. If necessary, corrective actions are taken. In contrast to active supervisory

behavior, management-by-exception passive describes a leader who intervenes only after errors have been detected or after standards have been violated. An absolutely passive leadership style is laissez-faire, which is basically defined as the absence of leadership. Thus, laissez-faire is a contrast to the active leadership styles of transformational and transactional leadership.

As the present study focused on the relationship between leadership and followers' chronic stress, it is also important to define what is meant by the concept of chronic stress. In general, it is often assumed that stress results from person-environment interactions as a consequence of an imbalance between demands/stressors and personal resources, where demands/stressors are appraised as threats or harm/loss and the individual does not feel capable to cope (Lazarus & Folkman, 1984). In contrast to acute stress, chronic stress is a result of long-lasting demands or of recurrent stress episodes. Chronic stress is associated with daily routines and non-changing environments; often, a lack of need satisfaction is an important characteristic of chronic stress ("non-events"), and affected persons tend to perceive no need for specific coping efforts (Schulz, Schlotz, & Becker, 2004). For the purpose of the present study, chronic stress is defined as excessive demands, a lack of need satisfaction, performance pressure, or social conflicts.

The Effect of Transformational and Transactional Leadership on Followers' Chronic Stress

The positive impact of transformational leadership on organizational outcomes such as employees' satisfaction, subjective and objective performance indicators is well established (Fuller, Patterson, Hester & Stringer, 1996; Judge & Piccolo, 2004). Besides these positive impacts possible negative costs or downside risks need to be considered (Yukl, 1999). While transformational leaders motivate followers to "performance beyond expectations" (Bass, 1985), little is known whether this process implies increased stress, for example. It is reasonable to assume that increased demands by the leader will result in higher stress (Bass, 1990). Moreover, followers identify with their transformational leader. Over time, followers might spend more time with work-related behaviors than with recreational behaviors such as relaxation. Over time, this process might yield enhanced levels of stress.

To our knowledge, only three studies have explored the relationship between transformational leadership and perceived stress or related constructs. Seltzer, Numeroff and Bass (1989) found that transformational leadership was negatively related to both burnout symptoms and stress symptoms (e.g. headaches, fatigue, irritability), whereas management-by-exception combined (i.e., active and passive) was positively related to burnout and stress. Sosik and Godshalk (2000) reported negative associations between transformational leadership and job-related stress, while contingent reward showed no associations. Stordeur, D'Hoore and Vandenberghe (2001) found positive associations of active management-by-exception with emotional exhaustion, a facet of burnout.

Study Goals and Hypotheses

While these studies explored relationships between transformational leadership and stress symptoms (Seltzer et al., 1989), job-related stress (Sosik and Godshalk, 2000), and emotional exhaustion (Stordeur et al., 2001), nothing is known about the association of transformational and transactional leadership, respectively, with chronic stress. Leadership style can be expected to have an influence on the followers' experience of chronic stress because leader-

led relationships usually last a long time, and because of the potential influence of leadership behavior on stressors and coping resources of the followers. Because chronic stress can affect physiological processes and metabolic activity (e.g. Nater, Rohleder, Schlotz, Ehlert & Kirschbaum, 2007; Schlotz, Hellhammer, Schulz & Stone, 2004) leadership behavior may not only influence productivity but may also have an important impact on occupational health.

Transformational leadership and chronic stress. Considering the results of the studies by Seltzer et al. (1989) and Sosik and Godshalk (2000), we expected a negative association of transformational leadership with chronic stress. Transformational leadership behaviors are highly active and influence subordinates in a positive way (Bass, 1985). The focus on long-term vision, the communication of a sense of purpose and value-based leadership of transformational leaders helps subordinates to reframe stress-related events, i.e. to understand the underlying reasons for stress-related incidents.

More specifically, we expect that leaders, who treat their subordinates with individual consideration, will assist their followers individually concerning work-related problems. Thus, these leaders will help to prevent their subordinates from chronic stress, in particular from a lack of satisfaction with the social and work environments (H1a). Second, the leader's idealized influence (both attributed, H1b, and behavior, H1c) encourages subordinates to high levels of performance because they focus on transcendent, higher-order goals. Third, inspirational motivation communicates a sense of purpose and consequently reframes stressful experiences that subordinates face (H1d). Finally, intellectual stimulation appeals to subordinates' own ideas and ways of doing things. In contrast to Seltzer et al. (1989), we argue that intellectually stimulated subordinates feel internally motivated and empowered. (Alimo-Metcalfe, 1995; Avolio, Zhu, Koh & Bhatia, 2004) Therefore, they should experience less chronic stress due to increased resources to cope with demands (H1e).

Transactional leadership and chronic stress. In contrast to transformational leadership, transactional leadership focuses on short-term, day-to-day leadership (Podsakoff, MacKenzie, Moorman & Fetter, 1990) and has been considered as a more passive form of leadership (Bass, 1985). The present study supposes specific hypotheses for the relationship between transactional leadership styles and chronic stress. Contingent reward is the most active transactional leadership style (Avolio, 2002). We propose that this leadership style helps followers to internalize the expectations of their leader. Thus, contingent reward reduces uncertainty in a complex and potentially stressful work environment. Therefore, contingent reward should be negatively associated with chronic stress. This hypothesis (H2a) is in line with earlier research (Seltzer et al., 1989). Both forms of management-by-exception (active, H2b, and passive, H2c) are more passive than contingent reward. These leadership styles put the subordinate under pressure in order to make him/her follow the desired standards, but they do not support individual resources. As a result, these forms of leadership are hypothesized to show positive associations with chronic stress. Leaders who rely on management-by-exception merely control their subordinates and do not display any behaviors that might help to alleviate stress. Finally, since the laissez-faire leadership style consists of an omission of leadership behavior, we hypothesize that it is negatively associated with performance pressure, but may lead to dissatisfaction due to a lack of recognition and meaningfulness (H2d).

Control variables. Contextual influences are to be taken into consideration when examining the relationship between leadership styles and organizational outcomes (Bass, 1985; Mohanty & Mishra, 1998; Waldman, Bass & Yammarino, 1990). With regard to transformational leadership, Antonakis, Avolio and Sivasubramaniam (2003) demonstrated that contextual

determinants (such as hierarchical level and gender) influence the relationship between leadership styles and outcome criteria (e.g., performance). These results had been replicated by other scholars as well (Callahan, Hasler & Tolson, 2005; Oshagbemi & Gill, 2004). Empirical research also showed that occupational stress was influenced by job incumbents' hierarchical level (Mohanty & Mishra, 1998). As a consequence, we considered respondents' hierarchical level, age and gender as important contextual conditions in the present study.

Methods

Sample Description

The data from this study were drawn from a large government agency in Germany. Questionnaire data assessing leadership style and stress were distributed to a random sample of 300 followers. A total of $N = 244$ surveys were returned; this represents a response rate of 81.3 percent (mean age: 40 years, $SD = 10$). The sample consisted of 132 female (54.2%) and 112 male (45.8%) leaders working for branch leaders (28%) or first-level supervisors (72%). Each participant was asked to comment on his/her respective leader. Questionnaires were personally administered to the followers. Full anonymity was ensured. The results presented hereafter are part of a larger project exploring the relationships between leadership styles and different individual and organizational outcomes.

Questionnaires

Leadership style. Nine factors of leadership style were measured by the nine subscales of the MLQ-5X, which is the standard instrument in the field of transformational and transactional leadership research (Bass & Avolio, 2000; Rowold & Heinitz, in press). While the above described nine-factor model is the most recent one (Antonakis et al., 2003), other researchers have found support for deviating models (Tejeda, Scandura & Pillai, 2001). Thus, the MLQ has been criticized because of insufficient factorial validity (Den Hartog & Van Muijen, 1997). In addition to the nine-factor model of leadership, Bass and Avolio reported a six-factor model that is now well established (Bass, 1985; Bass & Avolio, 2000). It combines the first three factors of transformational leadership (inspirational motivation, idealized influence attributed and behavior) into a single scale labeled charisma. Further on, it combines the scales of management-by-exception passive and laissez-faire into a single scale named passive-avoidant. These two models are most commonly used in order to describe a full range of transformational, transactional and non-leadership.

In the present study, transformational and transactional leadership were assessed by a German translation of the MLQ-5X (Bass & Avolio, 2000; cf. Note 1). In contrast to earlier German translations of the MLQ-5X (Felfe & Goihl, 2002; Geyer & Steyrer, 1998), this translation proved to measure the “full range” of leadership styles – the nine dimensions of transformational and transactional leadership described above – with sound psychometric properties and, thus, yields in a valid, reliable, and detailed description of the leaders' behavior in different organizational contexts (Rowold, 2005). However, because the factorial validity of the MLQ-5X has been under consideration by several researchers (Avolio, Bass & Jung, 1999; Den Hartog & Van Muijen, 1997) a confirmatory factor analysis (CFA) of the nine MLQ-5X Scales was performed. For the sample described above, the CFA yielded a $\chi^2_{558} = 1065$ ($p = .000$). The comparison to an absolute null model with $\chi^2_{666} = 26501$ ($p = .000$) yielded a Tucker-Lewis index (TLI) of .977, a comparative fit index (CFI) of .980, and a RMSEA of .058. In contrast, a CFA of the six-factor model with a $\chi^2_{579} = 1175$ ($p = .000$) yielded a Tucker-Lewis index (TLI) of .973, a comparative fit index (CFI) of .977, and a

RMSEA of .062. The implementation of the χ^2 -Difference test yielded a $\Delta\chi^2_7 = 110$ ($p < .000$). Thus, the empirical data showed a significant better fit to the nine-factor model, replicating recent large scale analysis (Antonakis et al., 2003; Rowold, 2005). For each of the MLQ items, participants rated the frequency of leaders' behavior on a 5-point rating scale (1 = never, 5 = always).

Chronic stress was assessed by the German version of the Short Trier Inventory for Chronic Stress (STICS; Schlotz & Schulz, 2008). This brief questionnaire was derived from the second version of a series of questionnaires (Schulz & Schlotz, 1999; Schulz, Schlotz & Becker, 2004). The STICS is a 24-item self-report questionnaire measuring chronic stress in four domains (see Table 1 for coefficients of internal consistency): (1) The scale excessive demands comprises items that measure quantitative work overload, social overload (i.e. taking too much responsibility and care for other people), and excessive demands at work (experience of failure; unsuccessful effort); (2) The scale dissatisfaction contains items measuring experiences of work discontent (e.g. as a result of a lack of meaningful work to do) and lack of social recognition (being rejected, criticized, depreciated, or ignored despite best effort); (3) The scale performance pressure measures various facets of performance-related pressure in social and work situations (pressure to be successful, perform well, make no mistakes, meet expectations); (4) The scale social conflicts scale assesses interpersonal problems like quarrels or social tension. For each item, the frequency of a stressful experiences in the last year had to be indicated on a five point rating scale, ranging from 0 (never) to 4 (very often).

Testing for Common-Method Effects. In the present study, both leadership styles and indicators of chronic stress were measured by questionnaire and at the same point-in-time. Thus, it might be questioned whether the potential relationships between these two classes of construct might be inflated by common-method bias. The methodological literature (Podsakoff, MacKenzie, Lee & Podsakoff, 2003) recommends testing potential biases by means of structural equation modelling. In the case of the present study, it was tested whether a 2-Factor-model, where the leadership scales loaded on one leadership factor and the stress scales loaded on a stress factor, had to be rejected in favour of a 1-Factor-Model where all scales loaded on a single factor, suggesting a considerable single-method bias. A confirmatory factor analyses approach (covariance matrix as input) was applied. The results demonstrated that the 2-Factor-Model ($\chi^2_{27} = 120.55$; AGFI = .965; SRMR = .074) fitted the data significantly better ($\Delta\chi^2 = 63.91$; $\Delta df = 1$; $p < .0001$) than a 1-Factor model ($\chi^2_{26} = 184.46$; AGFI = .947; SRMR = .091), suggesting sufficiently construct-specific variance of the instruments. Thus, we might have some confidence in the notion that common-method bias was not too strong an issue for the present study.

Results

Descriptive Statistics and Scale Intercorrelations

Descriptive statistics of the variables (MLQ-5X and STICS) are presented in Table 1. As can be seen, the reliabilities of both questionnaires are good. The sample means of the STICS are in the range of means from a larger sample (Schlotz & Schulz, 2008).

Table 1

Descriptives, Internal Consistency Estimates, and Intercorrelations of key study variables (N = 244)

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Control variables																		
1. Age	40.14	10.00	-															
2. Gender	0.54	0.50	-.34**	-														
3. Level	1.56	0.73	.25**	-.13*	-													
Transformational leadership																		
4. IM	3.13	0.80	.02	.17**	.06	.78												
5. IIa	3.18	0.89	.08	.10	-.10	.63**	.84											
6. IIb	3.21	0.80	.13*	.04	.01	.66**	.71**	.74										
7. IC	3.38	0.79	.13*	.11*	.09	.55**	.82**	.66**	.80									
8. IS	3.32	0.82	.12*	.08	.09	.60**	.76**	.69**	.77**	.88								
Transactional and nonleadership																		
9. CR	3.26	0.77	.11*	.08	.12*	.61**	.75**	.72**	.79**	.72**	.85							
10. AmbE	2.68	0.77	.07	-.18**	-.04	.16**	.12*	.24**	.08	.16**	.17**	.70						
11. MbEP	2.27	0.81	-.10	-.11*	-.07	-.46**	-.58**	-.45**	-.58**	-.56**	-.54**	-.01	.70					
12. LF	2.25	0.86	-.03	-.06	.01	-.38**	-.60**	-.46**	-.55**	-.54**	-.59**	-.11*	.63**	.68				
Chronic Stress																		
13. ED	1.20	0.66	-.04	-.12**	.12*	-.11*	-.09	-.16**	-.11*	-.12*	-.12**	-.10	.19*	.14*	.87			
14. DS	1.28	0.72	-.08	-.19**	-.14*	-.39**	-.57**	-.45**	-.53**	-.66**	-.57**	-.01	.55**	.52**	.26**	.81		
15. PP	2.14	0.73	-.07	-.06	.16**	.02	.03	.01	-.02	-.05	-.02	.07	.13*	-.07	.52**	.14*	.76	
16. SC	2.48	2.17	-.03	-.14*	.14*	-.15**	-.16**	-.14*	-.12*	-.15**	-.15*	-.07	.26**	.20**	.42**	.30**	.33**	.84

Note. Values along the diagonal represent internal consistency estimates (Cronbach's Alpha); Level = Leaders' hierarchical level; MLQ-Scales: IM = inspirational motivation; IIa = idealized influence attributed; IIb = idealized influence behavior; IS = intellectual stimulation; IC = individualized consideration; CR = contingent reward; AMbE = active management by exception; MbEP = management by exception passive; LF = laissez-faire; Chronic stress scales: ED = Excessive Demands; DS = Dissatisfaction; PP = Performance Pressure; SC = Social Conflicts; gender coding: male = 0; female = 1; level coding: branch leader= 1; first-level supervisor= 2.

** p < .01 (one-tailed); * p < .05 (one-tailed).

The zero-order correlations between chronic stress and transformational leadership behavior in Table 1 show strong inverse associations of all transformational leadership scales with dissatisfaction, and weaker inverse associations with social tension and with excessive demands. However, transformational leadership was unrelated to performance pressure. As for transactional leadership, contingent reward was negatively related to dissatisfaction, to excessive demands, and to social conflicts. High scores on passive management by exception were associated with high levels of dissatisfaction, social conflicts, excessive demands, and performance pressure, while active management by exception was unrelated to chronic stress. The laissez faire leadership style was associated with high levels of dissatisfaction, social conflicts, and excessive demands. Simultaneous regression analyses were computed in order to test the independent influence of the different facets of leadership behavior on the four dimensions of chronic stress in the context of the other leadership behavior facets, while controlling for demographics and hierarchical level.

Influence of Leadership Behavior on Chronic Stress

Table 2 provides a summarized description of the regression analyses. Participants working in higher hierarchical levels reported a higher degree of performance pressure and social conflicts, but less dissatisfaction. A considerable amount of variance in chronic stress

– between 4 and 48 % – was explained by the regression analyses.

Table 2

Results of simultaneous regression analyses (standardized Betas; $N = 244$).

	ED	DS	PP	SC
<u>Control Variables</u>				
Age	-0.09	-0.02	-0.11	-0.09
Gender	0.14*	0.13*	-0.05	-0.13
Level	0.11	-0.10*	0.20**	0.15*
<u>Transformational Leadership</u>				
IM	0.03	0.04	0.09	-0.04
IIa	0.13	0.02	0.14	-0.04
IIb	0.09	-0.03	0.03	0.00
IS	0.05	0.02	-0.02	0.13
IC	-0.05	-0.45**	-0.12	-0.01
<u>Transactional and nonleadership</u>				
CR	0.02	-0.05	-0.11	0.01
AMbE	-0.10	0.02	0.04	-0.09
MbEP	0.18*	0.17*	0.29**	0.24**
LF	0.03	0.16*	-0.27**	0.05
R^2	8.8%	50.4%	11.5%	12.0%
R^2_{adj}	4.0%	47.9%	6.9%	7.4%

Note. For scale abbreviations, cf. Table 1; gender coding: male = 0, female = 1; level coding: branch leader= 1; first-level supervisor= 2.

** $p < .01$ (one-tailed); * $p < .05$ (one-tailed).

Supporting hypothesis H1a, a negative relationship between individualized consideration and dissatisfaction was found (cf. Table 2). However, no additional significant relationships between transformational leadership and chronic stress were detected. Thus, hypotheses H1b-H1e had to be rejected. As for transactional leadership, the positive associations between management-by-exception passive and all four chronic stress scales yielded support for H2c. In contrast, none of the other transactional leadership scales showed significant relationships to aspects of chronic stress. Finally, hypothesis 2d was supported: While laissez-faire was negatively related to performance pressure, it was positively related to dissatisfaction.

Discussion

Summary and Implications for Theory

The present study found significant relationships between aspects of supervisors' leadership styles and specific types of chronic stress in subordinates. More specifically, one aspect of transformational leadership (i.e., individualized consideration), was negatively related to dissatisfaction. This was true, although the theory of transformational leadership emphasizes a leader communication that strives for high levels of performance. Therefore also high levels of stress could be assumed, but obviously these transformational leadership behaviors do not lead to higher levels of perceived chronic stress in subordinates. In several meta-analyses it was found that all five transformational leadership styles were positively related to performance (Dumdum et al., 2002; Judge & Piccolo, 2004). Thus, transformational leaders on the one hand strive for enhanced levels of performance successfully, but on the other hand their subordinates do not perceive increased levels of stress. This is an interesting finding in that it suggests that transformational leaders increase performance without adding too much burden to the employees. However, we did not measure performance in this sample, and therefore cannot draw conclusions on the efficiency of leadership behavior in our study. Future studies could explore concurrent effects on performance and putative mechanisms underlying associations with chronic stress. In contrast to the lack of associations between most transformational leadership styles and chronic stress, individualized consideration was negatively related to chronic dissatisfaction. This result is in line with earlier research (Seltzer et al., 1989; Sosik & Godshalk, 2000) and suggests that consideration of employee's needs and the development of their individual strengths is the specific facet of transformational leadership that helps to protect followers from developing dissatisfaction with their work and social relationships. Transformational leaders focus on the communication of a long-term vision which is based on higher-order values and commonly shared goals. For this reason, it might be argued that transformational leadership helps to establish a meaningful - and, consequently, stress-preventing - frame for everyday work. In sum, our results suggest that inverse associations of transformational leadership with stress are mainly due to protective effects of individualized consideration on dissatisfaction with work and social recognition.

One aspect of transactional leadership (i.e., management-by-exception passive) was positively associated with all four indicators of chronic stress. Management-by-exception passive enhances chronic stress, presumably because supervisors solely intervene if standards are not met or if errors are detected. Thus, only negative feedback will be provided to followers, yielding dissatisfaction and other aspects of chronic stress.

Finally, a laissez-faire leadership style yields followers' dissatisfaction. However, laissez-faire was negatively related to Performance Pressure. It may reduce stress load due to pressure

to be successful, perform well, and make no mistake. Interestingly, although management-by-exception passive and laissez-faire have been characterized as similar forms of passive leadership, these two types of leadership behaviors showed opposite effects on performance pressure in the present study.

Due to the cross-sectional design of the study, the direction of causal relationships is unclear. A similarly adequate interpretation of our findings could follow the other direction that assumes chronic stress to influence leadership style. For example, this could be based on a selection process, where an employee chooses to work with a leader whose leadership style matches his/her level of chronic stress best. Longitudinal studies of leadership style and stress are needed to clarify direction of causation.

Implications for Practice

Management-by-exception passive is a leadership behavior that focuses on the compliance with performance standards. Leaders in organizations often rely on this leadership style in order to control their subordinates. With regard to the results of the present study, managers should be aware that this leadership style leads to enhanced levels of chronic stress. There is evidence for increased physiological stress reactions resulting from chronic stress which may have detrimental health effects (Schlotz, Schulz, Hellhammer, Stone & Hellhammer, 2006). Therefore, Management-by-exception passive might lead to enhanced costs due to decreasing levels of subordinates' health.

The present study found negative associations of laissez-faire with performance pressure. Still, the potential benefit of absent detrimental health effects has to be balanced against effects on productivity. It is highly doubtful that if managers should refrain from displaying leadership behaviors in order to prevent subordinates chronic performance pressure, as meta-analyses found that laissez-faire is also negatively correlated with measures of subordinates' motivation and performance (Judge & Piccolo, 2004). This finding is in line with our results of positive associations between laissez-faire and dissatisfaction.

Transformational leadership styles seem to enhance performance without increasing stressor load on the subordinates. Specifically, subordinates of leaders with higher levels of individualized consideration reported lower levels of dissatisfaction. According to studies that demonstrated reduced stress symptoms in subordinates in relation to transformational leadership (e.g., Seltzer et al., 1989), this leadership style overall seems to be the most beneficial leadership style in terms of stress and productivity.

Limitations and Perspectives for Future Research

With regard to the previously mentioned interpretations of the results, the following limitations must be taken into consideration. Although we found clear relationships between leadership styles and aspects of stress, we did not provide results that help to understand the reasons for these relationships. That is, what are the underlying mechanisms responsible for the observed relationships? As our interpretations of the result are speculative in nature, further research should help to understand the implemented processes of different leadership styles and their respective effects on subordinates' perceived stress. Qualitative methods such as open-ended interviews may be one possible way for further exploration. Moreover, organizationally relevant constructs and their relationship with and/or their mediating role

between leadership and stress should be further explored. Among others, commitment (Den Hartog, VanMuijen & Koopman, 1996), personality (Judge, Erez, Bono & Thoresen, 2002), and individual coping style (de Rijk, Le Blanc, Schaufeli & de Jonge, 1998) might impact the individual stress level and thus could be important factors for our understanding of leadership phenomena associated with chronic stress.

Furthermore, as several of the relationships were statistically weak, they should be replicated in further organizations before arriving at firm conclusions. As our approach was cross-sectional in nature, further studies should implement longitudinal designs. Moreover, advanced statistical analysis methods such as structural equation modeling (SEM) allow for an explicit test of theory-based models that describe causal relationships between leadership styles and stress. Also, SEM allows for controlling some of the negative effects of common-method biases (Podsakoff, MacKenzie, Lee & Podsakoff, 2003) which might have influenced the results of the present study. Nevertheless, the results of the present study were in line with prior research. Thus, we might have some confidence in the notion that common-method bias was not too strong an issue for the present study.

Overall, this study provides evidence for the positive consequences of transformational leadership: It may increase satisfaction of the subordinates with their work, while it does not lead to excessive demands, performance pressure, or increased social conflicts. This may play a role in the explanation of positive effects of transformational leadership on productivity, and it may have implications for organizational health. The positive effect of transformational leadership on subordinates' satisfaction and the lack of an increase in chronic stress are in sharp contrast to alternative leadership styles, in particular to management-by-exception passive.

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