

Healthy Leaders – Healthy Employees

Consequences of Impairments in Leaders' Health and Interventions for Promoting their Health

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To Jonas, who always reminds me of what really counts.

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SUMMARY

The consequences of leaders' poor health can be far-reaching for the leaders themselves, their employees, and their organizations. Interventions that are aimed at promoting leaders' health in order to weaken the negative consequences of their inferior state of health are needed and have been called for by practitioners and researchers alike. Indeed, leaders' health has not received much attention in research so far. In addition, interventions that target the health of leaders hardly exist. This is all the more surprising because leaders are exposed to high job demands and are thus at risk for developing health problems.

In three empirical studies ($N = 390$), this dissertation aimed to shed light on the topic of leaders' health. In Study 1, the negative consequences of leaders' poor health for their employees were investigated. On the basis of Study 1, two different health-promoting interventions for leaders, one examining the antecedents (Study 2) and the other examining the consequences of the respective measure (Study 3), were dealt with. Whereas Studies 2 and 3 both focus on ways to promote health, Studies 1 and 2 share the health-oriented leadership (HoL) concept as their theoretical basis. The HoL concept differentiates between self- and other-directed health-promoting leadership behavior and also takes leaders' health into account.

In a two-wave online study, Study 1 used data from both leaders ($n = 41$) and employees ($n = 65$) to examine the crossover process and the effect of the underlying mechanism of leaders' exhaustion on employees' somatic complaints. It was hypothesized that the more exhausted leaders were, the more somatic complaints their employees would have (direct effect). Referring to the HoL concept, it was further expected that exhausted leaders would be less likely to engage in follower-directed health-promoting leadership behavior (i.e., StaffCare behavior), which in turn was expected to increase employees' somatic complaints (indirect effect). Results revealed an indirect but no direct crossover effect from leaders to their employees.

Based on the results of Study 1, Study 2 dealt with leaders' self-direct health-promoting leadership behavior (i.e., SelfCare behavior) as a means to promote their health. With a cross-sectional study in a sample of 150 leaders, Study 2 investigated the personal antecedents (i.e., core-self evaluations; CSEs) of leaders' health behavior because knowing about antecedents can help make such behavior more likely to occur.

CSEs were assumed to be positively related to leaders' health behavior with reduced exhaustion as a mediator and organizational health climate (OHC) as a moderator of this relation. Results showed that CSEs are directly and indirectly related to the health behavior of the leader. OHC was not found to function as a moderator in the CSEs-health behavior relation.

Study 3 of this dissertation investigated the consequences of a health-promoting intervention for future leaders. Given the strong link between emotional intelligence (EI) and health, a Web-Based Emotional Intelligence Training (WEIT) program which aimed at improving the abilities to perceive and regulate emotions and lower perceived stress as an important precursor of leaders' impaired health was developed and evaluated. The study investigated the short-term and long-term effects of the WEIT program in a sample of 134 business students who were randomly assigned to a training group or wait list control group. Data were collected before the training, directly after the training, and 6 weeks later. Results showed that WEIT was mostly successful in increasing emotion perception and emotion regulation. Particularly, in the training group but not in the wait list control group, the ability to perceive emotions improved directly after training. There were no differences between the groups for the ability to perceive emotions 6 weeks later, but results suggested that the training effect remained stable in the training group. The ability to regulate emotions did not improve directly after training neither in the training group nor the wait list control group. Indeed, emotion regulation increased 6 weeks later in both groups, the training group had larger improvements than the wait list control group. WEIT failed to affect perceived stress.

The overall findings of this dissertation underline the importance of leaders' health for the health of their employees. One major finding is that leaders transfer their poor health to their employees in a behavioral crossover process, emphasizing the need for health-promoting interventions for leaders. Based on this, the dissertation's findings underline the important role of personality for leaders' health behavior in order to promote their health. In addition, a web-based EI intervention as a measure to promote the health of future leaders was effective with respect to health relevant abilities (i.e., emotion perception and emotion regulation), but was not successful when it came to affecting health-related outcomes (i.e., perceived stress). In the General Discussion, the implications for research and practice of this dissertation are presented.

ZUSAMMENFASSUNG

Wenn Führungskräfte¹ bei schlechter Gesundheit sind, können sich weitreichende Folgen für die Führungskräfte selbst, ihre Mitarbeitenden und ihre Unternehmen ergeben. Interventionen, die darauf abzielen die Gesundheit der Führungskräfte zu fördern, um die negativen Konsequenzen ihres schlechten gesundheitlichen Zustands abzumildern, sind daher notwendig und werden von Praxis und Wissenschaft gleichermaßen gefordert. Allerdings hat sich die Forschung bis jetzt wenig mit dem Thema Führungskräftegesundheit auseinandergesetzt. Es kommt hinzu, dass es kaum Interventionen gibt, die die Gesundheit von Führungskräften in den Mittelpunkt stellen. Dies ist umso überraschender, da Führungskräfte hohen Arbeitsanforderungen ausgesetzt und somit für die Entwicklung gesundheitlicher Probleme gefährdet sind.

In drei empirischen Studien ($N = 390$) beschäftigte sich diese Dissertation mit der Gesundheit von Führungskräften als übergeordnetes Thema. In Studie 1 wurde untersucht, welche negativen Konsequenzen ein schlechter gesundheitlicher Zustand der Führungskraft für ihre Mitarbeitenden nach sich ziehen kann. Auf Basis der Ergebnisse von Studie 1 beschäftigten sich Studie 2 und Studie 3 mit je einer gesundheitsförderlichen Intervention für Führungskräfte. Studie 2 fokussierte sich dabei auf die Antezedenzen und Studie 3 auf die Konsequenzen der jeweiligen Intervention. Während Studie 2 und 3 einen gemeinsamen Interventionsfokus teilen, haben Studie 1 und 2 den Ansatz gesundheitsförderlicher Führung (englisch: health-oriented leadership; HoL) als theoretische Basis gemein. Der HoL Ansatz unterscheidet zwischen gesundheitsförderlicher Selbst- und Fremdführung und räumt darüber hinaus der Gesundheit der Führungskraft einen großen Stellenwert ein.

In Studie 1, einer Onlinestudie mit zwei Messzeitpunkten und Daten von Führungskräften ($n = 41$) und ihren Mitarbeitenden ($n = 65$), wurde untersucht, inwieweit Führungskräfte ihre Erschöpfung auf ihre Mitarbeitenden in Form von vermehrt berichteten somatischen Beschwerden übertragen. Zusätzlich zu einem direkten Übertragungsprozess wurde in Bezug auf den HoL Ansatz vermutet, dass erschöpfte Führungskräfte ihre Mitarbeitenden in geringerem Ausmaß gesundheitsförderlich führen (englisch: StaffCare behavior) und somit zu einem erhöhten Aufkommen somatischer

¹Die Formulierung Führungskraft wird als geschlechtsneutral verstanden und schließt somit männliche wie weibliche Führungspersonen ein.

Beschwerden beitragen. Die Ergebnisse von Studie 1 wiesen einen gesundheitsbezogenen indirekten Übertragungsprozess von Führungskräften auf ihre Mitarbeitenden nach, aber keinen direkten Übertragungsprozess.

Auf Basis der Ergebnisse von Studie 1 beschäftigte sich Studie 2 mit dem gesundheitsförderlichen Selbstführungsverhalten (englisch: SelfCare behavior) von Führungskräften ($n = 150$) als Mittel der eigenen Gesundheitsförderung. Im Rahmen eines querschnittlichen Studiendesigns wurde untersucht, inwieweit die zentralen Selbstbewertungen (englisch: core self-evaluations; CSEs) der Führungskräfte als persönlichkeitsbezogene Antezedenzien gesundheitsförderlichem Selbstführungsverhalten vorangehen. Neben einem direkten Zusammenhang, wurden mediierende und moderierende Prozesse betrachtet. Es wurde vermutet, dass die zentralen Selbstbewertungen die erlebte Erschöpfung von Führungskräften reduziert (englisch: reduced exhaustion) und somit gesundheitsförderliches Selbstführungsverhalten erleichtert. Das organisationale Gesundheitsklima (englisch: organizational health climate; OHC) sollte den Zusammenhang von zentralen Selbstbewertungen und gesundheitsförderlichem Selbstführungsverhalten moderieren. Die Ergebnisse zeigten, dass die zentralen Selbstbewertungen direkt und indirekt mit dem Gesundheitsverhalten der Führungskräfte in Zusammenhang stehen. Das organisationale Gesundheitsklima moderierte den Zusammenhang von zentralen Selbstbewertungen und Gesundheitsverhalten der Führungskräfte nicht.

Studie 3 der Dissertation untersuchte die Konsequenzen einer gesundheitsförderlichen Intervention für zukünftige Führungskräfte. Weil die Bedeutung emotionaler Intelligenz (EI) für die Gesundheit bereits vielfach empirisch nachgewiesen wurde, wurde in Studie 3 ein webbasiertes Training zur Förderung emotionaler Kompetenzen (englisch: Web-Based Emotional Intelligence Training; WEIT) entwickelt und evaluiert. Das Training zielte darauf ab, die Emotionswahrnehmung und -regulation zukünftiger Führungskräfte zu steigern und wahrgenommenen Stress als Vorläufer weiterer Gesundheitsbeeinträchtigungen zu verringern. Die Evaluation war gekennzeichnet durch die Verwendung einer Wartelisten-Kontrollgruppe sowie Prä- und Postmessungen (vor dem Training, direkt nach dem Training und 6 Wochen nach dem Training). In einer Stichprobe von 134 Studierenden der Wirtschaftswissenschaften wurden so Kurz- und Langzeiteffekte des Trainings untersucht. Die Ergebnisse der Studie zeigten eine Zunahme der Fähigkeit zur Emotionswahrnehmung direkt nach dem Training in der

Trainingsgruppe, nicht aber in der Wartelisten-Kontrollgruppe. Es wurden keine Gruppenunterschiede zwischen den beiden Gruppen für die Fähigkeit der Emotionswahrnehmung 6 Wochen später gefunden. Die Ergebnisse legen jedoch nahe, dass der Trainingseffekt auch 6 Wochen nach dem Training in der Trainingsgruppe stabil blieb. Die Fähigkeit zur Emotionsregulation verbesserte sich direkt nach dem Training weder in der Trainingsgruppe noch in der Wartelisten-Kontrollgruppe. Allerdings zeigte sich eine Zunahme der Fähigkeit zur Emotionsregulation 6 Wochen nach dem Training in beiden Gruppen, wobei die Zunahme in der Trainingsgruppe größer war als in der Wartelisten-Kontrollgruppe. Die Ergebnisse lieferten—wenn auch eingeschränkt—Hinweise auf die Wirksamkeit des Trainings in Bezug auf die Förderung von Emotionswahrnehmung und -regulation. Die Teilnahme an dem Training führte nicht zu einer reduzierten Stresswahrnehmung.

Insgesamt betonen die Ergebnisse der Dissertation die Wichtigkeit gesunder Führungskräfte für die Gesunderhaltung ihrer Mitarbeitenden. Diese Aussage wird durch die Ergebnisse in Studie 1 unterstützt, die zeigten, dass Führungskräfte ihren schlechten gesundheitlichen Zustand auf ihre Mitarbeitenden in einem verhaltensbezogenen Übertragungsprozess transferieren und somit die Notwendigkeit gesundheitsförderlicher Interventionen für Führungskräfte untermauern. In diesem Zusammenhang unterstreichen die Dissertationsergebnisse die Bedeutung der Persönlichkeit von Führungskräften für die Umsetzung gesundheitsförderlichen Selbstführungsverhaltens als Form der Gesundheitsintervention. Darüber hinaus konnte ein webbasiertes EI Training als gesundheitsförderliche Intervention für zukünftige Führungskräfte zwar gesundheitsrelevante Fähigkeiten (d.h. die Fähigkeit zur Emotionswahrnehmung und -regulation) verbessern, aber die Gesundheit in Form einer reduzierten Stresswahrnehmung nicht beeinflussen. In einer allgemeinen Diskussion werden die Implikationen für Forschung und Praxis, die sich aus der Dissertation ergeben, dargestellt.

STUDIES INCLUDED IN THIS DISSERTATION

This dissertation is based on three research studies. The studies have been published in different high-ranked journals throughout the dissertation process. All three studies are embedded in the text in the published or a postprint version and can be read independently.

Köppe, C., Kammerhoff, J., & Schütz, A. (2018). Leader-follower crossover: Exhaustion predicts somatic complaints via StaffCare behavior. *Journal of Managerial Psychology*, *33*(3), 297–310. doi:10.1108/JMP-10-2017-0367

Köppe, C., & Schütz, A. (2019). Healthy leaders: Core self-evaluations affect leaders' health behavior through reduced exhaustion. *Frontiers in Psychology*, *10*(998), 1–10. doi:10.3389/fpsyg.2019.00998

Köppe, C., Held, M. J., & Schütz, A. (2019). Improving emotion perception and emotion regulation through a Web-Based Emotional Intelligence Training (WEIT) program for future leaders. *International Journal of Emotional Education*, *11*(2), 17–32.

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GENERAL INTRODUCTION

“The healthy leader is the heart of the healthy organization”

(Quick, Macik-Frey, & Cooper, 2007, p. 193)

Leaders are confronted with high job demands (Hambrick, Finkelstein, & Mooney, 2005) and are thus at risk of health problems. Leaders’ impaired health can subsequently have serious consequences for employees as well as for organizations. However, studies on leader health are rare (Barling & Cloutier, 2016), and interventions aimed at promoting leader health—even if needed—are missing, too. Therefore, the aim of this dissertation was twofold. First, this dissertation was designed to extend research on leader health by, on the one hand, examining the negative effects of leaders’ impaired health on the health of their employees (Study 1, Chapter 2). On the other hand, this dissertation investigated the antecedents and consequences of health-promoting interventions for leaders (Studies 2 and 3, Chapters 3 and 4).

The General Introduction is divided into four parts. In the first part, the causes and consequences of leaders’ ill-health are illustrated. Further, the HoL concept (Franke, Felfe, & Pundt, 2014) as a theoretical framework that can be used to explain how leader health affects the health of their employees is introduced. In the third part, two different ways of promoting leader health are presented. Finally, there will be an outline of the following chapters.

Leader Health

According to the job demands-resources (JD-R) model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli & Taris, 2014), high job demands lead to negative health outcomes in a “health impairment process” (Schaufeli & Taris, 2014, p. 47). Leaders² are confronted with high job demands and are thus a group that is at high risk for experiencing ill-health. Blom, Bodin, Bergström, and Svedberg (2016), for example, found that in comparison with nonleaders, leaders reported experiencing greater job demands. In addition, a recent study by Li, Schaubroeck, Xie, and Keller (2018) showed that employees who advanced from holding a nonleader position to a leadership

²In the following, the term “leaders” refers to individuals who hold responsibilities for other personnel at a company (Steinmetz, 2011) and implies both leaders and managers of all hierarchical levels (for a detailed discussion about the differences between leadership and management, see Kotter, 2007).

position reported having higher job demands than employees who remained in their current position. In this vein, Hambrick et al. (2005) illustrated that leaders experience special job demands that are due to their leader role and that are defined as “the degree to which a given executive experiences his or her job as difficult or challenging” (p. 473).

Studies on leaders’ job demands concentrate on either general job demands or job demands that are due to certain leader tasks (Steinmetz, 2011). In terms of general job demands, Zimmer, Hentrich, Bockhoff, Wissing, and Petermann (2015) illustrated that leaders suffer in particular from a high workload (e.g., high work intensity, long work hours) and conflicts that can be attributed to their leader role (e.g., role conflicts, role ambiguity, work-life conflicts). This result was supported in a recent qualitative study by Zimmer, Hentrich, and Meyer-Lindenberg (2018). This study showed that leaders experience high job demands in terms of long, intensive work hours, high economic responsibilities, and role conflicts. Similarly, using a sample of 768 leaders, Ohm and Strohm (2001) found that high workload, time pressure, daily interruptions, unstructured meetings, and long hours are some of the demanding factors that leaders face at their companies. In addition, when looking across different companies, Pangert and Schüpbach (2011) found that working under time pressure and being interrupted during work represent leaders’ major job demands. As part of the Collaborative International Study of Managerial Stress (CISMS), 85 German leaders stated that they experience stress because of difficult work relationships, high workload, a lack of recognition, and a harmful organizational climate (Büssing & Glaser, 1998). In particular, the results of these studies showed that high workload, especially in terms of long working hours, put pressure on leaders. In this vein, Hunzinger and Kesting (2004) found that leaders from different countries work an average of between 51 and 60 hours per week, and the trend has been moving upward (Association of Professional Executives of the Public Services of Canada, 2017). Long working hours, however, can lead to conflicts between work and private life (Jacobshagen, Amstad, Semmer, & Kuster, 2005). In this vein, Ohm and Strohm (2001) showed that leaders are dissatisfied with their leisure time. In addition to the job demands mentioned above, task-related job demands such as operating internationally and dealing with a wide range of products (Wang & Yang, 2015), managing change (Lindorff, Worrall, & Cooper, 2011), traveling (DeFrank, Konopaske, & Ivancevich, 2000), handling dynamic tasks (Mohr & Wolfram, 2010), implementing layoffs (Grunberg,

Moore, & Greenberg, 2006), and leading others (Zwingmann, Wolf, & Richter, 2016) were found to be detrimental factors for leaders.

Indeed, studies focusing on leaders' health are very rare (for a review, see Barling & Cloutier, 2016), but there have been a few studies on stress in leaders. These studies have shown that leaders experience a great deal of stress at work (Association of Professional Executives of the Public Services of Canada, 2017; Cavanaugh, Boswell, Roehling, & Boudreau, 2000; Kirkcaldy & Cooper, 1992; Kromm, Frank, & Gadinger, 2009; Zimber et al., 2015). Looking at leader stress is a good starting point from which to approach the topic of impaired leader health, because stress at work can lead to negative health outcomes (for a review, see Ganster & Rosen, 2013). In this vein, Mohr, Rigotti, and Müller (2005) found in a sample of employees from different occupational backgrounds ($N = 4030$) that work stress predicted depressive symptoms two years later.

In contrast to health outcomes that refer to psychological disorders (i.e., depression; Mohr, Rigotti, & Müller, 2005), there are other health outcomes of work stress which can be categorized along the three stages of the allostatic load (AL) model (see Ganster & Rosen, 2013). Especially the link from work stress to various health outcomes of the first stage of the AL model has received much attention in organizational research. In the first stage, the exposure to stressors at work lead to changes in psychological (affective outcomes; e.g., emotional exhaustion, anxiety), physiological (e.g., cortisol), and psychosomatic (e.g., headache) health outcomes. The most frequently investigated health outcomes of work stress are affective outcomes (Ganster & Rosen, 2013). Emotional exhaustion—the core component of job burnout (Maslach, Schaufeli, & Leiter, 2001)—represents a prominent affective health outcome which is commonly used in organizational research.

Indeed, emotional exhaustion can also be classified as a measure of psychological well-being (e.g., Sonnentag, 2015). The terms health and well-being tend to be used inconsistently by organizational researchers and are thus often intermingled with each other (see also Danna & Griffin, 1999). In their review on health and well-being in the workplace, Danna and Griffin (1999) made an attempt to clarify the meanings of both constructs. They defined health as “a sub-component of well-being” (p. 359), which can be operationalized by both psychological (e.g., exhaustion, anxiety) and physiological (e.g., blood pressure, skin conductance) parameters and which can be assessed with either subjective or objective measurements. By contrast, well-being is “a more broad and

encompassing concept that takes into consideration ‘the whole person’ ” (Danna & Griffin, 1999, p. 364) and is often referred to as the experience of pleasure and happiness (Sonnentag, 2015). Along the same lines, satisfaction with the job represents an example of work-related well-being; exhaustion represents an example of work-related health (Danna & Griffin, 1999).

Health in this dissertation refers to the definition made by Danna and Griffin (1999). The authors use the term health when specific psychological and/or physiological health-related indicators are of interest. In Study 1 and Study 2 of this dissertation, health was operationalized in terms of leaders’ exhaustion. In addition, Study 3 of this dissertation focused on perceived stress as an important precursor of leaders’ impaired health. Exhaustion, in this case, means “intensive physical, affective and cognitive strain” (Demerouti et al., 2001, p. 500) and thus goes beyond mere emotional exhaustion. Stress was measured by the Irritation scale by Mohr and Rigotti (2014) which captures emotional and cognitive responses to demands at work.

In the few studies in which leaders’ health was compared with the health of nonleaders or the general population, leaders *appeared* to be in relatively good health at first glance (e.g., Kromm et al., 2009; Sherman et al., 2012). However, in a quantitative review, Zimmer et al. (2015) found that findings regarding the prevalence of health problems among leaders were mixed, and thus, they cautioned that concrete conclusions should not be drawn from such findings. In addition, the dark figure is expected to be high among leaders due to implicit leadership theories or to the deep-rooted stigmatization associated with impaired leader health, underestimating the prevalence of leaders’ health problems (Barling & Cloutier, 2016). Empirically, studies have supported this view: Studies have shown that leaders suffer from burnout (Jamal & Baba, 2000; Pangert & Schüpbach, 2011), depression (Hentrich, Zimmer, Sosnowsky-Waschek, Gregersen, & Petermann, 2017; Jacobshagen et al., 2005), and sleeping problems (Barnes, Lucianetti, Bhave, & Christian, 2015; Ohm & Strohm, 2001; Zimmer et al., 2018). Moreover, a recent longitudinal study by the Association of Professional Executives of the Public Service of Canada (2017) on the health of leaders ($N = 3,075$) showed that 60% of them could be considered overweight or obese and that 13% tended to engage in problem drinking. There were also increasing trends for leaders to be diagnosed with musculoskeletal and gastrointestinal problems. Moreover, certain groups seem to be especially prone to negative health outcomes. For example, studies have

shown that female leaders (Kromm et al., 2009; Zimber et al., 2015), middle-aged leaders (from 30 to 50; Ohm & Strohm, 2001), and leaders from lower hierarchical levels (Association of Professional Executives of the Public Services of Canada, 2017; Zimber et al., 2015) represent high-risk groups. In addition, Ohm and Strohm (2001) found that the longer leaders had held their current position, the worse their physiological and psychological health seemed to be, pointing to cumulative effects.

The consequences of leaders' poor health are far-reaching. Leaders represent important key figures inside the organization. They are top performers who are likely to contribute to organizational functioning and success if they feel healthy and fit. Indeed, leaders' impaired health can negatively affect both organizational and individual outcomes. Leaders' low levels of health can cost the organization a great deal of money due to absenteeism, poor performance, and lost productivity or if the leaders engage in maladaptive behaviors (Danna & Griffin, 1999). Where leaders' maladaptive behaviors are concerned, Hambrick et al. (2005) suggested that leaders who experience high pressure at work make suboptimal strategic decisions, engage in surface acting more often (i.e., by modifying their emotional expressions without regulating their inner feelings), and put extra pressure on their employees.

The study by Hambrick et al. (2005) showed that poor leader health plays a crucial role in how it affects not only the organization but also its employees (Barling & Cloutier, 2016; Harms, Credé, Tynan, Leon, & Jeung, 2017). Along the same lines, a recent meta-analysis by Harms et al. (2017) found that leaders who feel stressed and exhausted engage less in positive but more in negative leadership behavior. Negative leadership behavior is in turn associated with multiple negative outcomes for employees such as reduced organizational commitment, performance, or well-being (Schyns & Schilling, 2013; Tepper, 2000; Zhang & Liao, 2015).

Health and well-being of employees play pivotal roles in their daily functioning. For example, Wright and Cropanzano (2000) showed that employees' psychological well-being predicted their job performance, pointing to a kind of vicious circle. Indeed, leaders influence the health and well-being of their subordinates not only through their leadership behavior but also in a "crossover contagion process" (Skakon et al., 2010, p. 108), thus maximizing employees' health risk.

The HoL Concept

Recently, researchers began to develop health-specific leadership concepts (also referred to as healthy, health-relevant, health-oriented, or health-promoting leadership; Jiménez, Winkler, & Dunkl, 2017), in comparison with rather general leadership styles (e.g., transformational leadership; Bass, 1985), whose main aim is to promote and protect employee health. For example, on the basis of 20 qualitative interviews, Eriksson, Axelsson, and Axelsson (2011) defined health-promoting leadership in terms of a supportive and motivating leader who designs a healthy work environment and initiates health-promoting activities. In addition, Jiménez et al. (2017) presented a new concept of health-promoting leadership. The authors suggested that “the aim of health-promoting leadership should be to gradually design the working environment in a way that it is able to enhance [employee] health” (p. 2431, author’s supplement). But these concepts again focus on the influence of leadership on employee health but neglect leaders’ own health. At least Jiménez et al. (2017) assumed that a leader’s health awareness represents a key factor that influences the health of his or her employees.

The HoL concept by Franke et al. (2014) offers a broader perspective on health-promoting leadership. Whereas Eriksson et al. (2011) and Jiménez et al. (2017) concentrated on the health of employees, the HoL concept considers both leaders’ and employees’ health. In addition, whereas the other concepts suggest that leaders primarily influence the health of their employees by designing a health-enhancing work environment (indirect path), the HoL concept (Franke & Felfe, 2011; Franke et al., 2014; Franke, Vincent, & Felfe, 2011) integrates three additional ways through which leaders can affect how employees feel at work (Franke, Ducki, & Felfe, 2015). The authors suggested that—ideally—leaders (a) provide their employees with help and support and thus directly enhance their health, (b) transfer their own positive feelings to their employees via crossover processes, and (c) model health-promoting “cognitions, motivation, and activities” (Franke et al., 2014, p. 156) in order to motivate their employees to deal with the employees’ own health issues. Thus, and in contrast to the health-promoting leadership concepts introduced above, the HoL concept emphasizes that leaders’ own health is a fundamental aspect of the health of their employees. More precisely, Franke et al. (2014) suggested that “the way leaders think, feel, and behave with regard to their own health” (p. 143) influences both how they take care of their employees and how employees take care of themselves. Hence, the HoL concept

differentiates between follower-directed (referred to as StaffCare) and self-directed (referred to as SelfCare) health-promoting leadership (Franke et al., 2014). Whereas StaffCare is solely performed by the leader, SelfCare is performed by leaders and followers, respectively. Both StaffCare and SelfCare are characterized by three aspects, namely, health-related values, awareness, and behavior. The HoL concept suggests that leaders and their employees engage more in health-relevant behavior (either in terms of StaffCare or SelfCare) when they consider their own health and the health of others to be an important issue (i.e., value) and when they are aware of both how they feel and why (i.e., awareness). However, empirically, the behavior component was found to be of particular importance for the health of leaders and their employees (Franke et al., 2014). In general, health behavior “refers to [the individuals’] personal activity and engagement in health-relevant actions” (Franke et al., 2014, p. 143, author’s supplement) in order to protect and promote their resources. Health-relevant actions, for example, are comprised of designing healthy working conditions (e.g., reducing noise or extreme temperatures), keeping oneself and others informed about health and safety regulations, or engaging (or with regard to StaffCare, encouraging others to engage) in health-promoting interventions.

The relations between StaffCare, SelfCare, and different health-related outcomes are illustrated in the “house of HoL” (Franke et al., 2014, p. 142, see Figure 1 on page 9). As outlined earlier, leaders’ SelfCare and thus their own health represents the basis for self- as well as other-directed health-promoting leadership behavior. More precisely, the more SelfCare a leader engages in, (a) the more resources he or she has at hand to perform StaffCare and (b) the more role modeling he or she can exhibit to affect employees’ SelfCare. Both StaffCare and employee SelfCare in turn lead to positive health outcomes for employees. In addition, it is assumed that employees’ SelfCare mediates the relation between StaffCare and the health of employees.

Studies have confirmed the relations suggested by the house of HoL (Franke et al., 2015; Franke & Felfe, 2011; Franke et al., 2014; Kranabetter & Niessen, 2017). For example, leaders’ SelfCare was associated with more StaffCare (rated by leaders and their employees; Franke et al., 2015). Moreover, StaffCare was found to be related to better health in employees (Franke & Felfe, 2011; Franke et al., 2014). This effect was mediated by employees’ SelfCare. In addition, Franke et al. (2014) showed that StaffCare explained additional variance in multiple health outcomes of employees beyond the

effects of transformational leadership which supports the relevance of health-specific leadership for employee health.

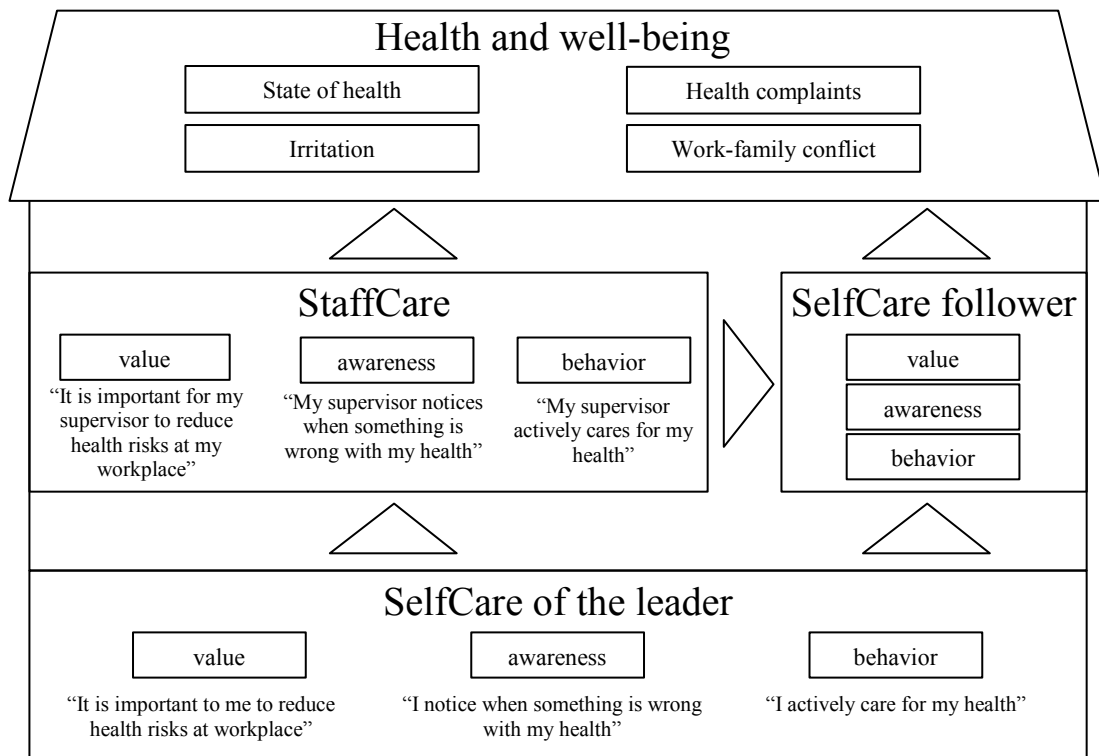


Figure 1. The house of HoL. Adapted from “The impact of health-oriented leadership on follower health: Development and test of a new instrument measuring health-promoting leadership” by F. Franke, J. Felfe, and A. Pundt, 2014, *Zeitschrift für Personalforschung*, 28(1–2), p. 142. Copyright © 2014 by SAGE publications, Ltd. Reprinted by Permission of SAGE publications, Ltd.

However, whereas the effect of leaders’ StaffCare on the health of their employees (i.e., the upper part of the house of HoL) has already been confirmed empirically (Franke & Felfe, 2011; Franke et al., 2014), the SelfCare of the leaders and thus their own health (i.e., the lower part of the house of HoL) has remained underresearched (see also Barling & Cloutier, 2016). This is particularly surprising because leaders’ SelfCare plays a central role in the HoL concept.

Study 1 and Study 2 of this dissertation thus focused on the lower part of the house of HoL while examining the antecedents and consequences of leaders’ own health. By doing so, the dissertation aimed to extend research on leader health in general and the SelfCare concept in particular and thus aimed to provide important insights into how to promote healthy employees, leaders, and organizations. More precisely, Study 1 investigated the direct and indirect effects of leaders’ impaired health (i.e., exhaustion) on the health of their employees (i.e., somatic complaints). It was hypothesized that leaders’ reduced StaffCare behavior would mediate this relation. Study 2 took a closer look at

leaders' SelfCare behavior (see the following section for detailed information). In more detail, the antecedents of SelfCare behavior in terms of the personal characteristics of the leaders (i.e., CSEs) were investigated and the mediating (i.e., exhaustion) and moderating processes (i.e., OHC) of this relation were considered.

Interventions Targeting Leader Health

Leaders are confronted with high job demands and are thus prone to health problems. Moreover, healthy leaders are an important requirement for healthy employees and healthy organizations. As a consequence, interventions that are aimed at promoting leader health are mandatory and have been called for by practitioners and researchers alike (Barling & Cloutier, 2016; Zwingmann et al., 2016).

Health promotion is defined as a “process of enabling people to increase control over, and to improve, their health” (World Health Organization, 1986, p. 1). Health promotion at work is called workplace health promotion and focuses on employees in particular (Day & Helson, 2016). According to Bamberg, Ducki, and Metz (2011), workplace health promotion is a resource-based approach that goes beyond health prevention, which is aimed at preventing and limiting health problems. In fact, workplace health promotion empowers employees to improve their health by gaining new or fostering existing resources (Bamberg et al., 2011). Resources can be either external (e.g., autonomy, social support) or internal (e.g., self-efficacy, optimism) in nature (Richter & Hacker, 1998). Health-promoting interventions should therefore concentrate on both the individual (referred to as individual-focused interventions; e.g., stress management training programs) and the workplace (referred to as environment-focused interventions; e.g., offering healthy meals in the cafeteria) in order to promote health (Day & Helson, 2016).

Interventions that target health promotion at work include all kinds of measures (e.g., stress management training programs, safety instructions, ergonomically designed workplaces), which differ significantly, for example, in terms of the target group (e.g., blue- vs. white-collar employees) or the aim and point of time (e.g., promotion vs. prevention; Bamberg et al., 2011). However, health-promoting interventions that are tailored to the particular needs of leaders are rare and have usually not been evaluated (see also Barling & Cloutier, 2016; Busch & Steinmetz, 2002). Rather, leaders participate in various interventions, which are intended to “affect those who do *not* [emphasis added]

participate in the intervention” (Kelloway & Barling, 2010, p. 261), namely, their employees. For example, leaders are taught to be better health promoters for their employees (e.g., Eriksson, Axelsson, & Bihari Axelsson, 2010; Kelloway & Barling, 2010; Rigotti, Holstad, et al., 2014) or to manage their employees’ health problems more successfully (e.g., Shann, Martin, & Chester, 2014). But interventions that are aimed at improving the health of leaders are essential, given that they have a large influence (positive or negative depending on their state of health) on the functioning of organizations and their members. In the following, two health-promoting interventions that focus on the health of leaders are presented.

Engaging in SelfCare (see Figure 1 on page 9) represents an appropriate way to foster leaders’ internal as well as external resources and thus to promote their health. As stated previously, SelfCare includes leaders’ own health-oriented values, awareness, and behavior. Thus, SelfCare means that leaders attach importance to health-related issues, are aware of personal demands and stress signals, and protect and promote their resources (Franke et al., 2014). Engaging in health behavior in turn requires that leaders, first, develop healthy working conditions, seek support, or follow health and safety regulations (external resources). Second, they need to improve their way of working, optimize their work-life balance, or develop health-enhancing skills (internal resources). In support of this idea, Franke et al. (2015) found that the more SelfCare behavior a leader performed, the better his or her health was. In particular, they found that leaders had a better state of health, less irritation, fewer health complaints, and fewer work-family conflicts.

Given the resource-based approach of leaders’ SelfCare behavior, which is in line with the idea of health promotion and its positive effects on health-related outcomes, SelfCare behavior is treated as a health-promoting intervention for leaders in this dissertation. Indeed, even though Franke et al. (2015) already showed the effectiveness of performing SelfCare behavior, studies focusing on the antecedents of the SelfCare behavior of leaders have previously been missing. Thus, Study 2 investigated the personal antecedents (i.e., CSEs) of leaders’ SelfCare behavior because knowing about antecedents can help make SelfCare behavior more likely to occur.

In addition to leaders’ health-oriented behavior, the health awareness component of leaders’ SelfCare plays an important role in their health. Health awareness means that leaders who are aware of their own health know how they feel and why. Health awareness bears similarities to the ability to perceive emotions and can thus be viewed as a related

concept. The ability to perceive emotions (in oneself and others) is one fundamental ability in the four-branch model of EI (Mayer & Salovey, 1997, see Figure 2 on this page). Whereas the ability to perceive emotions in others resembles the health-awareness component in terms of leaders' StaffCare, the ability to perceive emotions in oneself resembles health awareness in terms of leaders' SelfCare. For example, perceiving emotions in oneself includes being aware of one's own emotions, being able to accurately differentiate among them, and knowing how to adequately express them (Mayer & Salovey, 1997).

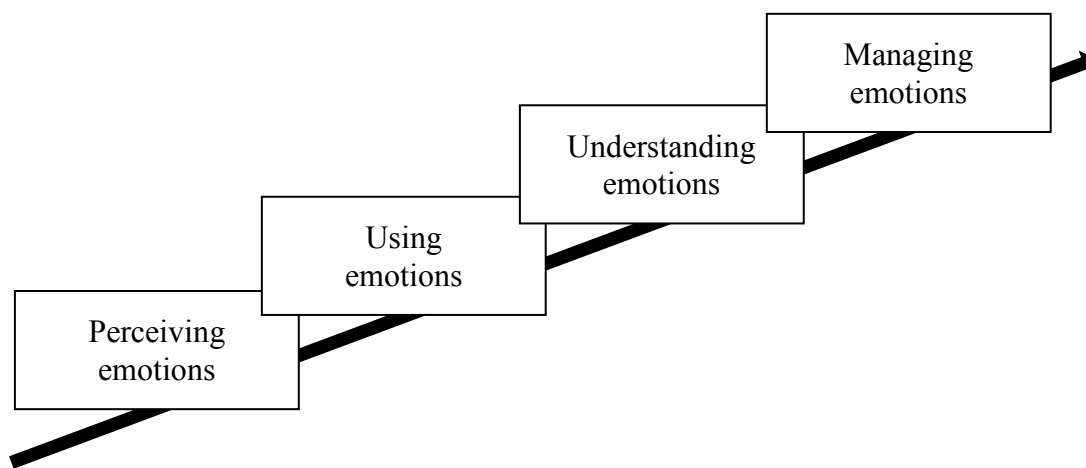


Figure 2. The four-branch model of emotional intelligence. Based on “What is emotional intelligence?” by J. D. Mayer and P. Salovey, 1997. In P. Salovey & D. J. Sluyter (Eds.), *Emotional development and emotional intelligence: Educational implications*, New York, NY: Basic Books, pp. 3–31.

Previous research has shown that EI is an important personal resource in work settings and that leaders and therefore also their employees benefit from good emotional competencies (Côté, 2014; Schütz & Koydemir, 2018). In particular, EI was found to play an important role in health and well-being (for an overview, see Schütz & Koydemir, 2018). For example, meta-analyses have shown that higher EI is associated with better subjective well-being (Sánchez-Álvarez, Extremera, & Fernández-Berrocal, 2016) and mental and physical health (Martins, Ramalho, & Morin, 2010; Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007). In addition, Schütz and Koydemir (2018) showed that emotionally intelligent individuals cope with stress more effectively and are less likely to engage in dysfunctional behaviors (e.g., alcohol and tobacco abuse).

Given the strong relations between EI and health and well-being, increasing leaders' EI appears to be a recommended aim for organizations to achieve. In general, training—an individual-focused intervention—is a method that is commonly used to develop leaders. Besides, meta-analyses have shown that managerial training programs

“can attain substantial improvements in both knowledge and skills if [...] the right development is offered to the right leaders” (Collins & Holton, 2004, p. 217; Powell & Serkan, 2010). In this context, EI training programs were found to be appropriate measures for improving health and well-being (e.g., Kotsou, Nelis, Grégoire, & Mikolajczak, 2011; Nelis et al., 2011). In this vein, in a sample of leaders, Slaski and Cartwright (2003) showed that EI training resulted in increased health and well-being.

Studies 2 and 3 of this dissertation assessed two different interventions that were aimed at promoting leaders’ health. However, whereas Study 2 concentrated on the antecedents of the first intervention, Study 3 focused on the consequences of another intervention. As mentioned previously, Study 2 investigated leaders’ personal characteristics that are supposed to make SelfCare behavior more likely to occur. In addition, in Study 3, it was examined whether a web-based EI training program would lead to improvements in EI abilities and perceived stress.

Outline of the Dissertation

The present dissertation contains three empirical studies that focus on leader health as an overall topic. Each study stands on its own and can thus be read independently. These studies are presented in Chapters 2 to 4.

As mentioned previously, leaders’ health impacts the health of their employees. Thus, Study 1 focused on the direct and indirect effects of leaders’ impaired health (i.e., exhaustion) on the health of their employees (i.e., somatic complaints). Building on crossover theory (Bakker, Westman, & van Emmerik, 2009; Westman, 2001), it was proposed that in addition to a direct crossover process because of emotional contagion, an indirect process may also occur. Leaders’ exhaustion was hypothesized to be positively related to the somatic complaints of their employees (direct effect). Referring to the HoL concept, it was further assumed that exhausted leaders would be less likely to engage in health-promoting StaffCare behavior and that employees’ somatic complaints would thus increase (indirect effect). Data for this study stemmed from a research project in which the antecedents and consequences of self- and other-directed health-promoting leadership were investigated. A two-wave online study using data from both leaders and employees was applied to test the proposed mediation model.

The following studies, Study 2 (Chapter 3) and Study 3 (Chapter 4), addressed two different types of health-promoting interventions that targeted the health of leaders.

The HoL concept proposes that leaders who take care of their own health are more likely to take care of the health of their employees. Thus, leaders' SelfCare is a means to promote leader as well as employee health. However, whereas the positive consequences of leaders' self-directed health-promoting leadership behavior are at least partially empirically grounded (e.g., Franke et al., 2015), little is known about the antecedents that facilitate SelfCare behavior. Therefore, Study 2 addressed the personal characteristics of leaders who engage in SelfCare behavior. More precisely, it was proposed that CSEs—an important resource with regard to health and well-being (see also Chang, Ferris, Johnson, Rosen, & Tan, 2012)—would be found to be positively related to leaders' SelfCare behavior and that reduced exhaustion would be found to mediate this relation. In addition, OHC was hypothesized to moderate the relation between CSEs and SelfCare behavior such that the relation would be stronger under high than under low OHC. The theoretical model was tested with a cross-sectional study in a sample of leaders. Data for this study were collected in the same research project as was Study 1.

In addition to Study 2, Study 3 evaluated a web-based training program for EI (i.e., the WEIT program). Given the strong link between EI and health, WEIT was designed to improve emotion perception and emotion regulation abilities in future leaders. The short-term and long-term effects of WEIT were evaluated and it was further tested whether WEIT would be found to lead to less perceived stress (as a precursor to leaders' ill-health). The study used a controlled experimental design (i.e., wait list control group, randomized control trial, pre- and post-training measurements) to test for training effects.

Finally, in the last chapter of this dissertation (Chapter 5), the findings of the studies presented in the previous chapters are summarized and discussed. The limitations are considered, and implications for research and practice are presented. This dissertation ends with a brief and overarching conclusion.

STUDY 1: LEADER-FOLLOWER CROSSOVER: EXHAUSTION PREDICTS SOMATIC COMPLAINTS VIA STAFFCARE BEHAVIOR

Köppe, C., Kammerhoff, J., & Schütz, A. (2018). Leader-follower crossover: Exhaustion predicts somatic complaints via StaffCare behavior. *Journal of Managerial Psychology*, 33(3), 297–310. doi:10.1108/JMP-10-2017-0367

Note: The original article can be found here (<https://doi.org/10.1108/JMP-10-2017-0367>). To meet the overall formatting requirements for this dissertation, I made the following changes to the original version of this article: 1) the citation style was changed from Harvard Business style to APA style, 2) the structured abstract from the original article is presented here as an unstructured summary, and 3) names of theories and models (e.g., health-oriented leadership concept) were not capitalized whereas names of temporal conditions (e.g., Time 1 and Time 2) were capitalized.

Summary

The purpose of this study was to examine the direct and indirect crossover effects of leaders' exhaustion on followers' somatic complaints by testing leaders' health-oriented behavior toward employees as a possible underlying mechanism. A 2-wave online study using data from different sources was conducted. In a sample of $N = 41$ leaders and $N = 65$ followers, leaders were paired with one or two followers. Leaders rated their level of exhaustion at Time 1, and followers rated their leaders' health-oriented leadership behavior (i.e., StaffCare behavior) and their own level of somatic complaints three months later (Time 2). Results provided evidence of an indirect crossover effect from leaders' exhaustion to followers' somatic complaints through StaffCare behavior. There was no direct crossover effect. Findings suggest that organizations should attend to leaders' health as a means to allow for StaffCare behavior and thus protect employee health. StaffCare behavior represents a new concept that focuses on health-related aspects of leadership. This is the first study to take an in-depth look at the question of how this leadership behavior is tied to crossover from leader exhaustion to follower health.

Introduction

Employees' health and well-being play important roles in an organization's effectiveness. In line with the happy-worker-productive-worker hypothesis, employees who experience large amounts of happiness and well-being have been found to perform better than others (Wright & Cropanzano, 2000, 2007).

Leaders can have a large impact on how employees feel at work (Nielsen et al., 2017). The link between leadership and employee health and well-being has been shown multiple times (Harms, Credé, Tynan, Leon, & Jeung, 2017; Kuoppala, Lamminpää, Liira, & Vainio, 2008; Skakon, Nielsen, Borg, & Guzman, 2010; Wegge, Shemla, & Haslam, 2014) usually by focusing on broad leadership constructs (e.g., transformational leadership). Recently, however, researchers have argued that the study of general leadership behavior may easily lead to inappropriate conclusions regarding specific outcomes (e.g., employee health or well-being; Barling, Loughlin, & Kelloway, 2002; Gurt, Schwennen, & Elke, 2011). Consequently, researchers developed domain-specific leadership concepts aimed at capturing specific leadership behaviors and practices that protect and promote employee health. The health-oriented leadership (HoL) model represents such a concept (Franke, Felfe, & Pundt, 2014). It includes a behavioral leadership component that is specifically aimed at leaders' ability to attend to or care for employees' health.

Leaders are themselves confronted with heavy job demands that may impair their own health and well-being (Hambrick, Finkelstein, & Mooney, 2005). They usually have high workloads, deal with challenging tasks, and have to fulfill a variety of different obligations (Zhang, 2013). If leaders' health and well-being are impaired, this can in turn have a negative impact on the health and well-being of their employees (for a review, see Skakon et al., 2010). The "inter-individual transmission of stress and strain" (Westman, 2001, p. 718) is called crossover. Initially, crossover processes were usually investigated as a reciprocal process between spouses (Bakker, Westman, & van Emmerik, 2009). However, there is evidence of crossover processes in the workplace, too—mainly focusing on crossover from one employee to another or to the whole team (Bakker et al., 2009; Westman, 2001). By contrast, the crossover from leaders to followers has thus far received little attention in research (for exceptions, see Huang, Wang, Wu, & You, 2016; Li, Wang, Yang, & Liu, 2016; Ten Brummelhuis, Haar, & Roche, 2014).

The literature suggests that both direct and indirect processes can explain the crossover of strain (i.e., exhaustion) between leaders and followers (Westman, 2001). Direct transfer can occur through emotional contagion (Hatfield, 1994; Johnson, 2008) and indirect transfer can occur via leaders' follower-directed leadership behavior (e.g., Huang et al., 2016; Li et al., 2016; Ten Brummelhuis et al., 2014).

In line with the job demands-resources model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli & Taris, 2014) leaders who feel exhausted and stressed have been found to have trouble performing high-quality leadership behaviors (for a review, see Barling & Cloutier, 2016). In turn, employees who are not adequately cared for are more likely to experience strain (Skakon et al., 2010).

The present study was designed to contribute to the existing literature in the following ways: First, studies concentrating on the crossover of strain from leaders to employees are still rare (Skakon et al., 2010). This study fills this gap by investigating crossover from leaders' exhaustion to employees' somatic complaints. Second, focusing on leaders' StaffCare behavior, the study also examined a mechanism that could help explain the effect from leaders' exhaustion to followers' somatic complaints. Third, by integrating a domain-specific rather than a general leadership concept that was assumed to mediate the expected relationship, the results allow for concrete conclusions regarding the improvement of employee work-related health. Fourth, StaffCare behavior represents a rather new research concept, and thus, this research contributes to a better understanding of its relevance in the workplace.

Theoretical Framework

Effects of Leaders' Exhaustion on Followers' Somatic Complaints

This study concentrated on leaders' exhaustion as a major indicator of strain that has also received much attention in crossover research (Westman, 2001). Exhaustion is considered the core component of burnout and can be characterized by feelings of depletion and fatigue (Maslach, Schaufeli, & Leiter, 2001). According to Maslach et al. (2001), prolonged socio-emotional stress is a major reason for burnout.

As leaders are exposed to a wide range of stressors (Hambrick et al., 2005), they are clearly at risk of exhaustion. For example, Lee and Ashforth (1993) found that role stress and time spent with their employees were positively related to leaders' feelings of

exhaustion. Moreover, especially interpersonal stressors (e.g., social conflicts) frequently occur in the workplace (Ohly & Schmitt, 2015). For example, leaders have to deal with conflicts between team members, may feel like they are sandwiched between their superiors and their employees, and may experience conflicts with employees, colleagues, superiors, or customers. However, social conflicts are associated with strong negative affective reactions (e.g., Ilies, Johnson, Judge, & Keeney, 2011). Thus, the emotional demands of social conflicts at work can increase leaders' feelings of exhaustion. For example, studies have shown that conflicts are positively related to both overall burnout (De Dreu, van Dierendonck, & Dijkstra, 2004) and exhaustion (e.g., Shaukat, Yousaf, & Sanders, 2017).

As leadership implies frequent social interactions between leaders and their employees (Graen & Uhl-Bien, 1995), strain, and thus exhaustion, could be transferred between the two individuals. In line with this reasoning, Skakon et al. (2010) found that leaders' impaired health and well-being was associated with employees' health-related issues.

One way for crossover to occur between leaders and followers is via emotional contagion, a direct empathetic process (Westman, 2001). Research in work contexts has suggested that when leaders and their followers interact frequently, their emotions become more similar (Johnson, 2008; Sy, Côté, & Saavedra, 2005). Westman (2001) stated that empathetic crossover effects are most likely to occur between individuals who are closely related. Leaders and followers develop unique relationships that are ideally characterized by high levels of interaction, influence, and support (leader-member exchange (LMX) theory; Graen & Uhl-Bien, 1995). Given the often close relationships between leaders and employees, we expected that leaders' feelings of exhaustion would negatively impact their followers.

The negative influence of leaders' impaired well-being in this study was operationalized with a relatively "hard" indicator: employees' somatic complaints. Somatic complaints comprise different health-related symptoms (e.g., headache or heat-sensitivity) and can be reported more concretely than overall mood, psychological well-being, satisfaction, etc. According to the allostatic load model (Ganster & Rosen, 2013), health outcomes in response to work stress can be classified as follows: psychological (e.g., fear, tension), physiological (e.g., cortisol), or psychosomatic (e.g., headache). Somatic complaints thus

represent one possible form of indicators of “manifest signs” (Franke, Felfe, et al., 2014, p. 151) of employee strain. Besides, Nixon, Mazzola, Bauer, Krueger, and Spector (2011) showed that somatic symptoms (e.g., headache, appetite loss) are related to various work stressors, thus underscoring the importance of studying somatic symptoms as health outcomes. Somatic complaints should also be attended to as they may result in “disease endpoints” (Ganster & Rosen, 2013, p. 1091) such as cardiovascular disease or diabetes. Thus, the following was hypothesized:

Hypothesis 1: Leaders’ exhaustion is positively related to followers’ somatic complaints.

Effects of Leaders’ Exhaustion on their StaffCare Behavior

Westman (2001) emphasized that, in addition to direct crossover, indirect crossover effects should also be expected. This study focused on leaders’ health-oriented leadership behavior (i.e., StaffCare behavior) as a mediator of the crossover of strain from leaders to followers.

Recent research has indicated that leaders’ impaired health and well-being affect their leadership behavior (for an overview, see Barling & Cloutier, 2016; Harms et al., 2017). For example, Byrne et al. (2014) found that “depleted leaders” (p. 5) who showed symptoms of depression, anxiety, and alcohol consumption in the workplace had trouble engaging in transformational leadership and thus were not considered “fit to lead” (Saboe, 2012). Similarly, Harms et al. (2017) found that leaders’ exhaustion was negatively related to their transformational leadership behavior.

The job demands-resources model offers a theoretical framework for explaining why leaders’ exhaustion impacts their leadership behavior. According to this theory, people who have very demanding jobs, especially in combination with poor job resources, are prone to experience burnout (Demerouti et al., 2001; Schaufeli & Taris, 2014). In terms of exhaustion, Bakker, Demerouti, Taris, Schaufeli, and Schreurs (2003) found that the negative effect of job demands on exhaustion increases when job resources are low. The experience of burnout (i.e., exhaustion), however, can diminish positive outcomes (Schaufeli & Taris, 2014) such as the ability to engage in high-quality leadership behaviors because high-quality leadership behavior (e.g., transformational leadership) may require resources that exhausted leaders lack (Byrne et al., 2014). In addition, a lack of resources is associated with withdrawal behavior (i.e., cynicism; Demerouti et al.,

2001). Thus, leaders who lack resources may be very motivated to protect themselves and the resources they have left (Schaufeli & Taris, 2014).

In contrast to the broad concept of transformational leadership, this study scrutinized a more specific health-related leadership concept. The HoL concept distinguishes between self-directed health-promoting leadership (i.e., SelfCare) and leaders' follower-directed health-promoting leadership (i.e., StaffCare). StaffCare is aimed at providing support and health-promoting working conditions for employees (Franke, Felfe, et al., 2014). It comprises three components—awareness, value, and behavior—with leader behavior being of special importance for employee health and well-being. In comparison with awareness and value, StaffCare behavior was found to be the strongest predictor of a wide range of health outcomes such as irritation or health complaints (Franke, Felfe, et al., 2014). Therefore, the present study used the construct of StaffCare behavior to capture leaders' health-oriented behavior toward their employees.

However, StaffCare behavior requires leaders to invest a great deal of time and effort. The concept summarizes leaders' health-relevant actions that are aimed at protecting and promoting follower health (Franke, Felfe, et al., 2014). For example, leaders should inform their employees about health and safety issues on a regular basis, improve working conditions, and foster a positive team climate. Leaders who suffer from exhaustion are thus not expected to have sufficient resources to perform such health-relevant actions in an adequate manner. Thus, the following hypothesis was proposed:

Hypothesis 2: Leaders' exhaustion is negatively related to their follower-rated StaffCare behavior.

Effects of StaffCare Behavior on Followers' Somatic Complaints

Harms et al. (2017) summarized, "leaders have the potential to be either a buffer against work stressors [...] or a major source of stress" (p. 180) for their employees. Many studies have shown that supportive leader behavior can improve employee health and well-being; by contrast, abusive leader behaviors were found to be associated with low levels of health and well-being in employees (Harms et al., 2017; Kuoppala et al., 2008; Skakon et al., 2010; Sparks, Faragher, & Cooper, 2001). Along these lines, a recent meta-analysis showed that transformational leadership was negatively related and abusive supervision (Tepper, 2000) was positively related to both stress and overall burnout in followers (Harms et al., 2017).

StaffCare behavior was found to have unique effects on different health outcomes (e.g., state of health, irritation, and health complaints) beyond transformational leadership (Franke, Felfe, et al., 2014). The present study focused on employees' somatic complaints as the health outcome of interest. Whereas a great deal of previous research has addressed the impact of leadership behavior on employees' psychological well-being (Skakon et al., 2010), somatic symptoms have been studied less frequently. However, recent research has shown that leadership behavior can be associated with employees' physical health symptoms (Sparks et al., 2001), and Franke, Felfe, et al. (2014) found that employees reported fewer health complaints as a result of leaders' StaffCare behavior.

However, there are different possible explanations for why StaffCare behavior may reduce employee strain. According to the pathway model by Wegge et al. (2014), StaffCare behavior affects employee health through three avenues: 1) system- or team-focused actions, 2) climate control and identity management, and 3) modeling. First, leaders' health-related actions can improve employees' working environments and thus have the potential to reduce strain. Second, leaders who engage in health-oriented leadership aim to reduce follower strain by building a collective identity and a health-supporting working climate. Third, leaders who take care of their own health can function as role models for their employees and thus encourage employees to address their own health issues. The following hypothesis was therefore proposed:

Hypothesis 3: Follower-rated StaffCare behavior is negatively related to followers' somatic complaints.

StaffCare Behavior as a Mediator of the Relation between Leaders' Exhaustion and Followers' Somatic Complaints

Based on the previous theoretical and empirical assumptions, an indirect effect of leaders' exhaustion on followers' somatic complaints through a reduction in leaders' StaffCare behavior was hypothesized (see Figure 1).

In addition to direct crossover, Westman (2001) proposed an indirect process in explaining how feelings of impaired health and well-being can be transferred between two people. She referred to interpersonal factors such as coping strategies, social undermining, or social support as possible mediating mechanisms. On the basis of the conceptual model by Westman (2001), Ten Brummelhuis et al. (2014) defined the processes by which these mechanisms take place as behavioral crossover processes.

Social support can be linked to aspects of StaffCare behavior. According to House (1981), there are four types of social support: informational, instrumental, emotional, and appraisal support. In fact, leaders' StaffCare behavior implies that they provide their followers with adequate support regarding health-related issues: They inform their employees about safety standards and measures (informational), provide resources to improve working conditions (instrumental), create and support a positive team climate (emotional), and pay special attention to health-related problems (appraisal). Exhausted leaders, by contrast, are expected to lack the resources to adequately support their followers, and this should in turn lead to negative health-related outcomes, in this case, increased somatic complaints.

Studies have supported a behavioral crossover process with compromised leadership behavior mediating the crossover of strain from leaders to followers. For example, Ten Brummelhuis et al. (2014) found that leader burnout was negatively related to leaders' supportive behavior, which in turn was associated with increased burnout in followers. Conversely, Li et al. (2016) showed that leaders' psychological distress affected followers' psychological distress through abusive supervision. Thus, the following was hypothesized:

Hypothesis 4: Leaders' exhaustion affects followers' somatic complaints via StaffCare behavior such that the more exhausted leaders are, the less StaffCare behavior they engage in, which in turn should subsequently lead to increases in the somatic complaints of their followers.

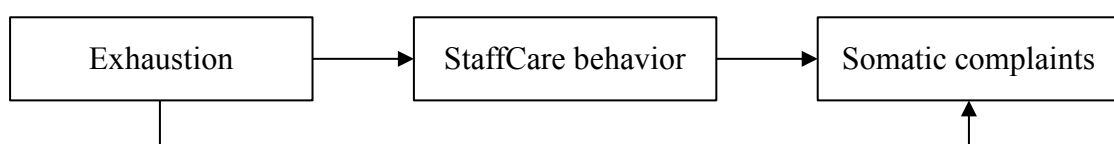


Figure 1. Theoretical model of the relation between leaders' exhaustion and followers' somatic complaints.

Methods

Procedure and Sample

Data for this study stemmed from a larger research project on the antecedents (i.e., leader personality, health, work-related attitudes, and situational conditions) and effects (i.e., follower health, performance, motivation, and work relationships) of health-oriented leadership. Whereas data for the overall research project were collected on a rather

broad level, in the current study, we explicitly concentrated on the antecedents and effects of health-oriented leadership concerning leader and follower health (i.e., exhaustion and somatic complaints). Data were collected in Germany from leaders and their employees via questionnaires in two waves. The first wave began in May 2016 (Time 1) and the second three months later in September (Time 2). The questionnaires were administered online using the host site unipark (unipark.de).

In the first wave, data were collected from leaders only. Leaders were recruited via mailing lists and snowball sampling. The first and third authors contacted members of their professional networks who were in leadership positions. These leaders were asked to forward the link to the study to other leaders. Leaders completed questionnaires on leadership, health, personality, work-related attitudes, and situational conditions. Three months after they completed the questionnaire at Time 1, leaders automatically received three emails, each containing a separate study link. Leaders were asked to forward two of these emails to two of their employees (one each) and to use the third one to complete follow-up questions themselves. All participants were assured that the responses would not be shared between leaders and followers and that they would remain anonymous. Employees responded to questionnaires on leadership, health, and performance. The present study used data on leaders' self-reported exhaustion at Time 1 and follower ratings of StaffCare behavior and somatic complaints at Time 2.

During the first wave, 177 leaders completed the survey and entered their email address to receive the links to the questionnaires to be sent to their employees three months later. Twenty of these participants had to be excluded from the analysis because they reported that they did not hold a leadership position, thus leading to a final sample of 157 leaders after wave 1. In the second wave, 65 followers participated. For 17 leaders, one follower filled out a questionnaire, and for 24 leaders, two followers filled out questionnaires, leading to 41 leaders paired with one or two followers. Thus, the whole sample was comprised of a total of 106 respondents.

Participants in leadership positions were 48 years of age on average with a range from 32 to 64 years ($SD = 7.69$); 34% were female. They had worked in their current organization for about 17.0 years ($SD = 9.52$), and their average work week consisted of 44.5 hours, ranging from 24 to 65 ($SD = 9.00$, mode = 45). The leaders came from various organizational backgrounds, most of them working in the manufacturing or

merchandising industries. Moreover, the leaders belonged to different work departments (e.g., finance, account management, human resources, and administration).

The followers were 41 years old on average, ranging from 23 to 61 ($SD = 10.06$); 60% were female. On average they had worked for their present company for 12.5 years ($SD = 9.50$) and worked 37.2 hours per week, ranging from 6 to 55 ($SD = 9.74$, mode = 40).

Measures

Exhaustion. The Oldenburg Burnout Inventory (OLBI) was used to assess leader exhaustion (Demerouti & Bakker, 2008; Demerouti & Nachreiner, 1998) in wave 1 of the online survey. The scale consists of eight items (four reverse coded). A four-point Likert scale was used, ranging from 1 = “*not at all*” to 4 = “*completely*.” Cronbach’s alpha was .83. A sample item is “After my work, I regularly feel worn out and weary.”

StaffCare behavior. For the assessment of leaders’ StaffCare behavior, the Health-oriented Leadership questionnaire (Franke, Felfe, et al., 2014) was used. It was administered to the followers in wave 2 of the online survey. The scale consists of seven items employees responded to on a five-point Likert-type scale (1 = “*not at all true*”, 5 = “*completely true*”). Cronbach’s alpha was .83. A sample item is “My supervisor asks me to inform him/her about health risks at my workplace.”

Somatic complaints. The assessment of followers’ somatic complaints was done via self-ratings during wave 2 with the somatic symptoms subscale from the General Health Questionnaire (GHQ-28) by Goldberg and Hillier (1979). The present study employed the translated version used by Klaiberg, Schumacher, and Brähler (2004). The scale consists of seven items (one reverse coded). A four-point frequency scale was used, ranging from 1 = “*not at all*” to 4 = “*much more than usual*.” Cronbach’s alpha was .77. A sample item is “In recent weeks, did you suffer from any headaches?”

Control Variables

Leader behavior may differ in accordance with leaders’ gender and experience (i.e., age and tenure). So far, results concerning the relations between leader behavior, gender, and tenure have been mixed with some studies finding effects of gender (e.g., van Engen & Willemssen, 2004) and experience (e.g., Oshagbemi, 2004) in some settings or for specific leadership styles but not across the board. To control for possible confounds,

leaders' gender, age, and tenure in their current company were included as control variables into the preliminary correlational analyses. Furthermore, to account for possible differences due to the type of relationship between leaders and employees, we included how long the leader and employee had been working together as well as the number of employees reporting to each leader.

Data Analysis

SPSS (version 23) was used for all statistical analyses. To conduct the mediation analysis, we used Model 4 from the PROCESS Macro (Hayes, 2013). The mediation analysis was computed on *z*-standardized values for all variables. Bias-corrected bootstrap confidence intervals were generated with 10,000 bootstrapped samples. One follower had extreme values in the General Health Questionnaire and another follower was identified as an outlier due to his/her response pattern on several scales and was excluded from further analyses, reducing the sample size to 39 leaders with completed questionnaires from one or two employees.

Results

Preliminary Analyses

In 24 cases, two employees per leader responded to the study survey. Paired *t*-tests showed that these pairs of employees did not differ significantly from each other in their appraisals of their leader. Thus, the average rating of these two ratings was used in further analyses.

Little's (1988) test for whether data were missing "completely at random" was conducted; data were missing at a low rate (1.5 to 6.3%), and the test showed no significant results. Thus, the missing values were treated as missing completely at random, meaning that they could safely be disregarded in further calculations (Graham, 2009).

Tests of Hypotheses

Table 1 shows the means, standard deviations, and correlations of the variables used in this study. The correlations of the variables in the mediation model (e.g., exhaustion, StaffCare behavior, and somatic complaints) were significant and were either positively or negatively inter-related in accordance with the proposed hypotheses. The

control variables were not significantly correlated with either the mediator or the outcome variable; thus, the control variables were not included in further analyses.

Table 2 shows the results of the mediation analysis. There was no direct effect of leaders' exhaustion on employees' somatic complaints ($c' = -.11, p = .325$). Hypothesis 1 was thus not supported by the findings.

Supporting Hypothesis 2, the extent of leaders' exhaustion negatively and significantly affected StaffCare behavior rated by their followers ($a = -.28, p = .033$).

In support of Hypothesis 3, StaffCare behavior in turn had a negative effect on employees' somatic problems ($b = -.34, p = .021$), that is, somatic complaints were reduced. See Figure 2 for an overview of the previous results.

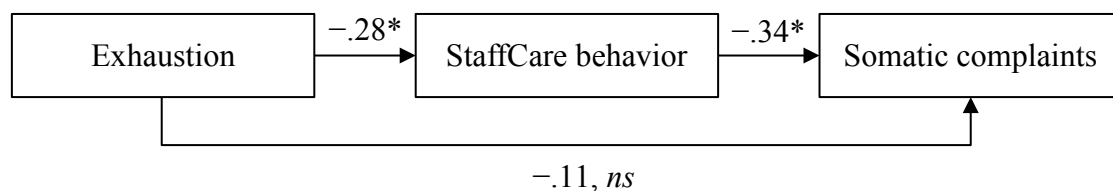


Figure 2. Empirical model of the relation between leaders' exhaustion and followers' somatic complaints. $N = 39$ pairs. Two pairs were deleted due to missing data. Standardized regression coefficients are represented in the model.

* $p < .05$.

The results were in line with Hypothesis 4 in showing that leaders' exhaustion indirectly influenced employees' somatic complaints through employees' assessments of leaders' StaffCare behavior. Through a bias-corrected bootstrap confidence interval with 10,000 bootstrapped samples ($ab = .09, 95\% \text{ CI } [.010, .265]$), an indirect effect was found.

Discussion

The aim of this study was to investigate the direct and indirect crossover of strain from leaders to their followers with a 2-wave research design. Specifically, the study investigated how leaders' feelings of exhaustion at Time 1 affected followers' somatic complaints at Time 2. Leaders who were more exhausted were hypothesized to have followers who would report more somatic complaints (Hypothesis 1). The study further looked at why this effect may occur. Leaders' exhaustion was expected to lead to reduced

Table 1
Means, Standard Deviations, and Correlations of the Study Variables

Variable	M	SD	1	2	3	4	5	6	7
1. Gender ^a	1.31	0.47							
2. Age ^b	47.77	7.74	-.01						
3. Tenure ^{c,d}	16.55	9.00	-.30	.57**					
4. Span of control	42.79	97.39	-.01	.13	-.05				
5. Years working together ^e	6.24	4.92	-.20	.37*	.40*	-.15			
6. Exhaustion	2.13	0.53	.02	-.17	-.15	.06	-.04		
7. StaffCare behavior ^f	3.80	0.78	.08	-.17	-.12	-.09	-.22	-.34*	
8. Somatic complaints ^g	1.81	0.43	.06	.16	-.03	.05	.02	-.03	-.34*

Note. *N* = 39. Pairwise deletion. Variables 1 to 4 and 6 were self-rated by leaders.

^aGender was coded 1 = male, 2 = female. ^bAge was coded in years. ^c_{*n* = 55}, ^d_{*n* = 61}, ^e_{*n* = 58}, ^f_{*n* = 38}, ^gFollowers' assessments; *M* and *SD* based on

p* < .05, two-tailed. *p* < .01.

Table 2

Model Coefficients for the Mediation Analysis

		StaffCare behavior ^a			R^2	$F(df)$	p -value
		Coeff.	SE	p			
Exhaustion	a	-.277	.125	.033	.117	4.921(1, 37)	.033
StaffCare behavior ^a		–	–	–			
Constant	i_1	.076	.137	.583			

		Somatic complaints ^a			R^2	$F(df)$	p -value
		Coeff.	SE	p			
Exhaustion	c'	-.114	.114	.325	.140	2.933(2, 36)	.066
StaffCare behavior ^a	b	-.342	.142	.021			
Constant	i_2	-.107	.118	.371			

Note. $N = 39$ pairs. Two pairs were deleted due to missing data. Variables were standardized prior to analyses.

^aFollowers' assessments.

StaffCare behavior (Hypothesis 2), which in turn was expected to increase followers' somatic complaints (Hypothesis 3). Based on this reasoning, StaffCare behavior was examined as a mediator and possible behavioral mechanism in the crossover of strain from leaders to followers (Hypothesis 4).

Results confirmed a negative relation between leaders' exhaustion and their reduced StaffCare behavior, supporting Hypothesis 2. This result is in line with current research that has shown that leaders' health and well-being affect their own leadership behavior (Barling & Cloutier, 2016; Harms et al., 2017).

In support of Hypothesis 3, the results showed a negative relation between leaders' StaffCare behavior and followers' somatic complaints. There is previous research demonstrating that overall leadership is associated with employee health and well-being (see also Harms et al., 2017; Skakon et al., 2010). However, StaffCare behavior represents a rather new and health-specific leadership construct that has hardly been examined with respect to its effects on employee health and thus adds to existing research.

The results also showed an indirect effect of leaders' exhaustion on followers' somatic complaints through reduced StaffCare behavior, providing support for Hypothesis 4. Although research focusing on leadership behavior as a mediating mechanism in a crossover of strain from leaders to followers has been rare, some studies have provided evidence that such an indirect crossover process exists (e.g., Li et al., 2016; Ten Brummelhuis et al., 2014). However, previous studies have mainly concentrated on either broad (i.e., supportive behavior; Ten Brummelhuis et al., 2014) or destructive leadership behavior (i.e., abusive supervision; Li et al., 2016) that differs from the health-specific leadership behaviors considered in the present study. More specifically, the present study showed that exhausted leaders were less able than others to adequately care for their employees' health—and this in turn predicted higher reports of somatic complaints such as suffering from headaches or heat-sensitivity.

Whereas the findings confirmed an indirect crossover effect of strain through leadership behavior, they did not show a direct effect. Leaders' feelings of exhaustion at Time 1 did not predict followers' somatic complaints at Time 2, thus failing to support Hypothesis 1. Previous research has demonstrated a crossover effect of stress and strain in the workplace (Bakker et al., 2009). However, such a direct crossover effect has mainly been found among colleagues and within teams (e.g., Bakker, van Emmerik, & Euwema, 2006). Furthermore, outcome variables have varied widely (e.g., mood, burnout, depression, and physical illness; Westman, 2001). Direct dyadic crossover processes of strain and especially exhaustion between leaders and followers have been studied less frequently. Finally, results have been rather mixed. For example, Westman and Etzion (1999) found a direct crossover of job-induced tension between principals and teachers in a cross-sectional study but did not find a direct effect of burnout. Hakanen, Perhoniemi, and Bakker (2014) focused on exhaustion of both leaders and followers and failed to find a direct crossover in their sample of dentists and dental nurses. Instead, they showed that direct crossover occurred only under certain conditions (i.e., frequent and friendly contact, mutual feedback exchanges). The heterogeneity of findings may indicate that direct crossover processes are less ubiquitous than previously thought or that—at least in the present study—the mediating role of StaffCare is so important that it captures most of the impact that leader exhaustion may have.

However, there may be further explanations for why a direct crossover effect of strain from leaders to their followers was not found in the present study. First, the

transmission of strain in previous research usually referred to the same form of strain in both individuals involved. In the present study, by contrast, we focused on different aspects of strain: exhaustion in the leader and somatic complaints in the follower. Thus, these different forms of strain can account for why we did not observe direct contagion here.

Second, previous research has also concentrated primarily on crossover concerning mostly the affective states of the parties involved (Westman, 2001). Thus, crossover in these cases referred to a form of emotional contagion in which, for example, one individual's affective exhaustion led to feelings of exhaustion in another individual. While exhaustion certainly has a strong affective component, we chose to work with a different conceptualization that defines exhaustion as "intensive physical, affective and cognitive strain" (Demerouti et al., 2001, p. 500). Moreover, with regard to the outcome variable in the followers, likewise, we did not focus on emotional but instead on somatic complaints. Our findings thus point to processes that go beyond mere emotional contagion.

Third, Westman (2001) explained that direct empathetic crossover effects "appear between closely related partners" (p. 730). Although relationships between leaders and followers are characterized by mutual exchange, they may differ in closeness (Graen & Uhl-Bien, 1995). Thus, followers might not necessarily know how their leaders feel—which would make crossover effects less likely to occur. In this line of reasoning, Barling and Cloutier (2016) suggested that followers might hold certain implicit leadership theories about their leaders' health. They may "romanticize" their leaders (Meindl, Ehrlich, & Dukerich, 1985) and see them as strong, competent, and healthy. Leaders, in turn, may support such theories by behaving accordingly in order to "save face". Whereas direct access to leader feelings may thus be difficult, followers can notice how leaders' impaired well-being is reflected in their actual behavior (i.e., reduced StaffCare), which in turn could impact their own health and well-being.

Fourth, a direct effect in the present study may exist under certain circumstances: Frequency of contact (Hakanen et al., 2014) or relationship quality (Westman, 2001) may moderate the crossover of strain from leaders to followers, such that crossover will be strongest in high-quality relationships with frequent contact—a finding that is again in line with the argument of emotional contagion as outlined above.

Limitations of the Present Study and Future Research

This study contains several limitations that need to be mentioned so that the results can be interpreted properly. First, some limitations are related to the sample. The sample size of this study was rather small. The overall sample size of leaders and their employees who participated was 106, resulting in 41 leaders who were rated by one or two followers. Different sources (leaders and their employees) were used, thus avoiding single-source bias at the expense of an otherwise larger sample size. Also, each leader individually chose the employees to whom they forwarded the required study links at Time 2, making selection bias more possible. Thus, leaders could have chosen employees who would rate their leadership behavior positively or employees whom they considered happy, healthy, and fit. In line with this reasoning, the mean values of employees' somatic complaints were rather low in comparison with other studies (Franke, Felfe, et al., 2014). Future research should therefore replicate these findings in a larger research sample.

Second, some limitations are related to the study design. Other researchers have called for more longitudinal studies in crossover research (Bakker et al., 2009). The current study attempts to answer this call with a 2-wave study design that comprised a time lag of three months. However, three months may be too short to detect direct crossover processes of strain from one person to another. Future research should therefore investigate crossover effects in longitudinal studies with two or more measurement points within a broader time frame (Wang et al., 2017). Also, reciprocal crossover effects between followers and leaders could not be examined in the present study. Even though previous studies did not find effects from followers' exhaustion at Time 1 to leaders' exhaustion eight months later (Wirtz, Rigotti, Otto, & Loeb, 2017), future studies may help to clarify whether and when there would be a reciprocal crossover of strain between leaders and followers.

Third, in this study, only self-reports of leader and follower health were assessed. Future research would benefit from the inclusion of objective health measures such as blood pressure or skin conductance as well as information about followers' health at different measurement points. This will help better establish the link between leader behavior and follower health.

Practical Implications

The results show that exhausted leaders engage less in StaffCare behavior, which in turn increases employees' somatic complaints. Given the negative impact of leaders' reduced StaffCare behavior on employees' somatic complaints, organizations should offer training opportunities for leaders in order to improve their health-supporting leadership behavior. However, leaders' own health influences the way they care about their employees. Current studies have already called for interventions targeting leaders' health (e.g., Barling & Cloutier, 2016; Lanaj, Johnson, & Lee, 2016; Zwingmann, Wolf, & Richter, 2016).

In addition to StaffCare, the HoL concept introduces the idea of SelfCare, which concerns leaders' protection and promotion of their own health and which has been shown to have positive effects on different health outcomes (Franke, Ducki, & Felfe, 2014). Consequently, SelfCare helps to protect and build up leaders' resources—and thus allows them to perform StaffCare behavior. Thus, according to the HoL concept, SelfCare represents the basis of leaders' follower-oriented StaffCare behavior, which in turn positively influences employees' health and well-being (Franke, Felfe, et al., 2014). However, engaging in SelfCare is not enough! Franke, Felfe, et al. (2014) found that SelfCare and StaffCare are related to different health-relevant characteristics: SelfCare, for example, showed stronger relations to individual work behavior (e.g., overcommitment) than to the task and work context (e.g., task contents, work climate).

SelfCare and StaffCare may both be improved through training (group-based) or coaching (individual-based). Researchers have suggested that both issues (i.e., leaders' SelfCare and StaffCare) may be addressed (Franke, Vincent, & Felfe, 2011)—of course taking into account leaders' time constraints. All in all, organizations should provide the resources that are needed to foster leaders' SelfCare in order to reduce leaders' exhaustion and thus employees' somatic complaints.

Conclusion

Healthy employees perform better than others (e.g., Wright & Cropanzano, 2000; Wright & Cropanzano, 2007). But employee health also depends on how leaders feel at work (Skakon et al., 2010). This study investigated the direct and indirect crossover processes of strain from leaders to followers in a 2-wave study using multiple sources. Leaders' exhaustion was expected to predict followers' somatic complaints three months

later. Further, we hypothesized that leaders' StaffCare behavior would mediate this relation.

The results supported an indirect crossover effect of leaders' exhaustion on followers' somatic complaints through reduced StaffCare behavior. Exhausted leaders are apparently less able to care about their followers' health, and this in turn leads to negative health effects in their followers. Interventions targeting leader health are therefore very important for both leaders and followers.

A direct crossover effect was not found. Future research should therefore test these findings in a larger research sample and take potential moderators into consideration. This can help to clarify the conditions under which a direct crossover effect may occur.

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STUDY 2: HEALTHY LEADERS: CORE SELF-EVALUATIONS AFFECT LEADERS' HEALTH BEHAVIOR THROUGH REDUCED EXHAUSTION

Köppe, C., & Schütz, A. (2019). Healthy leaders: Core self-evaluations affect leaders' health behavior through reduced exhaustion. *Frontiers in Psychology, 10*(998), 1–10. doi:10.3389/fpsyg.2019.00998

Note: The original article can be found here (<https://www.frontiersin.org/articles/10.3389/fpsyg.2019.00998/full>). To meet the overall formatting requirements for this dissertation, I made the following changes to the original version of this article: 1) the APA citation style was applied, 2) “Theoretical Framework” was included as an additional heading, and 3) the sections Ethics Statement, Author Contributions, and Conflict of Interest Statement were not included in this dissertation.

Summary

Leaders' self-directed health behavior (i.e., SelfCare behavior) plays an important role in the health and well-being of both leaders and employees but has been neglected in research so far. This study was aimed at investigating the antecedents of SelfCare behavior in terms of the personal characteristics of the leaders. In a sample of 150 (98 male, 52 female) German leaders from a wide range of organizations, we examined the direct and indirect effects of core self-evaluations (i.e., CSEs) on leaders' SelfCare behavior. We predicted that CSEs would be positively related to SelfCare behavior with reduced exhaustion as a mediator, and organizational health climate (i.e., OHC) as a moderator of this relationship. Results showed that CSEs were positively related to SelfCare behavior and that the reduced exhaustion mediated this relationship. There was no evidence that OHC moderated the positive relationship between CSEs and SelfCare behavior. Theoretical and practical implications of the study are discussed.

Introduction

Leadership positions are characterized by high job demands. For example, leaders often have to deal with a large workload, time pressure, or role conflicts (Ohm & Strohm, 2001; Zimmer, Hentrich, Bockhoff, Wissing, & Petermann, 2015). According to the job demands-resources model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli & Taris, 2014), high job demands predict poor health. Indeed, leaders who suffer from impaired health are less able to care for their employees. In this vein, Harms, Credé, Tynan, Leon, and Jeung (2017) showed that leaders engage less in high-quality leadership, such as transformational leadership (Bass, 1985; Burns, 1978), when they feel exhausted and stressed. This potential lack of transformational leadership is consequential for their work environment because this leadership style has been found to have a positive influence on employees' work-related well-being (for a review, see Skakon, Nielsen, Borg, & Guzman, 2010).

Given that leaders', as well as employees', health is constantly at risk, researchers have called for interventions that can empower leaders when dealing with the challenges of their role and their own health (Harms et al., 2017; Zwingmann, Wolf, & Richter, 2016). The health-oriented leadership (HoL) approach by Franke, Felfe, and Pundt (2014) introduces a concept that focuses on leaders' self-directed health-promoting behavior (i.e., SelfCare). SelfCare is aimed at protecting or promoting one's own health by "dealing appropriately with job demands and fostering health-promoting working conditions" (p. 142) and should thus be the focus of health-promoting interventions for leaders. SelfCare is understood as the extent to which leaders are aware of their own health, value its importance, and behave accordingly (Franke et al., 2014). Although all three components are supposed to be relevant aspects of the SelfCare concept, the behavioral component seems to be particularly consequential because it reflects the extent to which leaders actually engage in health-relevant actions (e.g., seeking social support, balancing work, and leisure time).

To date, research on the SelfCare behavior of leaders has been almost nonexistent. As an exception, Franke, Ducki, and Felfe (2015) illustrated that leaders' SelfCare is associated with better health, less irritation, and lower levels of work-family conflicts, underlining its effectiveness. But studies focusing on the antecedents of the SelfCare behavior of leaders have been rare, even though investigating the factors that may impact leaders' health behavior may help to promote such behavior. In searching for antecedents,

Booth-Kewley and Vickers (1994) found that “personality is a reliable predictor of health behavior” (p. 281). Self-efficacy in particular has received a lot of attention in research and was found to play a pivotal role in health behavior (e.g., Luszczynska & Schwarzer, 2003). Closely intertwined with self-efficacy are locus of control and self-esteem. Studies have found that both variables are closely related to positive health behaviors (e.g., Booth-Kewley & Vickers, 1994; Christian, Bradley, Wallace, & Burke, 2009). Moreover, several studies have focused on the Big Five as predictors of health behavior (e.g., Bogg & Roberts, 2004; Booth-Kewley & Vickers, 1994). Neuroticism has been intensively studied and was found to be associated with risky health behaviors such as smoking or alcohol abuse (e.g., Vollrath & Torgersen, 2002). Self-efficacy, locus of control, self-esteem, and neuroticism represent the core facets of the higher order factor CSEs. Although each core trait can be linked to health behavior, CSEs as a whole seems to have special relevance with respect to leadership behavior (Resick, Whitman, Weingarden, & Hiller, 2009). Still it is not yet known how that higher order factor is related to leaders’ self-directed health behavior.

Personality is a relevant predictor of behavior, but its effects cannot be observed in every situation. Interactionist approaches (see Mischel & Shoda, 1995) and the more recent elaboration of trait activation theory (TAT; Tett & Burnett, 2003) suggest that personality traits have to be activated by situational cues in order to trigger situation-specific behavior. According to TAT, situational cues occur on three different levels: task, social, and organizational. In the workplace, organizational cues are important because they indicate which behaviors are accepted by the organization and which are not. OHC is a prominent example of a powerful organizational cue and should be relevant to individuals’ health behavior in organizations.

In this study, we investigated the direct as well as indirect effects of CSEs on leaders’ SelfCare behavior. Furthermore, we examined the moderating role of OHC in the relationship between CSEs and SelfCare behavior. We tested this theoretical model (see Figure 1) in a sample of leaders. In doing so, we expected this study to contribute to the existing literature in two ways: First, concentrating on the personal antecedents (i.e., CSEs) of leaders’ SelfCare behavior is important for preventing illness and promoting health behavior in leaders, which in turn can affect the health and well-being of their employees. Second, because we also considered situational factors in the

personality-health behavior link, this study can offer a starting point for the development of organizational measures.

Theoretical Framework

Effects of CSEs on SelfCare Behavior

Core self-evaluations represent a broad higher order personality trait that is based on “the conceptual and empirical overlap of four dispositional traits: neuroticism, self-esteem, self-efficacy, and internal locus of control” (Judge & Bono, 2001; Judge, Erez, Bono, & Thoresen, 2003; Stumpp, Muck, Hülshager, Judge, & Maier, 2010, p. 675). CSEs reflect “a basic, fundamental appraisal of one’s worthiness, effectiveness, and capability as a person” (Judge et al., 2003, p. 304). Thus, people with high CSEs see themselves in a more positive light than those with low CSEs. These fundamental appraisals about oneself influence how people behave in specific situations and how motivated they are to do so consistently (see Hu, Wang, Liden, & Sun, 2012).

In terms of health behaviors, the four core traits play a crucial role in how people care for themselves. The relation between each of those specific traits and health behavior has been studied: Self-esteem and self-efficacy both represent self-evaluative tendencies (Lanaj, Chang, & Johnson, 2012; Schütz, 2001). Whereas self-esteem is defined as the overall evaluation of one’s own worth, self-efficacy refers to one’s perceived ability to cope with difficulties and to perform well in challenging situations (Bandura, 1977; Judge & Bono, 2001). People with high self-esteem report being happier, tend to experience greater control, and have better coping abilities (Baumeister, Campbell, Krueger, & Vohs, 2003). Besides, people in general tend to protect and enhance their self-esteem in order to feel good about themselves (Baumeister, 2010; Schütz & Baumeister, 2017). In line with this, Lanaj et al. (2012) found a positive association between self-esteem and promotion focus, thus illustrating its motivational background (see also Schütz & DePaulo, 1996). From this perspective, people with positive self-views tend to value themselves and engage in health-oriented behaviors, as they usually work toward positive outcomes such as happiness, control, or health. There is a lot of research in which health-relevant behaviors (e.g., smoking or alcohol and drug abuse) have been studied in relation to self-esteem (e.g., McGee & Williams, 2000). Although the findings are somewhat mixed, several studies have reported a positive relationship between congruent positive

self-evaluations and a general tendency to engage in positive health behaviors (e.g., Schröder-Abé, Rudolph, & Schütz, 2007).

Self-efficacy is embedded in various theories on health behavior such as the transtheoretical model (Prochaska & DiClemente, 1983) or the health action process approach (Schwarzer, 1992). Both theories suggest that self-efficacy is a central factor in promoting health behavior. If people believe they are capable of performing a certain health behavior, they are more likely to start it and keep it up (Schwarzer & Fuchs, 1995). In this vein, in sample of 418 young women, Luszczynska and Schwarzer (2003) found that self-efficacy rather than risk perception was the best predictor of the intention to perform preventive behaviors (i.e., breast self-examination).

Locus of control has also been applied to predict health behaviors. Locus of control refers to the degree to which a person believes that the consequences of his or her behavior are due to internal (e.g., ability or other personal characteristics) or external (e.g., luck or fate) factors (Rotter, 1966). Besides, a study showed that locus of control can be domain-specific and applied to health beliefs (Wallston, Strudler Wallston, & DeVellis, 1978). The idea behind this refers to the general assumption that “individuals who believe that they have control over their health [internal health locus of control] will be more likely to engage in health-enhancing behaviors” (Norman, Bennett, Smith, & Murphy, 1998, p. 172, authors’ supplement). In line with this, Norman et al. (1998) showed that people who have a strong internal health locus of control performed a higher number of health behaviors (e.g., exercising three times a week, eating fruits at least 6 days a week). Moreover, Christian et al. (2009) found that locus of control was positively related to safety-related behaviors (in terms of safety compliance and safety participation) in a workplace setting. In their study, the authors also included other personality variables such as neuroticism. Neuroticism, or emotional instability, means that individuals experience more negative than positive emotions and that they are prone to mood swings (Ostendorf & Angleitner, 2004). People high in neuroticism are more likely to engage in harmful health practices and less likely to show health-promoting behavior than others. For example, Booth-Kewley and Vickers (1994) showed that people with high scores in neuroticism reported less wellness-oriented behavior (i.e., exercising, eating healthy food), less accident-control behavior (i.e., fixing broken things, having a first aid kit), and more traffic-related risk-taking (i.e., speeding, not obeying traffic rules) than others.

Along these lines, Christian et al. (2009) found that locus of control was negatively related and neuroticism was positively related to accidents and injuries.

Although each core trait can be linked to health-oriented behaviors, a higher order factor comprised of CSEs has not yet been studied and especially not with a sample of leaders. Ferris et al. (2011) argued that the reason why CSEs affect a broad range of outcomes (i.e., job satisfaction, work commitment, or stress) can be attributed to an overall approach/avoidance framework, thus suggesting that, as opposed to low-CSE individuals, people with high levels of CSEs have an overall approach tendency (for a similar argument see Higgins, Roney, Crowe, & Hymes, 1994; Tice, 1991). It can be assumed that high-CSE leaders tend to view themselves as worthy, competent, capable, and in control of their own health, all of which motivate them to actively engage in self-directed health behaviors. In line with this reasoning, meta-analytic results revealed that CSEs are significantly related to intrinsically motivated behavior (Chang, Ferris, Johnson, Rosen, & Tan, 2012). In addition, Kammeyer-Mueller, Judge, and Scott (2009) found that high-CSE individuals engaged more in problem-solving coping and less in avoidance coping. It can be argued that problem-solving coping bears a resemblance to SelfCare behavior. Coping as such refers to a person's intention to engage in certain actions that are aimed at reducing threat or harm in a given situation (Lazarus & Folkman, 1984). Problem-focused coping in particular refers to a kind of coping that is targeted toward changing the stressful situation or the source of stress. Thus, people who use problem-solving coping may, for example, try to alter their working conditions, strategies, or time schedules. Likewise, SelfCare behavior means promoting health by enhancing health-promoting working conditions. Taken together, we propose the following:

Hypothesis 1: CSEs will be positively related to SelfCare behavior.

OHC as a Moderator of the Relationship Between CSEs and SelfCare Behavior

There is a long history of research that has focused on organizational climate (for a review see Schneider, González-Romá, Ostroff, & West, 2017). There are various definitions of organizational climate that can be integrated by stating, "it is a summary perception derived from a body of interconnected experiences with organizational policies, practices and procedures" (Schneider et al., 2017, p. 468). Organizational climate is a very broad construct that lacks specificity and thus cannot easily be used to predict certain specific outcomes (Schneider & Snyder, 1975). Thus, Schneider and Snyder (1975) called for the study of specific climates, such as a climate for safety. In our

study, we focused on a *perceived* organizational climate. We emphasize the term *perceived* as we did not include objective measures in our study, and we analyzed climate on an individual level. Accordingly, OHC refers to the employee's perception that the policies, practices, and procedures applied by the organization are important with respect to health within this organization (Gurt, Schwennen, & Elke, 2011).

Organizational climate is supposed to affect individuals' behavior in organizations (Glick, 1985). Building on TAT (Tett & Burnett, 2003), we suggest a moderating effect of OHC in the relationship between CSEs and SelfCare behavior. TAT was originally developed to explain how traits are related to work behavior in terms of job performance. TAT represents a person-situation interactionist model that emphasizes that "traits are expressed in work behavior as responses to trait-relevant situational cues" (Tett & Burnett, 2003, p. 503). According to the model, situational cues are moderators that specify when and how a certain trait is expressed. Tett and Burnett (2003) distinguished between three sources of trait-relevant situational cues provided in work settings: task-related, social, and organizational cues. Situational cues on the organizational level are represented in organizational culture and climate (Tett & Burnett, 2003). OHC can be seen as a relevant cue for activating personality traits, which in turn promote certain work-related behaviors (i.e., SelfCare behavior in this case). In the present study, we focused on the organizational level as it seems especially relevant to health behaviors.

However, Tett and Burnett (2003) stressed that situational cues need to be "trait-relevant" (p. 502) to give rise to trait activation. Therefore, an organizational climate for health has to be connected to CSEs in such a way that responses to the relevant cue "indicate a person's standing on the trait" (Tett & Burnett, 2003, p. 502). First, people with high levels of CSEs—due to an approach tendency and promotion focus (Ferris et al., 2011; Higgins, 1998)—are supposed to be more sensitive to positive stimuli and less sensitive to negative stimuli (Chang et al., 2012; Ferris et al., 2011). Thus, positive situational cues should be more salient for high-CSE individuals than low CSE-individuals. High-CSE individuals should therefore be more motivated to engage in certain behaviors that help them to achieve positive outcomes such as happiness, control, or health (Ferris et al., 2011). For example, a situation in which an organization offers employees free opportunities to improve their health (e.g., in terms of health practices such as stress management trainings, or health policies such as flexible working hours or working from home) is relevant to CSEs because responding to such a cue would suggest

that people evaluate themselves as worthy, effective, and capable with respect to health-related issues, whereas ignoring such a cue would not. On the other hand, the OHC cue should be less motivating for low-CSE individuals because they are less confident that they can achieve desirable outcomes (Leary & MacDonald, 2003).

Even if there are theoretical reasons to expect a moderating effect of OHC in the relationship between CSEs and SelfCare behavior, to our knowledge such an effect has not yet been tested. In fact, empirical studies focusing on OHC are rather scarce (for an exception see Gurt et al., 2011). By contrast, a lot of research has been conducted on safety climate, a concept that bears some similarities to health climate as it also concerns employees' climate perceptions and their effects on physical health (Zohar, 2014). In this context, studies have confirmed the moderating role of a positive safety climate (e.g., Hofmann, Morgeson, & Gerras, 2003). Given the theoretical and empirical background described above, we propose the following:

Hypothesis 2: OHC will moderate the relationship between CSEs and SelfCare behavior such that the relationship will be stronger under high than under low OHC.

Exhaustion as a Mediator of the Relationship between CSEs and SelfCare Behavior

Core self-evaluations have consistently been found to have positive effects on different health-related outcomes (Chang et al., 2012). A meta-analysis by Alarcon, Eschleman, and Bowling (2009), for example, found that individuals with higher CSEs experience less job burnout. Burnout can be defined as a multidimensional construct that comprises three core dimensions: (emotional) exhaustion, cynicism, and (reduced) personal accomplishment (Maslach, Schaufeli, & Leiter, 2001). However, in comparison with cynicism and (reduced) personal accomplishment, exhaustion can be seen as the most central dimension of burnout (Maslach et al., 2001); it refers to feelings of being strained and depleted by one's job (Demerouti, Bakker, Vardakou, & Kantas, 2003). Therefore, we concentrated on exhaustion as a potential mediator in this study.

The positive impact of CSEs on exhaustion can be explained by the way people perceive their environment regarding different job characteristics (differential exposure hypothesis; Kammeyer-Mueller et al., 2009). High-CSE individuals tend to experience their work environment as challenging rather than threatening and should therefore feel less exhausted as compared with people with low levels of CSEs. In support of this assumption, Kammeyer-Mueller et al. (2009) found that people with high CSEs reported

fewer stressors than people with low CSEs did. Leaders who feel energetic and fit are in turn supposed to engage in self-directed health behavior more often than leaders who feel depleted and drained. Conservation of resources (CoR) theory offers a theoretical framework to explain why leaders' exhaustion may impact their SelfCare behavior. According to that theory, "people strive to retain, protect, and build resources" (Hobfoll, 1989, p. 516). The model of conservation of resources further assumes that "individuals are motivated to gain resources. This motivation drives people to invest resources in order to enrich their resource pool" (Hobfoll, 1989, p. 520). Thus, the less exhaustion a person experiences, the more resources he or she should have, and this in turn should lead to increased SelfCare behavior. By contrast, people who lack resources should be more prone to further loss of resources and thus tend to be motivated to protect the resources they have left. Consequently, instead of investing their resources in health behaviors, which by itself costs additional resources, exhausted leaders may take a "defensive posture" (Hobfoll, 2001, p. 356) to protect their resources. To sum up, we propose the following:

Hypothesis 3: CSEs will affect SelfCare behavior via exhaustion such that higher CSEs will decrease exhaustion while subsequently leading to higher SelfCare behavior.

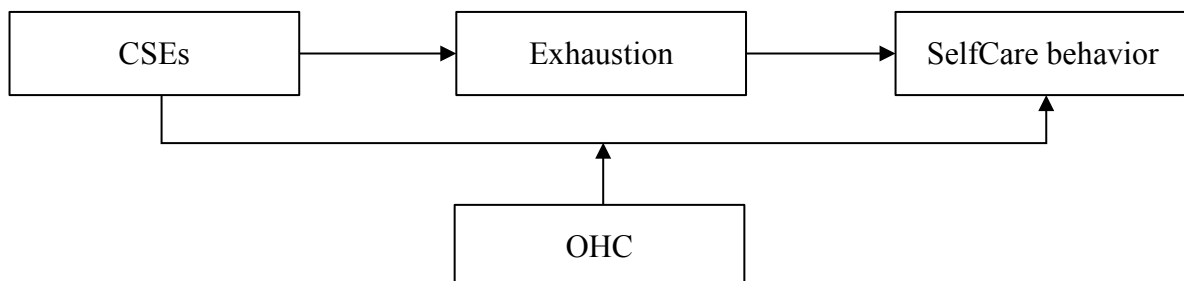


Figure 1. Theoretical model of the relationship between CSEs and SelfCare behavior. CSEs, core self-evaluations; OHC, organizational health climate.

Materials and Methods

Procedure and Sample

The study was part of a larger research project on the antecedents and effects of health-oriented leadership. Data were collected in Germany from May to September 2016.

The study was advertised through various mailing lists and networks. Specifically, we promoted participation in the study in various ways, for example, through the quarterly newsletter of our Competence Center for Personnel Psychology

(<https://www.uni-bamberg.de/kap/>), the university's homepage, and its press department. In addition, leaders in the authors' networks were contacted via email and asked to distribute the web link to the study. To increase their motivation to participate, participants were offered different kinds of incentives: (a) an information sheet on how to lead oneself and one's employees in a health-supporting manner, (b) a summary of the study results, (c) the chance to win personalized feedback about their ability-based emotional intelligence quotient, as assessed with the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Steinmayr, Schütz, Hertel, & Schröder-Abé, 2011). The study was conducted in line with the ethical guidelines by APA. An ethics approval was not required as per our institution's guidelines and national regulations. Participants provided informed consent to participate by virtue of survey completion.

Using the different recruitment channels resulted in 621 people who clicked on the study link and 306 of those started the study. A total of 181 participants completed the full survey. They were asked to state if they currently hold a leadership position and which management level they belong to. Thirty-one participants had to be excluded due to previously defined exclusion criteria such as working part-time, being self-employed, or not currently holding a leadership position; two participants were excluded because of symmetrical answer patterns. Thus, 150 leaders (98 male, 52 female) of various occupational fields—mostly from manufacturing or merchandising industries—made up the final sample.

Leaders were on average 47 ($SD = 9.12$) years old and had been working at their current company for approximately 15.2 ($SD = 10.38$) years, most of them in HR management. Seventeen percent belonged to the lower management, 47% belonged to the middle management, and 35% belonged to the upper management; 1% did not provide such information. On average, they worked 46.9 hours ($SD = 7.12$) per week. Seventy-one percent held a university degree (university and university of applied studies), 15% a university entrance qualification, 14% a secondary general school certificate, and 1% an intermediate secondary school certificate.

Measures

Core self-evaluations. To measure the broad trait of CSEs, we used the German version of the Core Self-Evaluations Scale by Stumpp et al. (2010), originally developed by Judge et al. (2003). The scale consists of 12 items with six of them reverse coded. Participants stated the degree to which they agreed with each item on a 5-point

Likert-type scale (1 = *not at all*, 5 = *completely*). Example items are “Overall, I am satisfied with myself” and “There are times when things look pretty bleak and hopeless to me” (reversed). Cronbach’s alpha was 0.82.

SelfCare behavior. SelfCare behavior (Cronbach’s alpha = 0.65; e.g., “I try to reduce my demands by optimizing my personal work-life balance, e.g., take regular breaks, avoid overtime”) was assessed with four items from the Health-oriented Leadership (HoL) instrument by Franke et al. (2014). All items were answered on a 5-point rating scale ranging from 1 (*not at all true*) to 5 (*completely true*).

Exhaustion. Exhaustion was measured with eight items from the Oldenburg Burnout Inventory (Demerouti & Bakker, 2008; Demerouti & Nachreiner, 1998). Sample items are “After my work, I regularly feel worn out and weary” and “After my work, I regularly feel totally fit for my leisure activities” (reversed). Four items were positively worded, and four items were negatively worded. Positively worded items were recoded so that higher scores would reflect higher exhaustion. Items were scored on a 4-point Likert-type scale (1 = *strongly disagree*, 4 = *strongly agree*). Internal consistency was $\alpha = 0.85$.

Organizational health climate. Two items from the short version of the Organizational Health and Safety questionnaire were used to measure OHC (Gurt, Uhle, & Schwennen, 2010). Items were scored on a 5-point rating scale ranging from 1 (*not at all true*) to 5 (*completely true*). An example item is “Health initiatives in my organization are either insufficient or inadequate” (reversed). Cronbach’s alpha was 0.77.

Control variables. We assessed gender (1 = *male*, 2 = *female*), age, and tenure as control variables due to theoretical reasons. In general, meta-analyses showed that women are more exhausted than men (Purvanova & Muros, 2010). In addition, Brewer and Shapard (2004) found that age and years of experience was negatively related to exhaustion. Where leaders are concerned, studies showed that female (Kromm, Frank, & Gadinger, 2009; Zimber et al., 2015) and middle-aged leaders (from 30 to 50, e.g., Ohm & Strohm, 2001) are more at risk than others with respect to negative health outcomes. Besides, Ohm and Strohm (2001) found that leaders who have held their current position for a long time, reported to be in worse physiological and psychological health than leaders who are at the beginning of their careers.

Data Analysis

All analyses were done in SPSS (version 23). In order to test our hypotheses, we used the PROCESS macro provided by Hayes (2013). PROCESS can be applied to conduct conditional process analyses. In this study, we tested a conditional process model (see Figure 1), which depicts mediation of the effect of CSEs on SelfCare behavior through exhaustion, with the direct effect moderated by OHC, by specifying the PROCESS model 5. Estimating the effects of interest, 10,000 bootstrap samples were used to calculate bias-corrected bootstrap confidence intervals. In addition, all standard errors were based on the HC3 estimator.

As unstandardized regression coefficients are the default when the PROCESS macro is used, all variables were standardized prior to our analyses. As a consequence, to test the moderating effect of OHC on the relationship between CSEs and SelfCare behavior, the products were not mean-centered before the analysis.

Age, gender, and tenure were also included as control variables in the preliminary correlational analyses.

Results

Preliminary Analyses

We estimated the intercorrelations between the study variables, which are displayed in Table 1. Study variables were significantly correlated in the hypothesized direction. CSEs were positively related to SelfCare behavior ($r = 0.36, p < 0.001$) and, similar to previous research (e.g., Alarcon et al., 2009), they were negatively related to exhaustion ($r = -0.62, p < 0.001$). Exhaustion in turn was significantly negatively related to SelfCare behavior ($r = -0.36, p < 0.001$). As expected, OHC was positively associated with CSEs ($r = 0.33, p < 0.001$) and SelfCare behavior ($r = 0.18, p = 0.027$), respectively.

The control variables age and tenure were not significantly correlated with either the mediator or the outcome variable and were thus not included in further analyses.

Because we used self-report questionnaires to collect data, we tested for common method variance (CMV; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). We conducted Harman's single-factor test (see Tehseen, Ramayah, & Sajilan, 2017) in SPSS to find out "whether one single factor emerges" (Tehseen et al., 2017, p. 155) which makes up for most of the variance in the data. All items of the study constructs were entered into factor

analysis (i.e., principal component analysis, no rotation). The results indicate that CMV does not play a pivotal role in this study: In contrast to one single factor, seven distinct factors were extracted which captured 62% of the total variance. Moreover, the first unrotated factor accounted only for 27% of this variance.

Tests of Hypotheses

We will report the results in the order in which the hypotheses were presented (for an overview, see Figure 2). Table 2 shows the study results. Supporting Hypothesis 1, CSEs were positively associated with SelfCare behavior, $c_1' = 0.229$, $p = 0.030$, 95% CI [0.02, 0.44], confirming a positive direct effect of CSEs on leaders' SelfCare behavior.

However, we did not find a moderating effect of OHC on the relationship between CSEs and SelfCare behavior, $c_3' = -0.031$, $p = 0.764$, 95% CI [-0.23, 0.17]. Thus, we did not find support for Hypothesis 2.

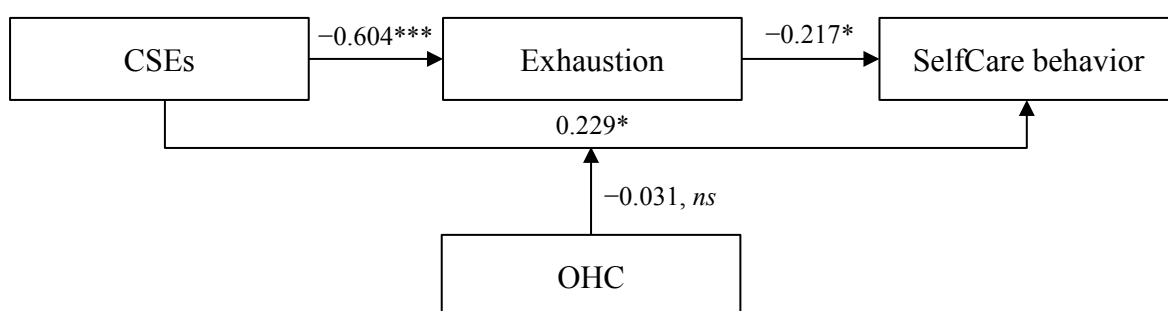


Figure 2. Empirical model of the relationship between CSEs and SelfCare behavior. Standardized regression coefficients are represented in the model. $N = 149$. The effect of gender was controlled for. CSEs, core self-evaluations; OHC, organizational health climate. $*p < 0.05$. $***p < 0.001$.

In line with Hypothesis 3, we found that CSEs were negatively related to exhaustion, $a = -0.604$, $p < 0.001$, 95% CI [-0.73, -0.48]. Thus, the more positive leaders' self-evaluations were, the less exhausted they felt. Similarly, exhaustion was negatively related to SelfCare behavior, $b = -0.217$, $p = 0.028$, 95% CI [-0.41, -0.02], showing that the less exhausted the participants were, the more they engaged in self-directed health behavior (see Table 2 again for both results). A bias-corrected 95% bootstrap confidence interval—based on 10,000 bootstrap samples—for the indirect effect ($ab = 0.131$) excluded zero (0.01, 0.25), thus supporting that CSEs affected SelfCare behavior via exhaustion: Leaders with high CSEs experienced less exhaustion, which was subsequently associated with higher SelfCare behavior.

Table 1
Means, Standard Deviations, and Correlations of the Study Variables

Variable	M	SD	1	2	3	4	5	6	7
1. Age ^a	46.84	9.12	—						
2. Gender ^b	1.35	0.48	-0.19*	—					
3. Tenure ^c	15.22	10.38	0.56***	-0.10	—				
4. CSEs	3.87	0.50	0.08	-0.26**	0.05	(0.82)			
5. SelfCare behavior	3.54	0.72	0.01	-0.06	0.03	0.36***	(0.65)		
6. Exhaustion	2.21	0.55	-0.05	0.22**	-0.11	-0.62***	-0.36***	(0.85)	
7. OHC	3.53	0.93	-0.01	-0.13	0.10	0.33***	0.18*	-0.32***	(0.77)

N = 150. Pairwise deletion. Cronbach's alphas are listed on the diagonal. CSEs, core self-evaluations; OHC, organizational health climate.

^aAge is coded in years. ^bGender is coded 1 = male, 2 = female. ^cTenure is coded in years.

p* < 0.05. *p* < 0.01. ****p* < 0.001.

Table 2

Regression Coefficients, Standard Errors, and Model Summary Information for the Conditional Process Model depicted in Figure 2

Antecedent		Consequent						
		Exhaustion			SelfCare behavior			
		Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>	
CSEs	<i>a</i>	-0.604	0.063	<0.001	<i>c</i> ₁ '	0.229	0.104	0.030
Exhaustion		–	–	–	<i>b</i>	-0.217	0.098	0.028
OHC		–	–	–	<i>c</i> ₂ '	0.043	0.088	0.630
CSEs x OHC		–	–	–	<i>c</i> ₃ '	-0.031	0.103	0.764
Gender ^a	<i>f</i> ₁	0.113	0.139	0.420	<i>g</i> ₁	0.078	0.168	0.641
Constant	<i>i</i> ₁	-0.156	0.197	0.428	<i>i</i> ₂	-0.107	0.238	0.652
<i>R</i> ² = 0.387				<i>R</i> ² = 0.175				
<i>F</i> (2, 146) = 48.783, <i>p</i> < 0.001				<i>F</i> (5, 143) = 5.090, <i>p</i> < 0.001				

N = 149. One case was deleted due to missing data. Variables were standardized prior to analyses. CSEs, core self-evaluations. OHC, organizational health climate.

^aGender is coded as 1 = *male*, 2 = *female*.

Discussion

Leaders' self-directed health behavior plays a pivotal role in the health of both leaders and their employees. The aim of this study was to investigate the personal antecedents (i.e., CSEs) of leaders' SelfCare behavior because knowing about antecedents can help make SelfCare behavior more likely to occur. We further wanted to shed light on why, and under which conditions, leaders' personality affects their health behavior.

Our results showed that CSEs were positively related to SelfCare behavior (direct effect) and that reduced exhaustion mediated this positive relationship (indirect effect), providing support for Hypotheses 1 and 3. Thus, the higher the CSEs of the leaders were, the more SelfCare behavior they engaged in. In addition, when leaders had higher levels of CSEs, they experienced less exhaustion, and this in turn led to more SelfCare behavior. The first result confirmed the idea that leaders' personality is relevant to their health behavior. More specifically, the way leaders appraise themselves influences the way they take care of themselves. This result is in line with studies that have investigated the associations between the specific traits that are part of CSEs and health-related behaviors.

However, this study extends research on personality and health behavior by showing that CSEs as a higher order factor impact leaders' health behavior.

The finding that reduced exhaustion mediated the relationship between CSEs and SelfCare behavior offers a better understanding on the link between CSEs and health behavior. The CSEs-health link has already been identified multiple times in various contexts (for a review, see Chang et al., 2012), but possible mediational processes had yet to be clarified. The exhaustion-health behavior relationship shown in the present study is in line with the assumption of the CoR theory. Leaders who feel exhausted do not have enough resources to invest time and effort into taking care of their health. Unfortunately, this could start a vicious circle: Engaging in health behavior, would help leaders to build new resources; avoiding to do so will lead to further loss of resources. Our finding dovetails with research by Byrne et al. (2014), who found that leaders who suffer from depressive symptoms and anxiety lack the resources to care for their employees. Feeling too exhausted to care for oneself or to care for employees is, however, bound to lead to magnify present problems.

We did not find that context acted as a moderating variable. OHC did not make a difference. From a theoretical point of view, this result is surprising. TAT provides a relevant theoretical framework to support the idea that organizational climate moderates the relationship between personality and work behavior. In addition, the approach/avoidance framework provides rational reasons for why OHC should be trait-relevant in terms of leaders' CSEs. Because of their approach tendency, high-CSE individuals should be more motivated than low-CSE individuals to engage in positive work-related behaviors (i.e., SelfCare behavior) that are aimed at ensuring positive outcomes for themselves. But this might be the point: People with high levels of CSEs act on the basis of their own motivation, which means that they are *intrinsically* motivated to pursue their goals (Chang et al., 2012). Regardless of the quality of the prevailing health climate, they are likely to follow their own agenda and do not need to be activated by situational cues to engage in health behaviors. By contrast, low-CSE individuals generally tend to be motivated by avoidance and tend to remain passive rather than expose and engage themselves.

Limitations and Future Research

This study has some limitations that need to be mentioned. First, we used a cross-sectional design to test our hypotheses. Because of this, the results need to be interpreted

with caution with respect to causality. Thus, reversed effects between CSEs and SelfCare behavior are possible. Leaders' SelfCare behavior might affect the way leaders evaluate themselves in terms of self-worth, competence, and capabilities. Consequently, future research should apply a longitudinal design to test the proposed model. Besides, an experimental study would add to our understanding of causality in this relation.

Second, we used solely self-report questionnaires for data collection which were all answered by the leaders themselves. Hence, our results rely on a single source and could thus be biased by the presence of common-method variance (Podsakoff et al., 2003). Although the results of Harman's single-factor test suggest that CMV is not a major concern in this study, method biases may still have an impact. In future research, it would thus be worthwhile to control for CMV by considering "procedural remedies" (Tehseen et al., 2017, p. 146) such as including other data sources, e.g. ratings from colleagues or subordinates. In addition, objective measures, for example, blood pressure data would be helpful as a measure of exhaustion. Finally, predictors and criteria should be measured at two points in time.

Third, the reliability of the SelfCare behavior scale was relatively low. This can be attributed to the fact that the scale measures a broad range of behaviors. The items comprise rather diverse aspects of health behavior (e.g., improving working conditions versus balancing work-life resources) which limits internal consistency but is of course advantageous with regard to validity (i.e., reliability-validity tradeoff). Moreover, the reliability found in this study is comparable to other studies. For example, Franke et al. (2014) found in a sample of employees in Germany a Cronbach's alpha of 0.67. Future research should nevertheless try to replicate the findings using a health behavior scale with better reliability.

Fourth, we included leaders from a wide range of organizations. Results concerning the moderating effect of OHC may be different when focusing on one organization only. In this case, it would be possible to aggregate individual perceptions of climate to form an index of climate at the unit, team, or organizational levels of analysis (Schneider et al., 2017). Future research should thus collect additional data to take a deeper look into how OHC interacts with leaders' personality in predicting their SelfCare behavior. Beyond this, future research could benefit from investigating additional moderators of the relationship between CSEs and SelfCare behavior. Whereas OHC refers to the organizational level, possible cues on the social and task-related level are

likely; for example, the perceived quality of the relationship between a leader and his or her employees on the team level (leader-member exchange; Graen & Uhl-Bien, 1995) or the task complexity a leader is confronted with on the task level.

Fifth, the sample size in this study was quite small. Future research should replicate the findings in a larger leader sample. In addition, a possible self-selection bias restricts the generalizability of our results. It is certainly possible that the leaders who decided to participate in our study consisted primarily of those who were relatively well-equipped to cope with their demands.

Practical Implications

Our findings offer relevant practical implications for organizations. For example, organizations should invest in personnel development to foster leaders' CSEs, and thus their health. For example, personnel development measures could be aimed at improving leaders' self-evaluations in group settings or individual coaching sessions. In addition, organizations could offer SelfCare behavior trainings to support leaders in developing suitable behavioral strategies that will help them take care of themselves. Franke, Vincent, and Felfe (2011), for example, developed a training concept for leaders that focuses on leaders' SelfCare as a first step so that leaders will be better able to deal with their employees' health in a second one.

Given that OHC was not found to moderate the relationship between CSEs and SelfCare behavior, it does not seem necessary to derive practical implications with respect to this matter. However, it seems rather unlikely that a positive OHC would have negative effects on organizational outcomes. In fact, in our study, there were medium-sized correlations between OHC and the relevant constructs. In addition, other studies have shown that a positive organizational climate might not have only moderating effects but also positive direct effects on different organizational outcomes (Schneider et al., 2017). Thus, organizations should still invest resources into policies, practices, and procedures that are aimed at promoting the health of their members.

Conclusion

SelfCare behavior can be seen as one way for leaders to stay healthy and fit. Studying leaders' SelfCare behavior and its personal antecedents is important for leaders and employees alike because it influences the health and well-being of both groups.

In this study, we investigated the direct effect of CSEs on SelfCare behavior in a sample of leaders. We also looked at mediating and moderating processes in order to better understand why and how this relationship occurs. We concentrated on (reduced) exhaustion as a mediator and OHC as a moderator of the CSEs-SelfCare behavior relationship.

Our results showed that CSEs were positively related to leaders' SelfCare behavior. Leaders with high CSEs engaged more strongly in SelfCare behavior than others, a finding that emphasizes the importance of broad personality traits in health behaviors. Further, we were able to clarify the relationship by showing that reduced exhaustion mediated this relationship. High-CSE individuals experienced less exhaustion, which in turn made SelfCare behavior more likely to occur.

Organizational health climate did not moderate the positive direct effect of CSEs on SelfCare behavior. In future studies, researchers should investigate the role of OHC in the personality-health behavior relationship further and extend studies to capture other possible moderating variables. Future research is needed to replicate and build on our findings with a longitudinal research design.

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STUDY 3: IMPROVING EMOTION PERCEPTION AND EMOTION REGULATION THROUGH A WEB-BASED EMOTIONAL INTELLIGENCE TRAINING (WEIT) PROGRAM FOR FUTURE LEADERS

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Summary

We evaluated a Web-Based Emotional Intelligence Training (WEIT) program that was based on the four-branch model of emotional intelligence (EI; Mayer & Salovey, 1997) and which aimed at improving emotion perception (EP) and emotion regulation (ER) abilities in future leaders. Using a controlled experimental design, we evaluated short-term (directly after the WEIT program) and long-term (6 weeks later) effects in a sample of 134 (59 training group [TG], 75 wait list control group [CG]) business students and additionally tested whether WEIT helped to reduce perceived stress. For EP, WEIT led to a significant increase in the TG directly after training (whereas the wait list CG showed no change). Changes remained stable after 6 weeks in the TG, but there were no significant differences between the TG and CG at follow-up. By contrast, ER did not show an increase directly after WEIT, but 6 weeks later, the TG had larger improvements than the CG. The results mostly confirmed that emotional abilities can be increased through web-based training. Participants' perceived stress did not decrease after the training program. Further refinement and validation of WEIT is needed.

Introduction

EI has attracted considerable attention in recent years (for a review, see Côté, 2014). For example, studies have shown that EI is related to important work outcomes such as job performance (e.g., O'Boyle, Humphrey, Pollack, Hawver, & Story, 2011). Moreover, EI is particularly helpful in leadership. That is, EI has been found to be associated with leadership emergence (Côté, Lopes, Salovey, & Miners, 2010) and leadership effectiveness (Rosete & Ciarrochi, 2005). Studies have shown that people high in EI have better subjective well-being (Sánchez-Álvarez, Extremera, & Fernández-Berrocal, 2016) and health (Martins, Ramalho, & Morin, 2010). The association of EI with better health is especially important for leaders because of their challenging work demands (e.g., Hambrick, Finkelstein, & Mooney, 2005).

Owing to increasingly complex work environments, the personnel development practices of organizations have changed: Web-based training (WBT) is on the rise to enhance job-relevant competencies (Erpenbeck, Sauter, & Sauter, 2015). For example, 70% of the e-learning experts in German-speaking companies stated that WBT will become more important in the next years (Institut für Medien- und Kompetenzforschung, 2018). However, whereas studies have already shown that EI can be enhanced through face-to-face training (for a review, see, e.g., Hodzic, Scharfen, Ripoll, Holling, & Zenasni, 2018), it has not been determined whether EI can be improved through WBT. Moreover, studies that have evaluated EI training directed at leaders are still rare (cf. Slaski & Cartwright, 2003). To address this gap, we designed and evaluated a WBT program to increase EI in future leaders—the Web-Based Emotional Intelligence Training (WEIT) program.

Evaluations of EI training have been subject to criticism: Training programs have often been missing a clear theoretical basis, have focused only on short-term changes but not on long-term ones, have not used control groups, and have rarely used performance-based measures of EI (e.g., Schutte, Malouff, & Thorsteinsson, 2013). We aimed to overcome the shortcomings of previous research: First, WEIT was based on a clear theoretical background and methods that have been shown to foster a sustainable impact. Second, we used an experimental design in which participants were randomly assigned to either a TG or a wait list CG. Third, we tested for sustainability by administering a

follow-up test 6 weeks after WEIT. Fourth, instead of relying on self-reported EI measures, we administered a performance-based test to measure EI.

Theoretical Framework

EP and ER as Core Abilities in the Workplace

Ability models of EI suggest that EI is an ability that develops over time (e.g., Salovey & Mayer, 1990) and that it can be trained. Therefore, WEIT was based on the idea that EI is a competence that can be improved through training. WEIT is based on Mayer and Salovey's (1997) four-branch model of EI, which distinguishes four abilities: (1) perceiving emotions, (2) using emotions, (3) understanding emotions, and (4) regulating emotions. Later research showed that the ability to use emotions overlaps with the other abilities and supports a three-factor model (Joseph & Newman, 2010). The third branch has been criticized for being rather cognitively saturated and close to verbal intelligence (Schütz & Koydemir, 2018). Thus, perceiving and regulating emotions are often considered the most relevant aspects of EI when it comes to training (Herpertz, 2016). Besides, applied research has shown that it is especially the branches of perceiving and regulating emotions that are relevant to work-related situations (Schütz & Koydemir, 2018). Leaders in particular tend to benefit from good EP and ER abilities because their daily tasks require emotional labor (Humphrey, Ashforth, & Diefendorff, 2015).

Perceiving emotions is considered the most basic aspect of EI and encompasses the ability to identify emotions in others' faces, voices, and behavior (EP in others) and the ability to be aware of one's own emotions (EP in oneself). Farh, Seo, and Tesluk (2012) showed that the ability to perceive emotions was positively associated with job performance in jobs with a high level of managerial work demands. In addition, a study by Nizielski, Hallum, Schütz, and Lopes (2013) showed that the perceived ability to adequately recognize emotions in oneself and others is related to reduced burnout. In general, leaders and their employees have been found to benefit from leaders' well-being because exhausted leaders have been found to engage in less positive (e.g., health-promoting leadership; Köppe, Kammerhoff, & Schütz, 2018) but more negative leadership behavior (e.g., abusive supervision; Harms, Credé, Tynan, Leon, & Jeung, 2017). Finally, Rubin, Munz, and Bommer (2005) found that leaders with high EP abilities engaged in more transformational leadership behavior than others, e.g.

communicating a vision or setting ambitious work goals. In turn, transformational leadership is associated with various positive outcomes such as employee performance (e.g., Wang, Oh, Courtright, & Colbert, 2011) and well-being (e.g., Skakon, Nielsen, Borg, & Guzman, 2010).

ER is considered the most complex EI ability. It comprises the ability to manage both positive and negative emotions in oneself and others by selecting and applying adequate ER strategies (Mayer & Salovey, 1997). Effective ER strategies include shifting attention, cognitive reappraisal, or communicating one's feelings (Gross, 1998, 2002). This ability is essential to leaders who frequently need to deal with their own and others' emotions (e.g., employees, customers). In this vein, performance-based ER was found to be positively associated with job performance, and this was particularly true for high emotional labor jobs (Newman, Joseph, & MacCann, 2010). Besides, studies have shown that people who are good at managing emotions have fewer conflicts (Lopes, Nezlek, Extremera, Hertel, Fernández-Berrocal, Schütz, & Salovey, 2011) and better relationships (e.g., Lopes, Brackett, Nezlek, Schütz, Sellin, & Salovey, 2004). Thus, the ability to regulate emotions seems to be an important asset in the context of leadership. In this vein, positive leader-employee relationships (leader-member exchange theory; Graen & Uhl-Bien, 1995) are associated with various positive work-related outcomes (e.g., Dulebohn, Bommer, Liden, Brouer, & Ferris, 2012).

Altogether, previous research has underscored the idea that the abilities to perceive and regulate emotions both play important roles in successful leadership and are thus important to cultivate. Consequently, we designed a training program that was aimed at enhancing the "core" aspects of EI (i.e., EP and ER) in future leaders.

Improving EP and ER through WEIT

In recent years, several studies have demonstrated that EI can be improved through face-to-face training, especially when based on ability models of EI (Hodzic et al., 2018). However, studies that have focused on leaders as a target group have been rare (cf. Slaski & Cartwright, 2003). Moreover, earlier EI training programs for leaders did not take into account the requirements of a leadership position such as local and temporal flexibility. Thus, we developed a relatively short WBT program in which individuals were able to participate when and where it best suited them. In addition, the web-based format allows organizations to save significant amounts of money by cutting costs for

travel, accommodation, and trainers and by reaching a virtually unlimited number of individuals (Kimiloglu, Ozturan, & Kutlu, 2017).

To our knowledge, no previous studies have investigated the effectiveness of EI training delivered online (cf. Jung et al., 2016). However, there are studies that have shown the effectiveness of online interventions aimed at enhancing self-efficacy (Ouweneel, Le Blanc, & Schaufeli, 2013), mindfulness (Spijkerman, Potts, & Bohlmeijer, 2016), or stress management (Heber et al., 2017). These concepts partially overlap with EI with respect to aspects such as self-awareness, empathy, or positive thinking. This is why we were confident that EI can be trained online. In line with this reasoning, we hypothesized the following:

Hypothesis 1a: WEIT will lead to an increase in participants' EP and ER abilities as measured directly after the intervention (short-term effects).

Hypothesis 1b: The improvement through WEIT will remain stable over time (6 weeks after the end of the intervention), reflecting long-term effects.

Positive Effects of WEIT on Perceived Stress

In this study, we investigated whether WEIT could also help to reduce perceived stress in future leaders. Feeling healthy is particularly important for leaders to be able to perform well and interact with employees in a supportive manner. For example, a recent study by Köppe et al. (2018) showed that exhausted leaders attended less to the health of their employees, who in turn had more somatic complaints.

Empirical evidence has shown that EI is related to subjective well-being (Sánchez-Álvarez et al., 2016). Furthermore, studies have shown that face-to-face EI training can decrease stress (e.g., Kotsou, Nelis, Grégoire, & Mikolajczak, 2011), and a recent meta-analysis by Heber et al. (2017) found that WBT is appropriate for reducing stress. In considering these results together, we proposed the following:

Hypothesis 2a: WEIT will reduce stress measured directly after the intervention (short-term effects).

Hypothesis 2b: The improvement in stress will remain stable over time (6 weeks after the end of the intervention), reflecting long-term effects.

Material and Methods

Procedure

Students from business administration and management or business-related studies from different German universities were recruited in various ways (e.g., flyers, mailing lists). Participants registered for the training program via e-mail and were randomly assigned to the TG or wait list CG. Participants completed an online battery before the intervention (Time 1, pretest), directly after the intervention (Time 2, posttest), and 6 weeks later (Time 3, follow-up test). The wait list CG completed the three online surveys parallel to the TG and started WEIT after they had completed the follow-up test.

WEIT consisted of four consecutive modules that were spread over 4 working days, starting on a Monday. Once a participant had completed all four modules, a 4-week online practice period began. As an incentive for their participation, participants in both the TG and CG were offered a training certificate and a detailed analysis of their EI.

Participants

Participants were students from business or business-related studies because these groups are likely to hold leadership positions in organizations later on. A total of 197 students participated in the study with 190 students yielding full and reproducible sets of data at Time 1. Of these, 134 students ($n = 59$ in the TG, $n = 75$ in the CG) completed both the pretest and posttest, and their data were thus used in the analyses of short-term effects. Thus, the dropout rate from Time 1 to Time 2 was 29.47%. Participants who did not complete the posttest, did not differ significantly in gender, $\chi^2 = 1.56$, $p = .21$; age, $t(188) = -0.92$, $p = .36$ or the relevant study variables measured at Time 1 (MSCEIT EP, $t(188) = 1.22$, $p = .23$; MSCEIT ER, $t(188) = 0.75$, $p = .45$; Irritation, $t(188) = 1.21$, $p = .23$). Dropout was larger in the TG ($n = 38$) than in the CG ($n = 18$). A total of 110 students ($n = 49$ in the TG and $n = 61$ in the CG) had complete data at all three time points, and thus, their data could be used in the analyses of long-term effects. Dropout rates between Times 2 and 3 (12.63% in total) were comparable between the two groups ($n = 10$ in the TG and $n = 14$ in the CG). Participants who did not complete the follow-up test, did not differ significantly in age, $t(132) = -0.19$, $p = .85$ or the relevant study variables measured at Time 2 (MSCEIT EP, $t(29) = -1.05$, $p = .30$; MSCEIT ER, $t(132) = -0.78$, $p = .44$; Irritation, $t(132) = 0.35$, $p = .73$). However, there were significant

differences between the two groups in gender, $\chi^2 = 7.41, p = .01$; more women than men completed both posttest and follow-up test.

Out of the 134 participants who were included in the analyses of short-term effects, there were 83 women and 51 men with a mean age of 26.66 ($SD = 5.69$). Only 36 (26.9%) students reported that they had previous experiences with WBT. More precisely, 19 participants in the TG reported previous experience with WBT, and 17 participants in the CG reported this kind of experience ($\chi^2 = 1.53, p = .22$). However, no participant indicated having previous e-learning experience regarding EI. There were no other significant differences between the groups in gender, $\chi^2 = 0.83, p = .36$; age, $t(132) = -0.96, p = .34$; field of study, $\chi^2 = 2.89, p = .43$; or graduation, $\chi^2 = 0.62, p = .43$.

The WEIT program

WEIT builds on the empirically validated 1-day face-to-face training program EMO-TRAIN (Herpertz & Schütz, 2016; Herpertz, Schütz, & Nezelek, 2016). WEIT consisted of a pre-assignment task, the actual WEIT, which comprised four 1-hr modules, and a 4-week online practice period and included the four consecutive modules: (a) EP in others, (b) EP in the self, (c) ER in the self, and (d) ER in others. At the beginning of each module, basic information was presented. Various methods such as video clips, audio files, or drag and drop exercises were then used to create active learning experiences (see Erpenbeck et al., 2015). Each module concluded with a multiple-choice quiz and a homework assignment.

In the first module (i.e., EP in others), participants primarily learned about theories of basic emotions and how to recognize and distinguish between emotions on the basis of facial cues. In the second module (i.e., EP in oneself), participants viewed brief scenarios that demonstrated the links between specific situations, cognitive evaluations of the situation, and the development of emotions. They were thus introduced to a better understanding of their own emotions. The main focus of the third module (i.e., ER in oneself) was on the downregulation of negative emotions and the preservation, reinforcement, and upregulation of positive emotions. Gross' (1998) process model of ER was used as a theoretical foundation. Participants had the opportunity to read about and practice different ER strategies (e.g., listening to guided imagery). In the fourth module (i.e., ER in others), participants were familiarized with, for example, the concept of

nonviolent communication by Rosenberg (2010). Video clips were used to demonstrate negative and positive examples of how to communicate in a constructive manner.

Different methods were used to enhance the transfer effect of WEIT: The pre-assignment task enabled participants to use their personal experiences during training, reality-based exercises were included to increase participants' training motivation and sustainability. Multiple-choice questions, homework assignments, and goal setting exercises aimed at further strengthening the impact of WEIT. A 4-week online practice period was designed to consolidate key aspects of every module through a condensed assignment for each week.

Measures

All measures mentioned here were assessed three times: prior to the intervention (Time 1), directly after the intervention (Time 2), and 6 weeks later (Time 3).

MSCEIT EP/MSCEIT ER. The German version of the MSCEIT (Steinmayr, Schütz, Hertel, & Schröder-Abé, 2011) was used to measure the ability to perceive emotions (MSCEIT EP) as well as the ability to regulate emotions (MSCEIT ER) in oneself and others. Previous research has successfully applied the MSCEIT to capture EI training effects (e.g., Herpertz et al., 2016). EP was assessed using the subtasks faces and images in which participants were asked to use a 5-point scale (1 = *no/not at all*, 5 = *extreme/very strong*) to rate the degree to which an emotion was expressed in an image of a face or a picture of a landscape or an abstract pattern. ER was measured with the subtasks emotion management (ER in oneself) and social management (ER in others). In both tasks, hypothetical scenarios were presented and participants were asked to rate the effectiveness of various strategies in attaining or maintaining a specific emotional state on a 5-point scale (1 = *very ineffective*, 5 = *very effective*). Standard values for EP and ER were calculated by applying the consensus scoring method. Reliability analyses revealed Cronbach's alpha coefficients that varied from .89 to .92 for EP and from .53 to .67 for ER across the three time points. Previous studies have shown evidence for criterion validity, discriminant validity, and incremental validity in predicting social deviance, alcohol use, and academic achievement (Schütz & Koydemir, 2018).

Irritation scale. The Irritation scale by Mohr and Rigotti (2014) was used to measure perceived stress. The Irritation scale distinguishes between emotional (Subscale 1) and cognitive (Subscale 2) stress. Emotional stress (e.g., "When I come home from

class, I feel rather nervous”) was assessed with five items; cognitive stress was assessed with three items (e.g., “After class, it is difficult for me to calm down”). Items were scored on a 7-point scale (1 = *not at all true*, 7 = *completely true*). Previous studies had confirmed the reliability and validity of the scale (e.g., Mohr, Rigotti, & Müller, 2005). The internal consistencies in the present study were $\alpha = .78$ (Time 1), $\alpha = .83$ (Time 2), and $\alpha = .82$ (Time 3).

Results

Preliminary Analyses

All analyses were performed with SPSS version 24. To test for baseline differences between the TG and the CG, we computed independent *t* tests. However, preliminary analyses revealed that the data violated the assumption of normality (i.e., most of the variables were negatively skewed). In order to deal with the lack of normality, we transformed the data by applying a reverse score square root transformation (Field, 2013). This transformation also reversed the interpretation of the results. Further analyses showed that the TG and the CG differed only on the Irritation variable: The TG reported higher stress than the CG (see Table 1).

Tests of Hypotheses

We calculated 2 x 3 mixed analyses of variance (ANOVAs) for each dependent variable with group (TG vs. CG) as a between-subjects factor and time (pretest, posttest, follow-up test) as a within-subjects factor to test for short-term (Time 1 vs. Time 2) and long-term effects (Time 2 vs. Time 3) of training. In each case, a significant Group x Time interaction would indicate differential change between the two groups. Moreover, dependent *t* tests were computed to detect significant changes (i.e., improvement) in the variables in the TG.

Means, standard deviations, and the differences between Time 1, Time 2, and Time 3 for each variable and each group are shown in Tables 2 and 3.

Table 1

Means, Standard Deviations, and Significant Differences between the TG and CG prior to the Intervention

	TG (<i>n</i> = 59)		CG (<i>n</i> = 75)		<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
MSCEIT EP	4.28	1.47	4.46	1.66	-0.65	.51
MSCEIT ER	4.77	1.41	4.81	1.29	-0.14	.89
Irritation	1.71	0.33	1.59	0.25	2.31	.02

Note. *N* = 134. Due to a reverse score square root transformation, the interpretation of the variables is reversed. TG = training group; CG = control group; MSCEIT = Mayer-Salovey-Caruso Emotional Intelligence Test; MSCEIT EP = MSCEIT emotion perception branch; MSCEIT ER = MSCEIT emotion regulation branch.

EI changes. Concerning short-term effects of WEIT, the analyses showed a significant Group x Time interaction for the MSCEIT EP, $F(1, 132) = 4.40, p = .04$, which partially supported Hypothesis 1a. In comparison with the CG, the TG showed a significant decrease for the MSCEIT EP between Times 1 and 2 (see Table 2), representing an improvement of the ability to perceive emotions in oneself and others. No significant interaction was found for the MSCEIT ER, $F(1, 132) = 0.08, p = .78$. Neither the TG nor the CG showed a significant difference between Times 1 and 2 for the ER branch of the MSCEIT (see Table 2 again).

Analyses regarding the long-term effects yielded a significant Group x Time interaction for the MSCEIT ER, $F(1, 108) = 3.79, p = .05$, but not for the MSCEIT EP, $F(1, 108) = 1.67, p = .20$, which partially supported Hypothesis 2a. For the MSCEIT ER, scores decreased significantly in both groups (see Table 3), showing an improvement of the ability to regulate emotions in oneself and others in both cases. Indeed, the TG showed larger improvements than the CG (see Figure 2). The Group x Time interaction was nonsignificant for the MSCEIT EP. However, significant differences between Times 2 and 3 revealed a decrease for the MSCEIT EP—and thus an improvement—in EP ability in the CG. The differences between Times 2 and 3 were not significant in the TG. The result suggests that the improvement of EP from Time 1 to Time 2 remained stable in the TG after 6 weeks (see Table 3). The development of the two variables (MSCEIT EP and ER) is illustrated in Figures 1 and 2, respectively.

Perceived stress. With regard to the analyses of short-term effects, no significant Group x Time interaction was found for the Irritation scale, $F(1, 131) = 2.85, p = .09$. However, although stress levels did not differ from Time 1 to Time 2 in the TG, the CG reported experiencing significantly more stress at Time 2 than at Time 1 (see Table 2).

With regard to long-term effects, there was no significant Group x Time interaction for the Irritation scale, $F(1, 107) = 0.01, p = .91$. There were no differences between Times 2 and 3 in either group (see Table 3).

Discussion

In this study, we aimed to investigate whether WBT was able to improve EP and ER abilities and other EI-related outcomes. We hypothesized that performance-based EI abilities in the TG would increase after WEIT (Hypothesis 1a) and remain stable in the long run (Hypothesis 1b) in comparison with a CG. Furthermore, we tested whether WEIT would result in less perceived stress for the participants (Hypothesis 2a) and whether these improvements would remain stable 6 weeks after WEIT (Hypothesis 2b).

Using an experimental research design (i.e., controlled randomization, wait list CG), we showed that WEIT led to short-term changes in the ability to perceive emotions in oneself and others. In comparison with the CG, the ability to perceive emotions increased in the TG only. However, neither the TG nor the CG showed better ER abilities directly after WEIT. Taken together, Hypothesis 1a was only partially supported. With respect to the question of sustainability, we found that short-term effects remained stable in the TG, but the CG participants showed a significant improvement in the ability to perceive emotions between Times 2 and 3. However, results concerning the EP branch have to be treated with caution because the groups did not differ significantly from each other at Time 3. Concerning ER, we found that the ability to regulate emotions in oneself and others increased significantly in both groups, and the TG had larger improvements than the CG. Thus, Hypothesis 1b was also partly supported.

Our finding that the EP abilities of the TG (but not the CG) improved directly after training is in line with previous research that showed the effectiveness of face-to-face EI training (e.g., Di Fabio & Kenny, 2011). By contrast, in the current study, we did not find long-term effects for the EP branch in terms of significant group differences between the TG and CG. However, results showed that improvements in the

Table 2
Means, Standard Deviations, and Significant Differences between Time 1 and Time 2 for each Variable and each Group

Variable	TG (n = 59)					CG (n = 75)					t	p
	Time 1		Time 2			Time 1		Time 2				
	M	SD	M	SD	t	M	SD	M	SD	t		
MSCEIT EP	4.28	1.47	3.90	1.57	1.96	4.46	1.66	4.58	1.79	-0.81	.05	.42
MSCEIT ER	4.77	1.41	5.02	1.49	-1.50	4.81	1.29	5.12	1.48	-1.88	.14	.07
Irritation	1.71	0.33	1.70	0.36	0.27	1.60	0.25	1.66	0.32	-2.18	.79	.03

Note. N = 134. For Irritation, one case was deleted due to missing data at Time 2. Due to a reverse score square root transformation, the interpretation of the variables is reversed. TG = training group; CG = control group; MSCEIT = Mayer-Salovey-Caruso Emotional Intelligence Test; MSCEIT EP = MSCEIT emotion perception branch; MSCEIT ER = MSCEIT emotion regulation branch; Time 1 = prior the intervention; Time 2 = at the end of the intervention (after the 4-week online follow-up).

Table 3
Means, Standard Deviations, and Significant Differences between Time 2 and Time 3 for each Variable and each Group

Variable	TG (n = 49)						CG (n = 61)						
	Time 2			Time 3			Time 2			Time 3			
	M	SD		M	SD		M	SD		M	SD	t	p
MSCEIT EP	3.96	1.67		3.87	1.77	0.56	4.52	1.74		4.18	1.75	2.63	.01
MSCEIT ER	5.03	1.49		4.16	1.56	5.24	5.16	1.33		4.72	1.34	2.27	.03
Irritation	1.70	0.37		1.75	0.33	-1.28	1.65	0.32		1.69	0.33	-1.37	.18

Note. N = 110. For Irritation, one case was deleted due to missing data at Time 2. Due to a reverse score square root transformation, the interpretation of the variables is reversed. TG = training group; CG = control group; MSCEIT = Mayer-Salovey-Caruso Emotional Intelligence Test; MSCEIT EP = MSCEIT emotion perception branch; MSCEIT ER = MSCEIT emotion regulation branch; Time 2 = at the end of the intervention (after the 4-week online follow-up); Time 3 = 6 weeks following the intervention.

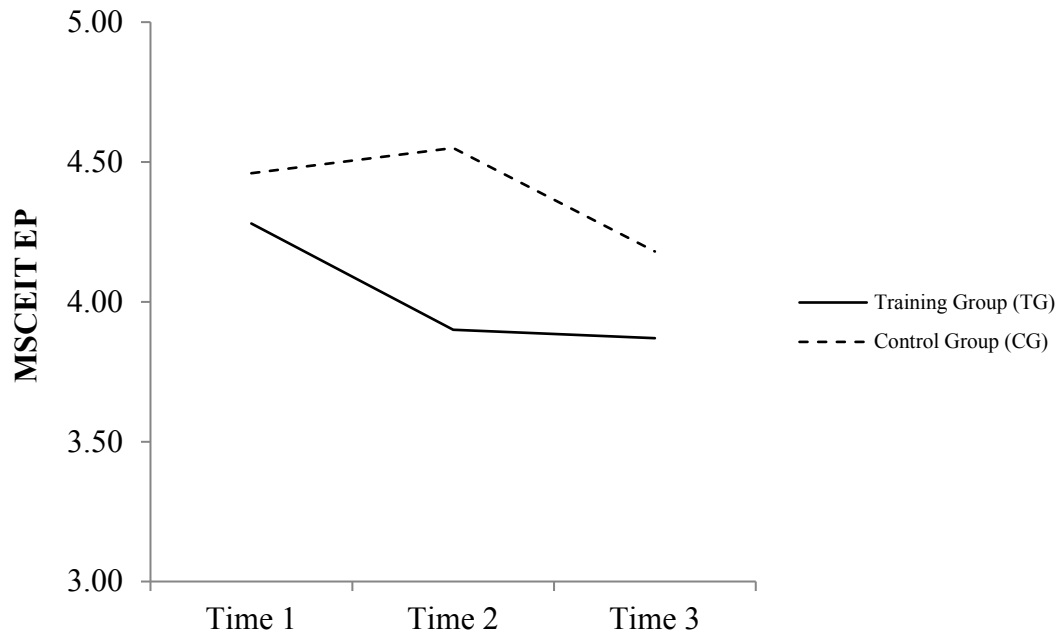


Figure 1. Effect of WEIT on emotion perception assessed by the MSCEIT across three time points. Due to a reverse score square root transformation of the dependent variable, the interpretation of the figure is reversed such that a decrease reflects an improvement in the ability to perceive emotions in the self and others. The sample size at Time 3 (TG: $n = 49$, CG: $n = 61$) differed from the sample sizes at Times 1 and 2 (TG: $n = 59$, CG: $n = 75$) for both groups due to unsystematic dropout. Time 1 = prior the intervention; Time 2 = at the end of the intervention (after the 4-week online follow-up); Time 3 = 6 weeks following the intervention.

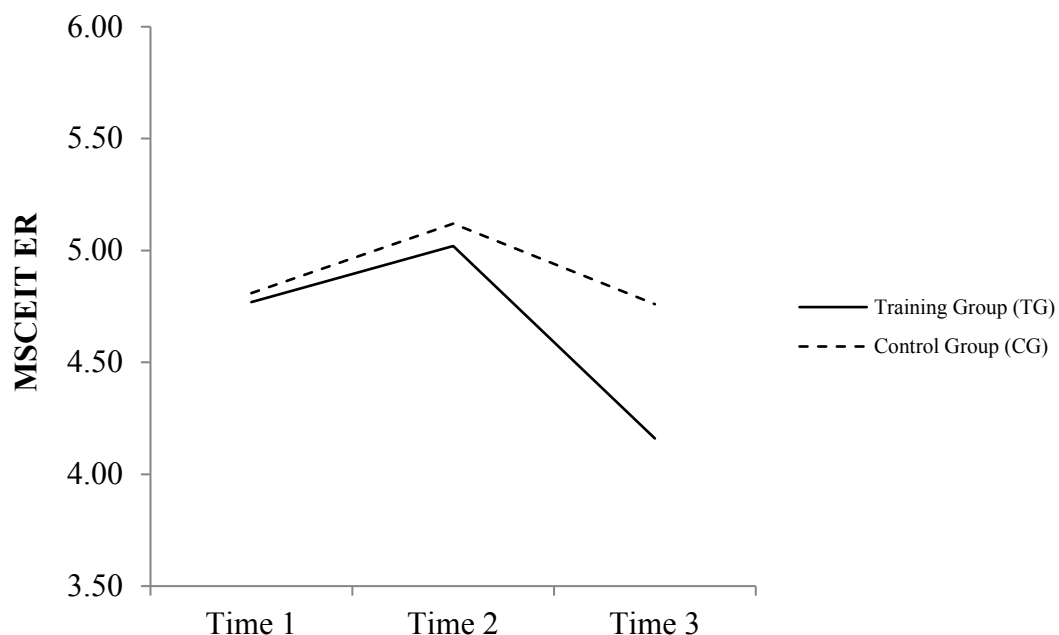


Figure 2. Effect of WEIT on emotion regulation assessed by the MSCEIT across three time points. Due to a reverse score square root transformation of the dependent variable, the interpretation of the figure is reversed such that a decrease reflects an improvement in the ability to regulate emotions in the self and others. Sample size at Time 3 (TG: $n = 49$, CG: $n = 61$) differed from the sample sizes at Times 1 and 2 (TG: $n = 59$, CG: $n = 75$) for both groups due to unsystematic dropout. Time 1 = prior the intervention; Time 2 = at the end of the intervention (after the 4-week online follow-up); Time 3 = 6 weeks following the intervention.

ability to perceive emotions remained stable in the TG. The finding that the EP abilities of the CG—but not the TG—improved from posttest to follow-up was indeed surprising but may be due to test-retest effects. In general, only a few studies have investigated long-term training effects of EI interventions. Indeed, a recent meta-analysis by Hodzic et al. (2018) showed that studies that were aimed at examining long-term changes in EI chose an average time interval of approximately 4 months between the posttest (directly after training) and the follow-up test. By contrast, the time interval in this study was only 6 weeks for practical reasons, but this duration may have been too short to show additional effects on EP. Alternatively, the lack of long-term changes in EP in this study could be due to the training concept. For example, once participants completed their training, they neither had access to the training material nor did they receive a detailed handout after completing WEIT, and this might have reduced transfer effects.

In contrast to our hypothesis, the ability to regulate emotions in oneself and others did not improve directly after WEIT. This finding does not concur with meta-analytic results on face-to-face training (e.g., Schutte et al., 2013). However, participants' ER abilities improved from posttest to follow-up. As ER constitutes the most complex facet of Mayer and Salovey's (1997) model, it is plausible that participants need more time to apply and internalize the skills associated with ER. In this vein, a recent EI intervention study by Herpertz, Nezlek, and Schütz (2019) underscores the importance of improving basic abilities such as EP in order to improve more complex ER abilities.

In order to test the effectiveness of WEIT, we further investigated which benefits (i.e., less perceived stress) resulted from such an EI intervention. However, with regard to Hypotheses 2a and 2b, we found neither short-term nor long-term training effects for perceived stress. This result is in contrast to studies showing that face-to-face EI training can reduce stress (e.g., Kotsou et al., 2011). However, other studies have failed to find such training effects. For example, in a sample of university students, Görgens-Ekermans, Delpont, and Du Preez (2015) found that perceived stress did not decrease following an EI intervention. However, the current study showed that participants in the CG experienced more stress at Time 2 than at Time 1, whereas the stress levels of the TG did not increase after they completed WEIT, which corresponds to the expected training effects. Missing effects on perceived stress may also be due to the training concept. In general, WEIT was designed as a relatively short intervention (4 hr in total, followed by a 4-week online practice period comprising one brief transfer exercise per week). Face-to-face

interventions that successfully enhanced EI and EI-related outcomes lasted much longer—at least 15 to 18 hr—and implemented longer breaks between each session to enhance transfer (e.g., Kotsou et al., 2011). Another explanation may be that the WBT format might not be suited for improving perceived stress. Even though online stress interventions have been shown to be effective overall (see also Heber et al., 2017), web-based positive psychological interventions tend to have smaller effects than face-to-face interventions (Koydemir, Sökmez, & Schütz, 2018).

Limitations and Future Research

First, the sample consisted of students. Although business students may represent the leaders of tomorrow, the results cannot be transferred directly to managerial staff in a work environment. Thus, future research should replicate the findings in a sample of leaders.

Second, in terms of the research design, the current study did not make use of an active CG for practical reasons. Future studies should thus include an active CG that completes a separate intervention (e.g., time management training) in order to make sure that the training effects found in this study are specific to the treatment. In addition, in future research, both performance tests and ability-based self-report scales should be used to capture different aspects of EI. Besides, the reliability of the MSCEIT ER subtask was relatively low even if it was comparable to other research (see, e.g., Steinmayr et al., 2011). Thus, additionally using self-report ER scales and performance-based measure with better reliability would be useful. In addition, the time interval between the posttest and follow-up test was only 6 weeks for practical reasons. A longer interval (e.g., at least 6 months) as well as subsequent measurement points may be helpful for finding long-term effects.

Third, we decided to enhance EI through WBT and designed a rather brief intervention with a total duration of approximately 4 hr plus a subsequent online practice period to meet the time constraints associated with holding a leadership position. However, a longer duration may yield stronger results (see Hodzic et al., 2018). Thus, it may be reasonable to extend the duration of WEIT and spread it over a longer time period in order to foster training effects. Finally, WEIT did not provide maximum flexibility. For example, participants were able to work on the modules only on weekdays. In future studies, participants could be given the opportunity to work through the modules on

weekends, which may comply with leaders' time constraints and thus reduce dropout. Moreover, future studies could test a blended learning format (Erpenbeck et al., 2015) to combine the advantages of face-to-face training and WBT.

Practical Implications

EI has been found to be an important personal resource in work settings (Côté, 2014; Schütz & Koydemir, 2018). Leaders in particular benefit from high EI (e.g., Rosete & Ciarrochi, 2005). Thus, training leaders—through face-to-face training, WBT, or a combination of the two—appears to be a reasonable and useful approach for organizations. Especially for leaders, the WBT format comes with some crucial advantages such as high flexibility. Indeed, based on the results of the current study, WEIT—as a web-based alternative for improving the EP and ER abilities of future leaders—appears promising but needs further refinement and validation. For example, the study results suggest that the ability to perceive emotions improves rather quickly and that the enhancement of ER ability needs more time. For EI training, this means that training programs should start with EP and then move to modules for improving ER. These modules should be longer and more intensive (see Hodzic et al., 2018) to be able to achieve short-term improvements.

Conclusion

The present study evaluated a WBT program that was aimed at improving participants' abilities to perceive and regulate emotions in themselves and others in a sample of future leaders. Our results showed that whereas EP increased directly after WEIT and remained stable 6 weeks later, ER improved only in the long run. The results call for refinement and validation of WEIT.

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GENERAL DISCUSSION

Leaders are exposed to many job demands and are thus at risk of developing health problems. Leaders' impaired health can subsequently have serious consequences for employees as well as for organizations. However, the health of leaders has not received much attention in research. The present dissertation was therefore aimed at extending research on leaders' health. Specifically, three empirical studies were conducted in order to shed light on this topic from different perspectives. Whereas Study 1 examined the crossover process and the underlying effect of leaders' impaired health on the health of their employees, Studies 2 and 3 dealt with two different health-promoting interventions for leaders, one investigating the antecedents (Study 2) and the other investigating the consequences of the respective measure (Study 3).

In the following sections, the findings of the studies are summarized and integrated. Moreover, the limitations of this dissertation and its implications for research and practice are discussed. This chapter will end with a general conclusion.

Overall Summary and Integration of the Study Results

Data from Studies 1 and 2 stemmed from the same research project and thus built on the same theoretical foundation: the HoL concept (see Chapter 1). However, whereas Study 1 concentrated on leaders' StaffCare behavior as a mediator in the crossover process from leaders to their employees, Study 2 focused on the antecedents of leaders' SelfCare behavior. Study 1 was a longitudinal field study using data from different sources in order to examine crossover effects between leaders and their employees. The study referred to the question of how leaders' impaired health affects the health of their employees. Direct processes via emotional contagion as well as indirect processes via reduced StaffCare behavior were expected to occur. Results showed that exhausted leaders engaged less in health-promoting leadership behavior and thus had adverse effects on employees' somatic complaints. A direct crossover effect was not found. Only a few studies have investigated the crossover between leaders and their employees (Bakker et al., 2009; Skakon et al., 2010). This study therefore adds to existing crossover research and offers a better understanding of its underlying mechanisms. Studies have already shown that, on the one hand, leaders' health and well-being affect their leadership behavior (Harms et al., 2017). On the other hand, many studies have demonstrated that leaders' behavior affects the health and well-being of their employees (Harms et al., 2017; Kuoppala, Lamminpää, Liira, & Vainio, 2008; Skakon et al., 2010). Results of the

first study in this dissertation bring these two research findings together: Leaders transfer their poor health to their employees through their reduced health-promoting leadership behavior. By investigating leaders' StaffCare behavior as a mediator in the crossover process, Study 1 further underlines the important role of health-specific leadership behaviors in leader-employee relationships.

Study 2 built on the findings of Study 1 by introducing SelfCare behavior as a means to improve leader health. The second study in this dissertation investigated the personal antecedents of leaders' SelfCare behavior. Using a cross-sectional research design and data from a sample of leaders, the study tested how and under which conditions CSEs affect SelfCare behavior. Exhaustion was expected to mediate and OHC was expected to moderate this relation. Results confirmed that CSEs were linked to SelfCare behavior directly as well as indirectly through reductions in leaders' feelings of exhaustion. OHC did not moderate the relation between CSEs and SelfCare behavior. The findings of Study 2 emphasize the importance of leaders' positive self-evaluations for their self-directed health-promoting leadership behavior. CSEs thus represent an important resource with regard to leaders' health as they affect the extent to which leaders take care of themselves and their health issues. Engaging in health behavior, in turn, would help them build new resources. The result is in line with research on personality and health behavior (e.g., Booth-Kewley & Vickers, 1994; Hall, Fong, & Epp, 2014).

In comparison with the connection between Studies 1 and 2, which are connected with each other by a common theoretical basis, Studies 2 and 3 are linked through their prospects for health promotion. In contrast to Study 2, the third study in this dissertation focused on the consequences of a health-promoting intervention for future leaders. A controlled experimental design with three measurement points was used to evaluate the short-term and long-term effects of a web-based EI training program. Given the strong link between EI and health, it was hypothesized that the WEIT program (see Chapter 4) would lead to improvements in the future leaders' abilities to perceive and regulate emotions and would lower perceived stress which represents a precursor to ill-health. The results showed that WEIT was mostly successful in increasing emotion perception and emotion regulation. There were no improvements in perceived stress after the training program. The findings of Study 3 provide support for the effectiveness of the web-based training program in terms of EI abilities. However, the web-based training program was not successful when it came to health-related outcomes (i.e., perceived stress). This

finding is in contrast to other studies that have shown that face-to-face EI training can impact participants' health and well-being (e.g., Kotsou et al., 2011; Nelis et al., 2011). Indeed, a recent meta-analysis by Koydemir, Sökmez, and Schütz (2018) demonstrated that positive web-based psychological interventions have smaller effects on well-being outcomes than face-to-face interventions do, offering a possible explanation for the missing health-related training effects of WEIT.

The studies in this dissertation used different but complementary theoretical and methodological approaches inside the research field on leader health in order to complement the respective single findings. Indeed, there are also fundamental similarities between the dissertation's studies and these similarities help put the core findings of each study into a broader context.

As previously mentioned, Studies 1 and 2 share a theoretical background. They both built on the HoL concept although they concentrated on different aspects inside the house of HoL (see Figure 1 on page 9). Overall, the results of the two studies affirmed and extended research on the HoL concept. Study 1 confirmed the proposed link between leaders' own health and the health of their employees through leaders' StaffCare behavior. In addition, Study 2 extended previous research on the HoL concept by focusing on leaders' SelfCare behavior and by taking antecedent and environmental factors outside of the house of HoL into account. All in all, the studies provide support for the important role of leaders' self- and other-directed health-specific leadership for the health of leaders and employees alike. By focusing on the behavioral component of SelfCare and StaffCare in particular, they further offer concrete starting points from which to protect and promote health.

Studies 2 and 3 both have prospects for health promotion. The two studies assessed different health-promoting interventions for leaders and looked at them from different points of view. Study 2 investigated the personal antecedents of leaders' self-directed health-promoting leadership behavior, and Study 3 examined the health-related consequences of a web-based intervention, which was aimed at improving EI abilities in future leaders. Overall, interventions that build on the findings from Study 1 by targeting leader health are important and needed.

Study 2 demonstrated that leaders differ in how likely they are to engage in health behaviors, underlining the important role of personality in health-promoting interventions. In Study 3, the web-based EI intervention failed to affect health-related

outcomes (i.e., perceived stress) in future leaders (i.e., business students). Following the line of thinking related to personality, the question of *who* might benefit from a web-based EI intervention in terms of improved health arises with respect to explaining missing health-related training effects. For example, in a sample of university students, De Vibe et al. (2015) showed that baseline conscientiousness moderated the effect of a mindfulness intervention on study stress. In this vein, Herpertz, Schütz, and Nezelek (2016) found that business students benefited more from EI training if they were high in conscientiousness compared with those who were low in conscientiousness. In addition, a meta-analysis on the transfer of training effects by Blume, Ford, Baldwin, and Huang (2010) demonstrated that conscientiousness was moderately positively related to training transfer. Conscientiousness, however, has been found to be positively associated with subjective well-being indicators (e.g., Hayes & Joseph, 2003; Soto, 2015). Further, leaders' SelfCare behavior, which was addressed in Study 2, is supposed to directly affect leaders' health which has been confirmed empirically (Franke et al., 2015; Franke & Felfe, 2011). In contrast, the web-based EI intervention was aimed at influencing the health of future leaders by helping them develop better emotional abilities. Thus, the web-based EI intervention was primarily designed to improve EI abilities rather than to promote health. Consequently, health-specific training programs for leaders might be better suited for this purpose (Lustria et al., 2013).

Limitations

This dissertation has several limitations that need to be closely considered in order to interpret the findings properly.

Samples

One important limitation of this dissertation refers to the samples used in each study. In all three studies, the sample size was rather small. First, this fact calls the statistical power of the studies into question, and it also limits the representativeness of the samples (Bortz, 2005). Referring to the latter aspect, the participants in each of the three studies were from Germany, lowering the extent to which the results are likely to generalize to other cultural backgrounds. In addition, Study 3 was based on a business student sample. A recent study by Hanel and Vione (2016) showed that students clearly differ from the general population in terms of personal and attitudinal variables, and thus, results from student samples cannot be assumed to generalize to the general public.

Where this dissertation is concerned, the results from Study 3 cannot simply be transferred to a sample of leaders. Nevertheless, this dissertation strongly benefitted from a representative leader sample in Studies 1 and 2.

Research Designs

Study 2 used a cross-sectional research design, and thus, causal interpretations of the results are limited (Gollwitzer, Eid, & Schmitt, 2015). Reverse causation is possible within the proposed meditation model. For example, it might be possible that leaders with high CSEs more often engage in SelfCare behavior and thus experience less exhaustion. The results of Study 2 should therefore be replicated using a longitudinal research design in order to confirm the proposed causal links in the model. In contrast to Study 2, Studies 1 and 3 employed longitudinal research designs, thus providing stronger support for causality in comparison with cross-sectional research designs (Gollwitzer et al., 2015). Indeed, experimental designs are needed to apply causal interpretations (Bortz, 2005; Gollwitzer et al., 2015). Thus, replicating the results of Study 1 using a controlled experimental design would further support the study's findings. In contrast to Study 1, Study 3 employed a controlled experimental design, which, on the one hand, is advantageous for causality and thus provides high internal validity. On the other hand, the experimental research design is disadvantageous for the generalizability of the study results, lowering its external validity. Indeed, Studies 1 and 2 are field studies and thus benefit from high external validity. The combination of field and controlled research settings is an important strength of this dissertation and underpins its findings.

Measures

In all three studies, questionnaires were the primary form of data collection. This is problematic because questionnaires are vulnerable to self-enhancement and socially desirable responding (Furnham, 1986). Indeed, Study 3 used a performance-based test to assess leadership competencies (i.e., EI abilities) more objectively. Objective measures in terms of psychophysiological recordings were not included in any study. However, especially with regard to leader health, objective health measures such as blood pressure or skin conductance should be integrated into future research in order to complement the dissertation's findings (Gollwitzer et al., 2015).

In addition, Studies 2 and 3 relied solely on self-reports but did not include other-source data in order to rule out common source effects (Podsakoff, MacKenzie, Lee, &

Podsakoff, 2003). The combination of self- and other-reports is especially important when it comes to employee reports of leader behavior. For example, implicit leadership theories (common rater effect; Podsakoff et al., 2003) may influence leaders' responding on health-related outcomes (Barling & Cloutier, 2016). Indeed, in Study 1, the data were obtained from different sources (i.e., employees rated their leaders' StaffCare behavior), which can be considered a noteworthy strength of this dissertation.

Analytical Procedures

Many analytical procedures require large sample sizes. As mentioned previously, the sample sizes were relatively small in the studies contained in this dissertation, thus preventing us from using the preferred analytical techniques and thus somewhat undermining the explanatory power.

In Study 1, when two employees rated the same leader, their answers were aggregated by forming the average. Bakker, van Emmerik, and Euwema (2006) argued that the aggregation of answers from different individuals is problematic because "looking at the average leads to ignoring information" (p. 215). Rather, a multilevel perspective would be appropriate in this case. The multilevel perspective plays an important role in organizational research because there are different levels of analysis (e.g., employees are nested in teams, teams are nested in departments, and departments are nested in organizations), which need to be considered (Kozlowski & Klein, 2000; van Dick, Wagner, Stellmacher, & Christ, 2005). Actually, the data set used in Study 1 consists of two hierarchical levels: Employees (Level 1) are nested in teams with each team being directed to one leader (Level 2). Given that the sample size of employees per leader was sufficient, Study 1 would profit from testing a multilevel model to provide further evidence for the robustness of the crossover effect.

In Study 3, we used a mixed ANOVA to test for the training effects. Indeed, multiple-group SEM analyses of latent means would be a much more promising approach in this case. According to Herpertz et al. (2016), "the main purposes of SEM are (a) to reduce the measurement error, (b) to test intervention effects on latent levels, (c) to handle potential problems due to the repeatedly measurement of the same measures, and (d) to test for measurement invariance across time and groups" (see page 1 of the supplementary material). Thus, replicating the findings in a somewhat larger sample by using multiple-group SEM in comparison with mixed ANOVA would indicate the effectiveness of the web-based EI intervention.

Implications for Research and Practice

In the following, the overall implications for research and practice of this dissertation are discussed. First, the implications for research that can be derived from Studies 1 and 2, which have the same theoretical background, are presented. Then, taking into account the intervention focus applied in Studies 2 and 3, the practical implications are illustrated.

Implications for Research

One aim of this dissertation was to examine the negative effects of leaders' impaired health on the health of their employees. More precisely, in Study 1, it was argued that leaders transfer their poor state of health to their employees through reductions in leaders' health-promoting leadership behavior. This indirect behavioral crossover effect was confirmed by the first study in this dissertation. Although this direction of influence (i.e., leaders affecting employees) makes sense theoretically (Barling & Cloutier, 2016) and empirically (Harms et al., 2017; Kuoppala et al., 2008; Skakon et al., 2010), reciprocal crossover effects from employees to leaders may also take place. Researchers have argued that employees affect their leaders' thoughts, behavior, and feelings through bottom-up processes (Emmerich, 2001; Rigotti, Emmerich, & Holstad, 2015). For example, leader-member exchange (Graen & Uhl-Bien, 1995) theory proposes that leaders and their employees form unique exchange relationships where ideally both profit from one another. On the basis of this line of thinking, Eberz and Antoni (2016) introduced the Systemic Salutogenic Interaction Model (SSIM). The SSIM emphasizes the fact that the relationship between leaders and employees is characterized by "health-promoting interaction dynamics" (Eberz & Antoni, 2016, p. 265) and suggests that employees can also influence the health of their leaders. To extend the dissertation's findings, future studies should thus clarify the ways in which health-related reciprocal crossover effects between leaders and followers exist.

Referring to the common theoretical basis of Studies 1 and 2, future research should further strengthen the empirical foundation of the HoL concept. As illustrated in Figure 1 (see page 9), the aim of the HoL concept is to investigate whether leaders' health-specific leadership behavior (in terms of SelfCare and StaffCare) contributes to employees' health (Franke et al., 2014). Franke et al. (2014) operationalized employees' health with different indicators, namely, state of health, health complaints, irritation, and

work-family conflict. Study 1 in this dissertation adds other indicators (i.e., employees' somatic complaints, leaders' exhaustion), which plays an important role when it comes to work-related ill-health (Demerouti et al., 2001; Ganster & Rosen, 2013; Schaufeli & Taris, 2014). However, in order to further validate the HoL concept, future research should test the leadership-health link using additional work-related health indicators. For example, offering a salutogenic perspective, Eberz and Antoni (2018) introduced sense of work coherence (work-SoC; Bauer & Jenny, 2007; Bauer, Vogt, Inauen, & Jenny, 2015) as an indicator in the context of employee health and showed that StaffCare behavior assessed with the HoL instrument (Franke et al., 2014), transformational leadership assessed with the MLQ (Felfe, 2006), and salutogenic leadership assessed with the TIMP inventory (Eberz & Antoni, 2018) were significantly related to this construct. Further, building on the AL model (Ganster & Rosen, 2013), the use of physiological health indicators—in addition to psychological (e.g., irritation, exhaustion) and psychosomatic (e.g., somatic complaints) ones—would underpin the empirical foundation of the HoL concept.

However, the HoL concept is only one of multiple health-specific leadership concepts that have arisen in the last decade. Health-specific leadership concepts have been shown to explain additional variance in health outcomes beyond general leadership concepts such as transformational leadership. For example, Franke et al. (2014) demonstrated that StaffCare shows incremental validity beyond leaders' transformational leadership. Vincent (2011, 2012) found similar results. She showed that health-specific leadership had independent effects on different health outcomes above and beyond the effects of transformational leadership. Further, Eberz and Antoni (2018) validated an instrument (i.e., the TIMP inventory) that was designed to measure the core factors (i.e., trust, incident management, and pressure) of salutogenic leadership and found that the factors explained more variance in the Work-SoC health indicator than transformational leadership did. However, as yet, there has been no comparison of different health-specific leadership concepts with respect to their impacts on different health indicators in order to identify the best possible predictor. Future research would thus benefit from comparing different health-specific leadership concepts with one another to indicate their relative importance for the health of both employees and leaders.

Another starting point for future research refers to the importance of investigating environmental factors in the health-promoting leadership process. Researchers have

already pointed out the importance of integrating situational conditions in order to strengthen the practical relevance of health-specific leadership concepts (Eberz & Antoni, 2016; Jiménez et al., 2017). The HoL concept by Franke et al. (2014) neglects environmental factors that lie outside of the house of HoL. Study 2 in this dissertation focused on the interplay of personal leader characteristics and contextual factors and thus made a first attempt to broaden the HoL perspective. Indeed, Study 2 failed to support a person-situation interactionist approach. Taken together, future research would benefit from investigating the impact of other environmental factors (see Chapter 3 for examples) on the different stages of the health-promoting leadership process in order to provide a better understanding of how the health of both leaders and employees can be supported.

Further, Study 2 showed that the ways in which leaders take care of their health issues are determined by their personality. Leaders' self-directed health-promoting leadership builds the foundation of the HoL concept and is supposed to positively affect the health of their employees but also to lead to better health for themselves. Empirical studies have already confirmed the hypothesis that leaders who engage in proper SelfCare experience better health (Franke et al., 2015; Franke & Felfe, 2011). Indeed, it remains an open question whether the personal characteristics of leaders are also related to their health. In this vein, studies have shown that personality is associated with individuals' health and that this relation is (at least partially) mediated by health behaviors (Maas & Spinath, 2012; Williams, Abbott, & Kerr, 2016). On the basis of this reasoning, future research should investigate the personality-health link for leaders, focusing on how they address their health issues as an underlying mechanism.

Implications for Practice

Study 1 showed that leaders' impaired health resulted in negative health-related consequences for their employees, thus emphasizing the need for health-promoting interventions for leaders. Health-promoting interventions targeting leaders' health are scarce. Existing interventions either focus on employees or are aimed at teaching leaders to improve the health of their subordinates. Consequently, Studies 2 and 3 in this dissertation provide prospects for promoting leaders' health and can thus offer important practical implications for organizations and their members.

Study 2 showed that leaders' personality influences how they address their health. Two starting points for the development of organizational measures arise from this result: First, organizations might benefit from considering personality measures (i.e., CSEs) in

personnel selection decisions. Personality measures have been used more frequently in personnel selection for the last decade because knowing about individuals' stable characteristics can offer guidance regarding their future behavior in today's ever-changing working world (Hossiep, Shecke, & Weiß, 2015). Organizations, for example, often capture emotional stability (or neuroticism)—one core trait of the CSE construct—to predict future performance (e.g., Hossiep & Paschen, 2003). However, Study 2 of this dissertation shows that also more global personality traits might be helpful when organizations want to find the best candidate for a respective leadership position. Secondly, organizations might also invest in personnel development measures in order to foster leaders' CSE traits and thus their health behavior. For example, personnel development measures could strengthen leaders' emotional stability via training or their self-efficacy via job rotation or job enlargement. Indeed, because of the limited study design of Study 2, the resultant practical implications should be handled with caution and should be underpinned by further research.

Further, Study 2 suggests that it is important to create an appropriate environment in order to facilitate leaders' SelfCare behavior. Study 2 investigated whether the organizational health climate moderates the relation between leaders' personality and their self-directed health behaviors but failed to find such an interaction effect. Indeed, Eriksson et al. (2011) found that in addition to organizational conditions (e.g., organizational culture, financial support), leaders' individual characteristics (e.g., knowledge, attitudes) and the support they receive (e.g., exchanges with [senior] colleagues) influence the ways in which leaders engage in health-promoting behaviors. Specific knowledge and skills related to how to lead themselves (and others) in a health-promoting way can, for example, be enhanced through training. Organizations should thus offer leaders opportunities to engage in training programs that include basic information about health and health promotion as well as exercises that will help them apply what they have learned. Eriksson et al. (2011) identified support to leaders, in particular, as a determining factor for the development of health-promoting behavior. The authors emphasized that leaders "often expressed a need for supervision from a senior colleague or a professional coach in order to cope with their work" (Eriksson et al., 2011, p. 81). Consequently, mentoring or coaching could help leaders to facilitate health-promoting leadership behavior. Indeed, Barling and Cloutier (2016) argued that "the fear of being stigmatized for looking weak might be sufficient to keep leaders from seeking

assistance” (p. 7) and thus from taking care of themselves. Consequently, the stigmatization of health problems should be addressed in personnel development measures (i.e., training, coaching, or mentoring) for leaders. In this vein, Hamann, Mendel, Reichhart, Rummel-Kluge, and Kissling (2016) demonstrated that a “‘mental-health-at-the-workplace’ educational workshop” (p. 61) reduced the stigma of depression in leaders. In addition to support from the top, St-Hilaire, Gilbert, and Brun (2017) argued that leaders also share responsibilities with their employees (see also the Implications for Research in Chapter 5). In a qualitative interview study, St-Hilaire et al. (2017) identified 38 concrete employee behaviors (e.g., expressing satisfaction with the manager, making proposals, developing rituals) that are aimed at reducing work stressors and thus at promoting better (mental) health for leaders. However, St-Hilaire et al. (2017) emphasized that dealing with leaders’ health at work “appeared to be a new and unusual experience” (p. 15) for employees. Thus, organizations should start to support a culture of shared responsibility (St-Hilaire et al., 2017) to improve organizational conditions. They should also develop health-promoting interventions that target leaders and employees alike in order to create healthy workplaces and healthy individuals (Eberz & Antoni, 2016).

In comparison with Study 2, which concentrated on the antecedents of a health-promoting intervention for leaders, Study 3 focused on the health-related consequences of a web-based EI intervention. Whereas WEIT improved EI abilities in leaders, it failed to lower perceived stress as a precursor for ill-health. Thus, the implementation of the WEIT program as a measure for promoting leader health cannot be recommended at this time. Indeed, the web-based training format remains a very efficient way for leaders to improve their leadership competencies (i.e., EI abilities).

Conclusion

Leaders are confronted with high job demands and are thus prone to developing health problems. Indeed, the health of leaders has thus far been neglected in research. This dissertation was based on three empirical studies that were aimed at extending research on this topic. First, this dissertation demonstrated that leaders transfer their poor health to their employees in a behavioral crossover process, emphasizing the need for health-promoting interventions for leaders. To facilitate leaders’ self-directed health-promoting leadership behavior as a way to promote health, this dissertation provided

evidence for the pivotal role of leaders' personality. In addition, this dissertation showed that the organization can offer an efficient measure (i.e., the WEIT program) to improve leaders' health relevant abilities (i.e., the ability to perceive and regulate emotions) but not their health. Future research is needed to eliminate some of the methodological problems of this dissertation and to further validate its findings.

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