





# A leader in need is a leader indeed? The influence of leaders' stress mindset on their perception of employee well-being and their intended leadership behavior

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## Abstract

The ability to respond appropriately to employees' work-related well-being requires leaders to pay attention to their employees' well-being in the first place. We propose that leaders' stress mindset, that is, the belief that stress is enhancing versus debilitating, may bias their perception of employees' well-being. We further propose that this judgment then influences leaders' intention to engage in or refrain from health-oriented leadership behavior, to express higher performance expectations, or to promote their employees. We expect this process to be stronger if leaders strongly identify with their team, increasing their perceived similarity with their employees. In three experiments ( $N_1 = 198$ ,  $N_2 = 292$ ,  $N_3 = 250$ ), we tested the effect of participants' stress mindset on their intention to show certain leadership behaviors, mediated by their perception of employee well-being (emotional exhaustion, somatic symptoms, work engagement) and moderated by their team identification. Our findings largely support the association between stress mindset and the

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perception of well-being. The results for the proposed mediation and the moderating function of identification were mixed. Overall, the results emphasize the critical role of leaders' stress mindset and may, thus, improve health promotion in organizations by helping leaders to adequately recognize employees' well-being and respond appropriately.

#### KEYWORDS

emotional exhaustion, leadership, stress mindset, team identification, work engagement

## INTRODUCTION

Occupational stress is a ubiquitous phenomenon and a major concern for employees and organizations alike. According to a 2019 survey by the American Psychological Association, 64% of employees in the United States consider their work to be a significant source of stress (American Psychological Association, 2019). Likewise, a report published by the National Institute for Occupational Safety and Health revealed that 40% of US citizens rate their job as “very or extremely stressful” (National Institute for Occupational Safety and Health Working Group, 2014). Leaders play a pivotal role in organizations, and their behavior can have a crucial influence on the experience of stress and on the well-being of their employees (e.g., Harms et al., 2017; Montano et al., 2017). However, the majority of research has focused on the health-related consequences of different leadership behaviors (e.g., Kuoppala et al., 2008; Schyns & Schilling, 2013). This is especially true for health-oriented leadership—a research area that has only recently received increased attention and for which many questions remain open, including why some leaders engage in health-oriented behaviors, such as responding to followers' stress signals, and others do not (cf. Pangert, 2011; Rudolph et al., 2020). Indeed, some leaders may even assign more tasks and raise their performance expectations in stressful situations (e.g., Hunt et al., 1999; MacKenzie et al., 2001).

In the present paper, we aim to address this gap and propose that leaders' *stress mindset*, that is, their general belief about whether stress is harmful or beneficial to health and productivity (Crum et al., 2013), may critically affect leaders' perceptions of their employees' well-being at work, in turn influencing how leaders behave toward their employees. We further propose that leaders' assessment of their employees' well-being should be particularly influenced by their own stress mindset for those leaders who strongly identify with their team. On this basis, we seek to make two main contributions to the stress mindset and leadership literature.

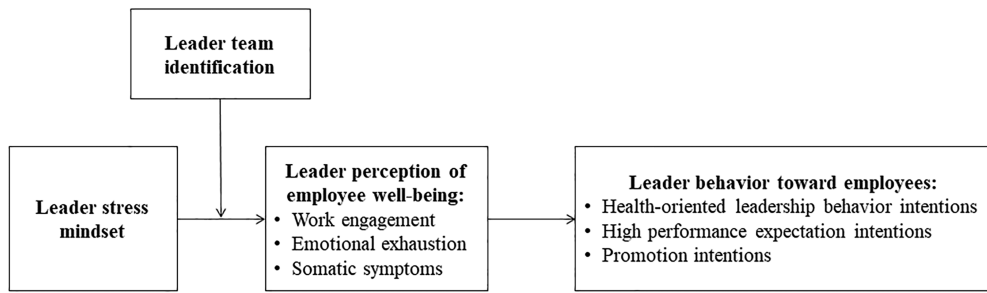
First, previous research has been inconclusive about why some leaders engage in health-oriented leadership behaviors, whereas others focus more on maintaining and increasing performance. Health issues at work are sensitive topics (e.g., Follmer & Jones, 2018), and employees may be afraid to openly express that they feel overworked or stressed. Hence, leaders need to accurately perceive and respond appropriately to the needs and stress signals of their employees to decrease employees' stress and foster their well-being and performance (e.g., Dimoff & Kelloway, 2019). However, not only is stress a subjective experience

(Lazarus, 1995), but individuals also differ in their assumptions about the consequences of experiencing stress. Some people believe that stress is detrimental to health and performance and, as such, should be avoided whenever possible (a so-called “stress-is-debilitating” [SID] mindset; Crum et al., 2013). Others regard stress as motivating and as a source for growth, productivity, and well-being (a so-called “stress-is-enhancing” [SIE] mindset; Crum et al., 2013). By taking a social projection perspective (cf., Hogg & Terry, 2000; Robbins & Krueger, 2005), we argue that when assessing their employees' well-being, leaders project their own stress mindset onto their followers and, through selective perception, focus on the information that is congruent with their own stress mindset (Ames, 2004b; Krueger, 2007). More specifically, we hypothesize that leaders' stress mindset influences their perceptions of employees' well-being, that is, whether employees are exhausted and need recovery or whether they are actively engaged and can be expected to accomplish more tasks. We further propose that leaders' judgment of their employees' well-being, in turn, guides their subsequent health-oriented and performance-oriented behavior toward their employees. Therefore, we examine employees' physical and psychological exhaustion, as well as their work engagement, as separate indicators of well-being, because positive and negative forms of well-being reflect independent dimensions with diverging relations (Howell et al., 2014; Schaufeli & Bakker, 2004).

Second, we aim to contribute to a more nuanced understanding of the benefits of team identification in organizations, that is, the feeling of belonging to the team and to share a sense of “us” (van Dick et al., 2018). Team identification entails many positive effects, such as improved well-being, and, thus, it has been coined as a “social cure” (Haslam et al., 2018; Steffens et al., 2017). However, there are recent debates that social identification might also act as a “social curse,” which can negatively affect health and well-being (e.g., Wakefield et al., 2019). In a similar vein, we argue that leaders' identification with their team can influence leaders' assessment of their employees' well-being, as strong identification might result in a biased perception of others. Strongly identified team members perceive other group members as being more similar to themselves (Ashforth & Mael, 1989; van Dick & Haslam, 2012). Perceived similarity, in turn, increases the likelihood of projecting one's own state and beliefs (e.g., about stress) onto others, as individuals particularly assume that others think and feel the same way they do when they regard the other person as similar to themselves (Ames, 2004a). Hence, we propose that leaders who strongly (rather than weakly) identify with their team are more prone to project their own mindset onto their employees. For example, strongly identified leaders with an SIE mindset may be particularly likely to assume that employees also consider stress to be motivating and enhancing. This may result in an underestimation of employees' stress (i.e., an overestimation of their well-being) and, subsequently, lead to less health-oriented leadership behavior (than necessary) but higher performance expectations (than warranted). In sum, we develop a model that links leaders' stress mindset to their intended leadership behavior via the perception of employees' well-being, moderated by leaders' team identification (see Figure 1).

## THEORY AND HYPOTHESIS DEVELOPMENT

Individual consideration of employees' needs and abilities is not only beneficial for leaders' effectiveness but also for their employees' well-being, and it is positively related to employees' satisfaction with their leaders (e.g., DeRue et al., 2011; Franke & Felfe, 2011; Skakon et al., 2010). Hence, common advice to leaders is to consider their employees as individuals and to respond to each employee's needs individually. For example, an employee with sufficient



**FIGURE 1** Hypothesized model linking leaders' stress mindset and their leadership behavior intentions toward employees

resources can be assigned additional work tasks, whereas employees who are already at their limits should be relieved of some tasks and receive support. Such individualized leadership requires leaders to correctly perceive the current mental and physical conditions of their employees and correctly assess their stress levels.

However, it is a common understanding that the experience of stress is subjective and that individuals differ in their assessment of stress (e.g., Lazarus, 1995). Stress is, in the first place, a nonspecific response of the organism to any demand or stressor (Selye, 1976) and is, thus, rather neutral. However, stress has both positive and negative consequences. As such, stress triggers physical processes that contribute to immunity, strength, and growth (see Crum et al., 2013, for an overview of stress-related growth) but is also related to cardiovascular diseases and depression (Cohen et al., 2007; Melamed et al., 2006; Wang, 2005). Whether stress has positive or negative effects depends on various factors, such as the duration (acute vs. chronic), or psychological factors, such as cognitive appraisal (Jamieson et al., 2018). Recently, scholars (e.g., Crum et al., 2013; Jamieson et al., 2018) have argued that individuals' view on stress, whether they consider stress as something positive and enhancing (i.e., SIE) or negative and debilitating (i.e., SID), their so-called stress mindset, is decisive in determining their experience of stress.

Building on the idea that a mindset reflects a mental lens through which information about a specific topic, such as intelligence (Blackwell et al., 2007; Hong et al., 1999) or failure (Haimovitz & Dweck, 2016), is perceived, selected, and evaluated, a stress mindset represents a general, domain- and situation-unspecific simplifying system (Jamieson et al., 2018). This mental lens affects important work outcomes, including employees' attitudes, motivation, and performance at work (e.g., Casper et al., 2017; Jamieson et al., 2018). For example, people with an SIE mindset perceive stressful events as a challenge ("I can handle this"; Kilby & Sherman, 2016) and use more active coping strategies, such as approach-coping efforts, than those with an SID mindset (e.g., Casper et al., 2017). Experimental research has shown that interventions to reinforce an SIE mindset can improve performance and physical and psychological responses (e.g., reduce symptoms of depression and anxiety; e.g., Crum et al., 2013).

## Social projection of one's own stress mindset

Previous research has largely focused on the implications of the stress mindset for individual employees and, thus, on intraindividual consequences. However, the literature on implicit

theories suggests that mindsets not only influence how we perceive ourselves but also how we perceive others (Dweck & Leggett, 1988).

Social projection theories provide an important theoretical lens for understanding the interpersonal effects of mindsets (e.g., Krueger, 2007; Robbins & Krueger, 2005). These theories suggest that individuals automatically and unconsciously project their own attitudes and states onto others when they are asked to rate their behaviors, cognitions, and emotions (Ames, 2004b). Hence, individuals use their own feelings and preferences as anchors for judging others' feelings and preferences (Epley et al., 2004; Krueger, 2000).

This projection can result in egocentrically distorted perceptions of others, as insufficient consideration is given to the fact that other people may react differently to themselves (e.g., Ames, 2004b; Epley et al., 2004). If individuals have to judge the mental state and needs of others, their mindset will guide their perception of others, and they will mainly perceive and process information that is congruent to their own mindset (Taylor & Gollwitzer, 1995). Initial evidence suggests that this also applies to the stress mindset of individuals. As such, Ben-Avi et al. (2018) found that individuals who hold the belief that stress is enhancing (compared with the assumption that stress is debilitating) estimated the stress level of another person who was experiencing a heavy workload to be lower. This, in turn, influenced their subsequent behavioral intentions, for example, to help the other person.

## Leaders' stress mindset, perceptions, and leadership behavior

Applying this reasoning to the leadership context, leaders' stress mindset may similarly influence their assessment of employees' well-being. Leaders with an SIE mindset (compared with those with an SID mindset) are more likely to interpret their employees' signs of stress, such as not taking breaks or working longer hours, as signs of high work engagement, defined as a "positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli et al., 2002, p. 74). Indeed, engaged employees are less likely to take breaks while at work (Bakker & Oerlemans, 2016) and more likely to work longer hours (Schaufeli et al., 2008). At the same time, leaders with an SIE mindset should perceive less psychological and physical strain in their employees, in contrast to those with an SID mindset. Emotional exhaustion is an important indicator of psychological stress in the job context as a subcomponent of burnout. Emotional exhaustion captures a sense of being stressed and overextended, resulting from chronic exposure to stressors (Maslach et al., 2001; Maslach & Jackson, 1981). Somatic symptoms, such as headaches or stomach or bowel problems, reflect the presence of physical ill-health (e.g., Gierk et al., 2014), which has been shown to be associated with job-related exhaustion (e.g., cardiovascular diseases; Honkonen et al., 2006). Although work engagement can co-occur with emotional exhaustion and somatic symptoms (e.g., Moeller et al., 2018), most studies suggest that these have a typically negative association (Cole et al., 2012). Consequently, it seems plausible to assume that these are also negatively associated in the perception of others. As leaders with an SIE mindset focus on the potential for growth when experiencing stress and interpret stress as an indicator of learning and development (Crum et al., 2013), they might perceive more work engagement of employees in stressful situations and, at the same time, less mental exhaustion or somatic symptoms. Hence, we hypothesize the following:

**H1a.** Leaders with an SIE mindset will perceive higher levels of employee work engagement (compared with leaders with an SID mindset).

**H1b.** Leaders with an SIE mindset will perceive lower levels of employee emotional exhaustion (compared with leaders with an SID mindset).

**H1c.** Leaders with an SIE mindset will perceive fewer employee somatic symptoms (compared with leaders with an SID mindset).

Leaders' perceptions of employees' well-being should, in turn, impact their leadership behavior. Indeed, previous research found that the perception of another person influences one's own behavior toward that person (e.g., Bond & Forgas, 1984; Camps et al., 2014). As such, the perception of an unpleasant body odor (if judged to be beyond the person's control) elicits feelings of pity in others and increases prosocial behavior (Camps et al., 2014). Likewise, the perception of attractiveness and having "normal" body weight (compared with being overweight) leads to a stronger intention to help or hire another person (Chiu & Babcock, 2002; Swami et al., 2008). Moreover, initial evidence shows that perceiving strain in others affects subsequent behavior; the perception that another person is stressed increases the intention to help them (Ben-Avi et al., 2018). Hence, we propose that leaders' stress mindset indirectly influences their leadership behavior through the perception of employees' well-being (i.e., emotional exhaustion, somatic symptoms, and work engagement).

If leaders perceive that an employee is in pain or emotionally exhausted, they may recognize that this employee needs relief from the strain and will show health-promoting support intended to reduce the employee's emotional or physical exhaustion. Such support includes reducing demands, creating healthy workplace conditions, and encouraging employees to engage in positive health behavior at work (e.g., to use workplace health-promotion programs; cf., Franke et al., 2014). Indeed, awareness and recognition of employees' well-being are considered a prerequisite for health-oriented leadership behavior (Franke et al., 2014). The perception that employees are engaged and full of energy at work, however, should elicit less health-promoting support from leaders. Hence, we expect that leaders' stress mindset indirectly affects their intention to support employees in a health-promoting way through their perceptions of employees' well-being. Based on this, we propose the following:

**H2.** Leaders with an SIE mindset report a lower intention to show health-oriented leadership behavior (compared with leaders with an SID mindset). This effect is mediated by (a) more perceived work engagement, (b) less perceived emotional exhaustion, and (c) fewer perceived somatic symptoms.

In addition, leaders use their employees' behavior and attitudes to draw conclusions about their professional capacity and opportunities for career advancement. Based on signaling theory, leaders lack complete information about their employees but must rely on easily accessible and identifiable cues from employees when evaluating them (e.g., Connelly et al., 2010; Spence, 1973). Several studies indicate that leaders use an employee's work engagement as a cue to infer good performance and, hence, rate the employee as more suitable for promotion and as having more career growth opportunities (e.g., Shore et al., 1995; Weer & Greenhaus, 2020). Similarly, leaders may adjust their performance expectations based on employees' signaling. As a result, leaders use these signs of being engaged and of "going the



extra mile” (Schaufeli et al., 2008) to increase their expectations about an employee's future performance. At the same time, a low assessment of exhaustion enhances evaluations of others' promotability (Ben-Avi et al., 2018). Consequently, if leaders recognize that employees in a highly demanding work environment show low levels of physical and psychological exhaustion but are highly engaged, they may interpret it as a signal of good performance, leading them to set higher performance expectations for these employees in the future and to perceive them as more suitable for promotion. Hence, we expect leaders' stress mindset to indirectly influence their intention to express higher performance expectations and promote an employee through their perceptions of the employee's well-being. Specifically, we hypothesize the following:

**H3.** Leaders with an SIE mindset report higher performance expectation intentions (compared with leaders with an SID mindset). This effect is mediated by (a) more perceived work engagement, (b) less perceived emotional exhaustion, and (c) fewer perceived somatic symptoms.

**H4.** Leaders with an SIE mindset report stronger promotion intentions (compared to leaders with an SID mindset). This effect is mediated by (a) more perceived work engagement, (b) less perceived emotional exhaustion, and (c) fewer perceived somatic symptoms.

## The moderating role of team identification

We further assume that not all leaders are equally likely to project their own stress mindset onto their employees, but that this projection process is heterogeneous. According to social projection theory, the automatic projection of one's own attitudes and behavior can be deliberately attenuated or changed if people are aware that differences or similarities exist between themselves and the other person (Ames, 2004a; Epley et al., 2004). As such, the more we perceive others to be similar to ourselves, the more likely we are to project our own experiences onto them.

Perceptions of similarity are critically shaped by individuals' social identities, that is, their perception of oneness with or belonging to a social group (e.g., Ashforth & Mael, 1989). In particular, sharing a social identity, such as being members of the same team, relates to a stronger perception of being similar to the other group members in essential team-defining features, such as sharing similar values or interpreting the work context in a similar way (Haslam, 2004). Moreover, sharing a team identity results in a generalization of the specific behaviors of team members across situations and time (van Dick & Haslam, 2012). Conversely, not sharing a team identity leads to a stronger emphasis on differences between individuals and a focus on situation-specific behaviors. In other words, rather than seeing the individual with their unique attributes, sharing a group membership elicits a process of depersonalization, resulting in a false perception of sharing more attributes than is objectively the case (Hogg & Terry, 2000). This effect is stronger, the more the individual identifies with the respective group.

Due to this false generalization of one's own attributes, experiences, and thoughts about other team members when sharing a social identity, we assume that strongly identified leaders with an SID mindset are more likely to perceive employees as also holding an SID mindset and considering stress to be debilitating, exhausting, and detrimental. Strongly identified leaders with an SIE mindset should be more likely to perceive their employees as holding an SIE mindset and seeing stress as a motivating and manageable challenge. On the other hand,

leaders with lower team identification should be less likely to project their own stress mindset onto their employees. Therefore, we hypothesize that leaders' identification with their team moderates the association between leaders' stress mindset and their perceptions of employees' well-being. Specifically, we hypothesize the following:

**H5.** Leaders' identification with their team moderates the effect of their stress mindset on their perceptions of employee (a) work engagement, (b) emotional exhaustion, and (c) somatic symptoms, such that these effects will be stronger for leaders who strongly identify with their team and weaker for those who weakly identify with their team.

## OVERVIEW OF THE CURRENT RESEARCH

We conducted three experimental studies to test our hypotheses. In Study 1, the scenario and stress mindset manipulation were tested by examining the proposed downstream effect of participants' (manipulated) stress mindset on their intended leadership behavior via the perception of an employee's well-being. These results showed that the scenario and stress mindset manipulation were effective, leading to further examination of the proposed model in two additional preregistered studies (see Supporting Information for the preregistrations and additional material). In these studies, we also tested the proposed moderation of the relationship between leaders' stress mindset and perceptions of employees' well-being by team identification. Study 2 assessed leaders' identification with their team, and Study 3 experimentally manipulated their team identification. Both studies employed a similar study design, namely, a 2 (SID vs. SIE mindset)  $\times$  2 (low vs. high team identification) between-subject design.

## STUDY 1

### Method

#### Participants

Participants were recruited online in the United States via the MTurk platform, and 256 participants answered the online questionnaire. After excluding the outliers based on the a priori exclusion criteria (i.e., failing attention checks; finishing the questionnaire in less than 50% of the median time needed to complete it, as it is hardly possible to seriously answer it in such a short time; indicating current unemployment; providing senseless answers in the stress mindset manipulation; see Supporting Information for details), the final sample size was  $N = 198$  with 53% men and 47% women. The mean age was  $M = 34.80$  ( $SD = 10.22$ , ranging from 20 to 65 years). Most participants worked full-time (85%), and 50% had managerial responsibilities.

#### Procedure

The study consisted of two parts, which were introduced as separate studies. In the first part, participants' stress mindset was manipulated. Because people tend to have an SID



mindset (Clark, 2003; Kinman & Jones, 2005), manipulating the stress mindset seemed advisable and had been successfully implemented in previous research (Ben-Avi et al., 2018). Participants were randomly assigned to either the SID or SIE condition. Participants in the SID condition were asked to recall a situation from their work life in which they found stress harmful. Those in the SIE condition were asked to think of a situation in which stress was useful. The participants then briefly described this situation and completed four sentences regarding their feelings, thoughts, behaviors, and body sensations in this situation (e.g., “If stress affects me in a *negative/positive* way, I feel the following physical sensations ...”; see Supporting Information for a detailed description of the manipulation). As a manipulation check, the participants’ reported stress mindset was measured.

In the second part, participants were asked to imagine that they were the leader of their current team that included an employee named “Ben.” They then read a scenario describing the fictitious employee Ben, who was exposed to very high work demands (e.g., long working hours) and who also had many family demands (adapted from Ben-Avi et al., 2018; the wording of the scenario can be found in the Supporting Information). Participants were then asked to rate Ben’s perceived well-being (e.g., work engagement and emotional exhaustion) and their intention to show health-oriented leadership behavior, to express high-performance expectations, and to promote this employee.

## Measures

The established measures drawn from previous research were adapted to the specific study context. Unless otherwise noted, all measures were presented using a 5-point rating scale ranging from 1 = *strongly disagree/never* to 5 = *strongly agree/always*.

Participants’ *reported stress mindset* was measured with eight items based on Crum et al. (2013), with higher values representing a more SIE mindset. A sample item is “Experiencing stress enhances my performance and productivity” ( $\omega = .87$ ).

*Perceived work engagement* of Ben was assessed using the three-item version of the Utrecht Work Engagement Scale (Schaufeli et al., 2019). A sample item is “... at work, Ben feels bursting with energy” ( $\omega = .73$ ).

The Emotional Exhaustion subscale from the Maslach Burnout Inventory was used to measure the *perceived emotional exhaustion* of Ben with five items (Bakker et al., 2002; Maslach et al., 1996). A sample item is “... Ben feels burned out from work” ( $\omega = .92$ ).

Participants’ intention to show *health-oriented leadership behavior* was assessed using seven items of the Health-oriented Leadership instrument (Franke et al., 2014). A sample item is “I would try to reduce Ben’s demands by optimizing his working procedures (e.g., set priorities, care for undisturbed working, and daily planning)” ( $\omega = .88$ ).

Participants’ *intention to express high-performance expectations* toward Ben was evaluated using three items from the High Performance Expectations subscale of the Transformational Leadership Inventory (Podsakoff et al., 1990). A sample item is “I would show Ben that I expect a lot from him” ( $\omega = .81$ ).

Participants’ *intention to promote* Ben was measured with three items (see Ben-Avi et al., 2018; based on scales by Hoobler et al., 2009, and Tiedens, 2001). A sample item is “Ben should be promoted” ( $\omega = .85$ ).

## Randomization check and control variables

Due to the experimental design, we tested whether participants were randomly assigned to the two stress mindset conditions in terms of their demographics (age, gender), their dispositional optimism, and their current stress. The experience and assessment of stress (perceived in others) can be influenced by a person's general optimism or stress level, as more optimistic individuals perceive less stress and use better coping strategies in stressful situations (e.g., Chang, 1998; Segerstrom et al., 1998), whereas individuals' own stress makes them less sensitive to the demands and strains of others (e.g., Trougakos et al., 2015). Thus, participants' *optimism* was measured using three items from the Revised Life Orientation Test (Scheier et al., 1994). A sample item is "I'm always optimistic about my future" ( $\omega = .86$ ; 5-point scale from 1 = *strongly disagree* to 5 = *strongly agree*). Participants' current *stress level* was assessed using four items from the Perceived Stress Scale (Cohen et al., 1983). A sample item is "In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?" ( $\omega = .84$ ; 5-point scale from 1 = *never* to 5 = *always*).

Furthermore, reading the vignette may have influenced participants' mood, which could explain differences in well-being ratings between the two stress mindset conditions (cf., Ben-Avi et al., 2018). Participants' mood was assessed directly after reading the vignette with one item from the Self-Assessment Manikin (Bradley & Lang, 1994). The item asked "Right now I am feeling ..." and was scored on a 5-point rating scale ranging from 1 = *unhappy* to 5 = *happy*. To eliminate these alternative explanations, we tested whether participants in the two stress mindset conditions differed for these variables. If so, we controlled for them in our analyses.

In addition, to test whether participants' leadership experiences (i.e., whether they held a leadership position in their current job) influenced the results, we also calculated all analyses with leadership position (yes/no) as a control variable. The findings of these additional analyses can be found in the respective footnotes for all studies, and detailed results are provided in the Supporting Information.

## Data analysis

A priori exclusion criteria and how to treat outliers were determined before collecting data (see Supporting Information and preregistrations of Studies 2 and 3 for details). The analyses were conducted using the observed scale means in Mplus (Muthén & Muthén, 1998-2017). We conducted sequential mediation analysis to simultaneously test the impact of the stress mindset condition on the dependent variables (i.e., intention to show health-oriented leadership behavior, intention to express high-performance expectations, and intention to promote) and its indirect effects via the reported stress mindset and well-being perceptions (i.e., the target's perceived emotional exhaustion and work engagement). This is the recommended procedure for testing whether the experimental conditions affected the intended construct (i.e., the stress mindset) rather than testing the effects of the experimental condition itself (Lench et al., 2014). Using this approach allowed us to draw the causal conclusion that difference in mental state, that is, the participants' stress mindset, truly caused the effects (Lench et al., 2014). The well-being variables and intended leadership behaviors were allowed to covary. Given the directional nature of this study's hypotheses, all hypothesis analyses were one-tailed, with the level of significance set at  $p < .05$  (as specified in the preregistrations).

## Results

### Preliminary analyses and manipulation check

Descriptive statistics, reliabilities, and correlations between the observed variables are presented in Table 1. We successfully manipulated participants' stress mindset as participants in the SIE condition reported higher stress mindset scores, indicating a stronger SIE mindset ( $M = 3.36$ ,  $SD = 0.72$ ), than participants in the SID condition ( $M = 2.39$ ,  $SD = 0.78$ ;  $t(196) = -9.05$ ,  $p < .001$ ). Participants in both conditions did not differ in their gender, age, stress level, optimism, or mood ( $p > .05$  for all variables). Hence, randomization to the two conditions was successful, and no covariates were included in the following analyses.

### Hypothesis testing

The results of the sequential mediation model can be found in Figure 2. The overall model showed a good fit to the data:  $\chi^2(5) = 4.11$ ,  $p = .533$ , root mean square error of approximation (RMSEA) = 0.00, comparative fit index (CFI) = 1.00, Tucker–Lewis index (TLI) = 1.01, and standardized root mean square residual (SRMR) = 0.02.

Consistent with the results from our manipulation check, the stress mindset manipulation condition significantly predicted individuals' reported stress mindset ( $b = 0.97$ , 95% CI [0.79, 1.15],  $SE = 0.11$ ,  $p < .001$ ). Supporting H1a and H1b, people with a stronger SIE mindset perceived more work engagement ( $b = 0.18$ , 95% CI [0.09, 0.27],  $SE = 0.05$ ,  $p < .001$ ) and less emotional exhaustion ( $b = -0.39$ , 95% CI [-0.50, -0.27],  $SE = 0.07$ ,  $p < .001$ ).

Perceptions of work engagement, in turn, related to more intended health-oriented leadership behavior ( $b = 0.45$ , 95% CI [0.33, 0.57],  $SE = 0.07$ ,  $p < .001$ ). Thus, although the indirect effect of the stress mindset condition via reported stress mindset and perceived work engagement on intended health-oriented leadership behavior was significant ( $b_{ind} = 0.08$ , 95% CI [0.03, 0.12],  $SE = 0.03$ ,  $p = .003$ ), we could not support H2a, which proposed an indirect negative association between the stress mindset condition and intended health-oriented leadership behavior. Perceptions of emotional exhaustion related to more intended health-oriented leadership behavior ( $b = 0.21$ , 95% CI [0.12, 0.30],  $SE = 0.06$ ,  $p < .001$ ). Supporting H2b, the indirect effect of the stress mindset condition via reported stress mindset and perceived emotional exhaustion on intended health-oriented leadership behavior was significant ( $b_{ind} = -0.08$ , 95% CI [-0.12, -0.04],  $SE = 0.03$ ,  $p = .002$ ).

Perceived work engagement positively predicted participants' intention to express high-performance expectations ( $b = 0.24$ , 95% CI [0.12, 0.37],  $SE = 0.08$ ,  $p < .001$ ). In support of H3a, the indirect effect of the stress mindset condition via reported stress mindset and perceived work engagement on intention to express high-performance expectations was significant ( $b_{ind} = 0.04$ , 95% CI [0.01, 0.07],  $SE = 0.02$ ,  $p = .014$ ). Contrary to H3b, perceived emotional exhaustion was unrelated to the intention to express high-performance expectations ( $b = 0.02$ , 95% CI [-0.08, 0.12],  $SE = 0.06$ ,  $p = .374$ ), resulting in a nonsignificant indirect effect of the stress mindset condition via reported stress mindset and perceived emotional exhaustion on intention to express high-performance expectations ( $b_{ind} = -0.01$ , 95% CI [-0.04, 0.03],  $SE = 0.02$ ,  $p = .375$ ).

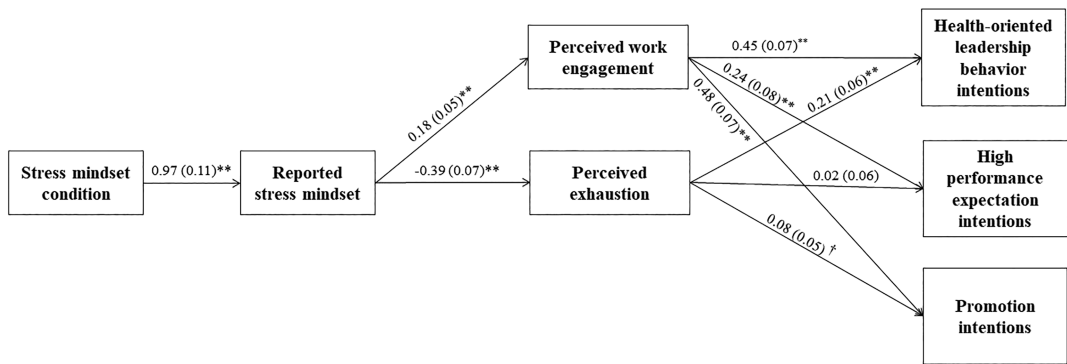
Participants' perception of work engagement was positively related to their intention to promote ( $b = 0.48$ , 95% CI [0.36, 0.59],  $SE = 0.07$ ,  $p < .001$ ). Supporting H4a, the indirect effect of

TABLE 1 Means, standard deviations, reliabilities, and correlations among the study variables in Study 1

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	34.80	10.22	-											
2. Gender	-	-	.20**	-										
3. Stress mindset condition	-	-	-.02	-.05	-									
4. Reported stress mindset	2.85	0.89	.03	-.12 <sup>†</sup>	.54**	(.87)								
5. Optimism	3.52	0.93	.09	-.13 <sup>†</sup>	.09	.36**	(.86)							
6. Stress level	2.45	0.93	-.18*	.05	-.05	-.26**	-.66**	(.84)						
7. Mood	3.53	0.98	.01	-.11	.12 <sup>†</sup>	.30**	.50**	-.44**	-					
8. Perceived work engagement	3.68	0.70	.20**	-.05	.08	.23**	.28**	-.25**	.28**	(.73)				
9. Perceived emotional exhaustion	3.17	0.93	-.10	.04	-.20**	-.37**	-.13 <sup>†</sup>	.15*	-.24**	-.33**	(.92)			
10. Health-oriented leadership behavior intentions	3.92	0.75	.06	.07	-.01	-.06	.08	-.02	.03	.33**	.12 <sup>†</sup>	(.88)		
11. High-performance expectation intentions	3.40	0.73	.13 <sup>†</sup>	-.09	-.00	.10	.25**	-.18*	.18*	.23**	-.05	.08	(.81)	
12. Promotion intentions	4.31	0.72	.19**	.17*	-.04	-.03	.19**	-.13 <sup>†</sup>	.17*	.42**	-.04	.58**	.16*	(.85)

Notes: N = 198 participants. McDonald's omega for each variable appears along the diagonal within parentheses. Gender: 1 = male, 2 = female; stress mindset condition: 0 = SID, 1 = SIE.

<sup>†</sup> $p < .10$ .  
\* $p < .05$ .  
\*\* $p < .01$ , two-tailed.



**FIGURE 2** Results of Study 1. Notes: Unstandardized coefficients reported. Stress mindset condition: 0 = SID, 1 = SIE.  $\chi^2(5) = 4.11$ ,  $p = .533$ , RMSEA = 0.00, CFI = 1.00, TLI = 1.01, SRMR = 0.02. The results for the indirect effects are as follows: H2a: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived work engagement  $\rightarrow$  health-oriented leadership behavior intentions: 0.08 (0.03)\*\*; H2b: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived emotional exhaustion  $\rightarrow$  health-oriented leadership behavior intentions:  $-0.08$  (0.03)\*\*; H3a: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived work engagement  $\rightarrow$  high-performance expectations intentions: 0.04 (0.02)\*; H3b: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived emotional exhaustion  $\rightarrow$  high-performance expectations intentions:  $-0.01$  (0.02); H4a: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived work engagement  $\rightarrow$  promotion intentions: 0.08 (0.03)\*\*; H4b: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived emotional exhaustion  $\rightarrow$  promotion intentions:  $-0.03$  (0.02)†. † $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , one-tailed

the stress mindset condition via reported stress mindset and perceived work engagement on intention to promote was significant ( $b_{ind} = 0.08$ , 95% CI [0.03, 0.13],  $SE = 0.03$ ,  $p = .003$ ). However, perceived emotional exhaustion was unrelated to the intention to promote ( $b = 0.08$ , 95% CI [ $-0.004$ , 0.17],  $SE = 0.05$ ,  $p = .058$ ). Contrary to H4b, the indirect effect of the stress mindset condition via reported stress mindset and perceived emotional exhaustion on intention to promote was also not significant ( $b_{ind} = -0.03$ , 95% CI [ $-0.07$ , 0.003],  $SE = 0.02$ ,  $p = .068$ ).<sup>1</sup>

## Discussion of Study 1

In summary, the results of Study 1 demonstrate the effectiveness of the stress mindset manipulation in inducing an SIE or SID mindset. Furthermore, the findings offer initial support for the proposed mediation and downstream effect of participants' (manipulated) stress mindset on their intention to show certain kinds of leadership behaviors via the perception of an employee's work engagement and emotional exhaustion. Even though the model showed a good fit, the RMSEA and CFI values were at a maximum. This may be due to the small sample size and/or small correlations. As only 198 individuals participated in this study, this could be the reason for these results. Because the other fit indices are also good and the chi-square test is insignificant, we believe that we may accept and interpret the model in this way.

We further tested the proposed model using two preregistered follow-up studies. In Study 2, we also assessed participants' perception of Ben's somatic symptoms besides perceived work engagement and emotional exhaustion to test H1c, H2c, and H3c. Moreover, we measured participants' identification with their team to test H5.

## STUDY 2

### Method

#### Participants

Participants were recruited online in Germany via social networks (Facebook, Xing, etc.). As an incentive for participation, the authors donated 0.30€ to a charitable organization for each completed questionnaire. A total of 346 respondents answered the online questionnaire. After excluding the outliers based on the a priori exclusion criteria (see Study 1 and the preregistration), the sample size was  $N = 292$ , with 31% men, 68% women, and 1% indicating their gender as “other.” The mean age was  $M = 37.64$  ( $SD = 11.76$ , ranging from 18 to 67 years). The sample was predominantly employed full-time (70%), and 32% of the participants had managerial responsibilities.

#### Procedure

Similar to Study 1, this study consisted of two parts, which were presented as two separate studies. In the first part, participants' stress mindset was manipulated using the same procedure as in Study 1. In addition, we assessed the participants' identification with their team. In the second part, we proceeded in the same way as in Study 1. Participants were asked to imagine being the leader of their current team, with “Ben” as one of their employees, and were then presented with the scenario from Study 1. In addition to work engagement and emotional exhaustion, we asked participants to rate the perceived somatic symptoms of Ben.

#### Measures

We used the same measures as in Study 1 to assess participants' *reported stress mindset* (Crum et al., 2013;  $\omega = .89$ ), their perception of Ben's *work engagement* (Schaufeli et al., 2019;  $\omega = .80$ ) and *emotional exhaustion* (Maslach et al., 1996,  $\omega = .88$ ), and their *intention to show health-oriented leadership behavior* (Franke et al., 2014;  $\omega = .76$ ), their *intention to express high-performance expectations* toward Ben (Podsakoff et al., 1990;  $\omega = .73$ ), and their *intention to promote Ben* (e.g., Hoobler et al., 2009;  $\omega = .83$ ).

Participants' *identification with their team* was measured using three items from Doosje et al. (1995). A sample item is “I identify with my team” ( $\omega = .92$ ; 5-point scale from 1 = *strongly disagree* to 5 = *strongly agree*).

Perceptions of Ben's *somatic symptoms* were assessed using the eight-item Somatic Symptoms Scale (Gierk et al., 2014). Consistent with our approach in Study 1, these items were adapted to assess Ben's somatic symptoms, indicating how much he could have been experiencing, for example, “Stomach or bowel problems” and “Headaches” ( $\omega = .88$ ; 5-point scale from 1 = *not at all* to 5 = *very much*).

Again, we examined whether participants were randomly assigned to the two stress mindset conditions in terms of their demographics (age and gender), their *optimism* (Scheier et al., 1994;  $\omega = .73$ ), and their current *stress level* (Cohen et al., 1983;  $\omega = .81$ ) and *mood* (with one item, Bradley & Lang, 1994). We also conducted additional analyses controlling for the participants' leadership positions in their current job.



## Data analysis

The same handling of outliers, procedure for the control variables, and analytic strategy were used as in Study 1. The model was tested simultaneously for all mediators and the moderator using the observed scale means. As in Study 1, we conducted a sequential mediation analysis to examine the influence of the stress mindset condition on the dependent variables (i.e., health-oriented leadership behavior intentions, high-performance expectation intentions, and promotion intentions) and its indirect effects via the reported stress mindset and well-being perceptions (i.e., the target's perceived emotional exhaustion, somatic symptoms, and work engagement). The moderator team identification as well as the interaction term between participants' team identification and the reported stress mindset were additionally included in the model to test H5. We grand-mean-centered the predictor variables (team identification and reported stress mindset) to control for multicollinearity (Hofmann & Gavin, 1998).

As this study was part of a student project, additional variables were tracked for educational purposes, which are described, along with the respective analyses, in the preregistration and Supporting Information.

## Results

### Preliminary analyses and manipulation check

Descriptive statistics, reliabilities, and correlations between the observed variables in Study 2 are presented in Table 2. The manipulation check revealed that, as intended and consistent with Study 1, participants in the SIE condition showed higher stress mindset scores, indicating a stronger SIE mindset ( $M = 3.28$ ,  $SD = 0.61$ ) than participants in the SID condition ( $M = 2.69$ ,  $SD = 0.70$ ;  $t(284.83) = -7.58$ ,  $p < .001$ ). In addition, participants in both conditions did not differ in their gender, age, stress level, optimism, or mood ( $p > .05$  for all variables). In line with Study 1, we thus report the analyses without covariates.

### Hypothesis testing

Figure 3 shows the results of the hypothesis tests. As in Study 1, the overall model showed a good fit to the data:  $\chi^2(14) = 23.29$ ,  $p = .056$ , RMSEA = 0.05, CFI = 0.97, TLI = 0.92, SRMR = 0.03.

Consistent with Study 1 and the results from our manipulation check, the stress mindset manipulation significantly predicted individuals' reported stress mindset ( $b = 0.58$ , 95% CI [0.46, 0.71],  $SE = 0.08$ ,  $p < .001$ ). Further consistent with Study 1, and again supporting H1a, people with a stronger SIE mindset perceived more work engagement ( $b = 0.14$ , 95% CI [0.05, 0.23],  $SE = 0.06$ ,  $p = .006$ ). Similar to Study 1, and again supporting H1b, people with a stronger SIE mindset perceived less emotional exhaustion ( $b = -0.29$ , 95% CI [-0.39, -0.19],  $SE = 0.06$ ,  $p < .001$ ). Moreover, and supporting H1c, those with a stronger SIE mindset perceived fewer somatic symptoms (H1c;  $b = -0.32$ , 95% CI [-0.42, -0.22],  $SE = 0.06$ ,  $p < .001$ ).

Again not supporting H2a, the perception of work engagement was not related to the intention to show health-oriented leadership behavior ( $b = 0.08$ , 95% CI [-0.01, 0.16],  $SE = 0.05$ ,  $p = .067$ ), resulting in a nonsignificant indirect effect of the stress mindset

TABLE 2 Means, standard deviations, reliabilities, and correlations among the study variables in Study 2

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age	37.64	11.76	-													
2. Gender	-	-	-.18**	-												
3. Stress mindset condition	-	-	.03	-.09	-											
4. Reported stress mindset	2.98	0.72	.16**	-.04	.41**	(.89)										
5. Optimism	3.61	0.74	.09	-.01	.04	.10	(.73)									
6. Stress level	2.13	0.79	-.18**	.01	-.01	-.16**	-.52**	(.81)								
7. Mood	3.04	1.08	.02	.07	-.07	-.03	.15**	-.29**	-							
8. Perceived work engagement	3.29	0.69	.09	.09	-.02	.17**	.13*	-.13*	.09	(.80)						
9. Perceived emotional exhaustion	3.30	0.75	-.16**	.01	-.05	-.29**	-.05	.10*	-.15*	-.50**	(.88)					
10. Perceived somatic symptoms	2.85	0.78	-.13*	.02	-.09	-.31**	-.08	.19**	-.24**	-.26**	.61**	(.88)				
11. Health-oriented leadership behavior intentions	4.22	0.55	.01	.01	-.01	-.14*	.04	.00	-.03	-.04	.24**	.27**	(.76)			
12. High-performance expectation intentions <sup>a</sup>	3.04	0.69	-.15*	-.08	-.09	.00	-.10 <sup>†</sup>	.17**	.06	.01	.10 <sup>†</sup>	.09	.01	(.73)		
13. Promotion intentions <sup>a</sup>	3.56	0.86	-.18**	.15*	-.08	-.04	-.02	-.05	.07	.12*	-.02	.06	.14*	.12*	(.83)	
14. Team identification	3.77	1.05	.24**	-.07	.06	.12*	.23**	-.20**	.08	.13*	-.10	-.08	.11 <sup>†</sup>	.03	-.00	(.92)

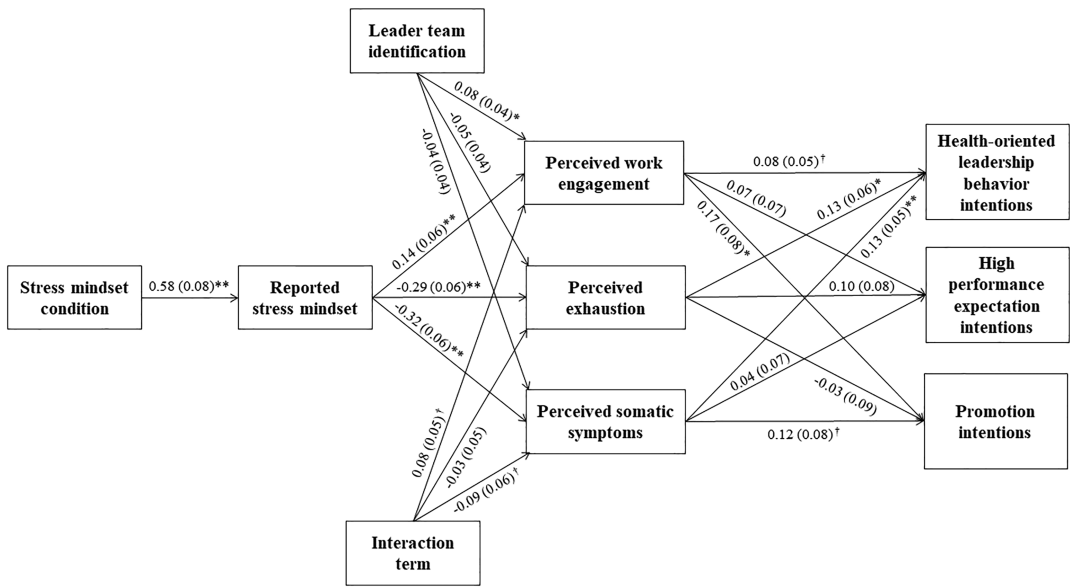
Notes: *N* = 292. McDonald's omega for each variable appears along the diagonal within parentheses. Gender: 1 = male, 2 = female; stress mindset condition: 0 = SID, 1 = SIE.

<sup>a</sup>291 participants, due to missing values.

<sup>†</sup>*p* < .10.

\**p* < .05.

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



**FIGURE 3** Results of Study 2. Notes: Unstandardized coefficients reported. Stress mindset condition: 0 = SID, 1 = SIE. Interaction term: Interaction of reported stress mindset and leader team identification.  $\chi^2(14) = 23.29, p = .056$ , RMSEA = 0.05, CFI = 0.97, TLI = 0.92, SRMR = 0.03. The results for the indirect effects are as follows: H2a: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived work engagement  $\rightarrow$  health-oriented leadership behavior intentions: 0.01 (0.01); H2b: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived emotional exhaustion  $\rightarrow$  health-oriented leadership behavior intentions:  $-0.02$  (0.01)\*; H2c: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived somatic symptoms  $\rightarrow$  health-oriented leadership behavior intentions:  $-0.02$  (0.01)\*; H3a: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived work engagement  $\rightarrow$  high-performance expectations intentions: 0.01 (0.01); H3b: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived emotional exhaustion  $\rightarrow$  high-performance expectations intentions:  $-0.02$  (0.01); H3c: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived somatic symptoms  $\rightarrow$  high-performance expectations intentions:  $-0.01$  (0.01); H4a: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived work engagement  $\rightarrow$  promotion intentions: 0.01 (0.01)<sup>†</sup>; H4b: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived emotional exhaustion  $\rightarrow$  promotion intentions: 0.01 (0.02); H4c: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived somatic symptoms  $\rightarrow$  promotion intentions:  $-0.02$  (0.02)<sup>†</sup>. <sup>†</sup>  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ , one-tailed

condition via reported stress mindset and perceived work engagement on intended health-oriented leadership behavior ( $b_{ind} = 0.01$ , 95% CI  $[-0.002, 0.02]$ ,  $SE = 0.01$ ,  $p = .102$ ). In line with Study 1, and again supporting H2b, perceived emotional exhaustion positively predicted intended health-oriented leadership behavior ( $b = 0.13$ , 95% CI  $[0.04, 0.23]$ ,  $SE = 0.06$ ,  $p = .011$ ), and the indirect effect of the stress mindset condition via reported stress mindset and perceived emotional exhaustion on intended health-oriented leadership behavior was significant ( $b_{ind} = -0.02$ , 95% CI  $[-0.04, -0.004]$ ,  $SE = 0.01$ ,  $p = .023$ ). Similarly, consistent with H2c, perceived somatic symptoms were positively related to intended health-oriented leadership behavior ( $b = 0.13$ , 95% CI  $[0.05, 0.21]$ ,  $SE = 0.05$ ,  $p = .006$ ), resulting in a significant indirect effect of the stress mindset condition via reported stress mindset and perceived somatic symptoms on intended health-oriented leadership behavior ( $b_{ind} = -0.02$ , 95% CI  $[-0.04, -0.01]$ ,  $SE = 0.01$ ,  $p = .014$ ).

Inconsistent with Study 1 and not supporting H3a, perceived work engagement was not related to participants' intention to express high-performance expectations ( $b = 0.07$ , 95% CI  $[-0.04, 0.18]$ ,  $SE = 0.07$ ,  $p = .153$ ), and the indirect effect of the stress mindset condition via reported stress mindset and perceived work engagement on high-performance expectation intentions was not significant ( $b_{ind} = 0.01$ , 95% CI  $[-0.004, 0.02]$ ,  $SE = 0.01$ ,  $p = .173$ ). In line with Study 1, and again not supporting H3b, perceived emotional exhaustion did not predict participants' intention to express high-performance expectations ( $b = 0.10$ , 95% CI  $[-0.03, 0.22]$ ,  $SE = 0.08$ ,  $p = .102$ ), and the indirect effect of the stress mindset condition via reported stress mindset and perceived emotional exhaustion on intention to express high-performance expectations was not significant ( $b_{ind} = -0.02$ , 95% CI  $[-0.04, 0.01]$ ,  $SE = 0.01$ ,  $p = .112$ ). Not supporting H3c, we also found a nonsignificant relationship between perceived somatic symptoms and intention to express high-performance expectations ( $b = 0.04$ , 95% CI  $[-0.07, 0.14]$ ,  $SE = 0.07$ ,  $p = .297$ ), as well as a nonsignificant indirect effect of the stress mindset condition via reported stress mindset and perceived somatic symptoms on intention to express high-performance expectations ( $b_{ind} = -0.01$ , 95% CI  $[-0.03, 0.01]$ ,  $SE = 0.01$ ,  $p = .299$ ).

As in Study 1, perceived work engagement positively predicted intention to promote ( $b = 0.17$ , 95% CI  $[0.03, 0.31]$ ,  $SE = 0.08$ ,  $p = .023$ ). However, inconsistent with Study 1, and not supporting H4a, the indirect effect of the stress mindset condition via reported stress mindset and perceived work engagement on promotion intentions was not significant ( $b_{ind} = 0.01$ , 95% CI  $[-0.001, 0.03]$ ,  $SE = 0.01$ ,  $p = .062$ ). Similar to Study 1, and again not supporting H4b, perceived emotional exhaustion was unrelated to the intention to promote ( $b = -0.03$ , 95% CI  $[-0.18, 0.13]$ ,  $SE = 0.09$ ,  $p = .382$ ), resulting in a nonsignificant indirect effect of the stress mindset condition via reported stress mindset and perceived emotional exhaustion on promotion intentions ( $b_{ind} = 0.01$ , 95% CI  $[-0.02, 0.03]$ ,  $SE = 0.02$ ,  $p = .382$ ). We found similar results for somatic symptoms, which were not in line with H4c; perceived somatic symptoms did not predict the intention to promote ( $b = 0.12$ , 95% CI  $[-0.02, 0.25]$ ,  $SE = 0.08$ ,  $p = .079$ ), and the indirect effect of the stress mindset condition via reported stress mindset and perceived somatic symptoms on promotion intentions was also not significant ( $b_{ind} = -0.02$ , 95% CI  $[-0.05, 0.01]$ ,  $SE = 0.02$ ,  $p = .090$ ).

Furthermore, we did not find conclusive support for H5, which proposed that team identification moderates the association between reported stress mindset and the perception of well-being. In particular, team identification did not moderate the relationship between reported stress mindset and perceived work engagement (H5a;  $b = 0.08$ , 95% CI  $[-0.01, 0.16]$ ,  $SE = 0.05$ ,  $p = .068$ ), perceived emotional exhaustion (H5b;  $b = -0.03$ , 95% CI  $[-0.11, 0.06]$ ,  $SE = 0.05$ ,  $p = .317$ ), and perceived somatic symptoms (H5c;  $b = -0.09$ , 95% CI  $[-0.18, 0.01]$ ,  $SE = 0.06$ ,  $p = .064$ ).<sup>2</sup>

## Discussion of Study 2

The findings of Study 2 partially support our hypotheses. We successfully replicated our findings from Study 1 that leaders with an SIE mindset perceived higher levels of work engagement and lower levels of emotional exhaustion and found that they also perceived fewer somatic symptoms. We further replicated the indirect downstream effect of stress mindset manipulation via participants' rated stress mindset and the perception of employee emotional exhaustion on their intention to show health-oriented leadership behavior. We established a similar indirect association via the perceived somatic symptoms. Again, we did not find evidence of an indirect

effect via perceived work engagement. Inconsistent with Study 1, participants' stress mindset did not indirectly affect their intention to express high-performance expectations and intention to promote.

In addition, we found only tentative (marginally significant) support for a moderating function of the leader's team identification. One possible explanation could be the study design, as participants were asked to indicate their identification with their current team. Even though they were asked to imagine themselves as the leader and Ben as a member of this team, this conceptualization could have reduced the effects. Therefore, the aim of Study 3 was to replicate and extend this model by experimentally manipulating participants' team identification.

## STUDY 3

### Method

#### Participants

The participants were recruited from the United States via the online platform MTurk. In total, 332 participants completed the online questionnaire. After excluding all outliers (see Study 1 and the preregistration), the sample size was  $N = 250$ , with 55% men and 45% women. The mean age was  $M = 35.06$  ( $SD = 9.74$ , ranging from 19 to 76 years). The sample was predominantly employed full-time (89%). Furthermore, 57% of the participants had managerial responsibilities.

#### Procedure

Our study design was similar to that of Studies 1 and 2, in which we manipulated participants' stress mindset using an identical procedure in the first part and then presented our scenario and let the participants rate Ben's well-being and their intended leadership behaviors in the second part. Both parts of the study were presented as separate studies.

Deviating from Study 2, we experimentally manipulated participants' identification with the fictitious team in the second part by telling them that they were leading a team with which they either did or did not strongly identify (e.g., "Thinking about your time working with this team, you realize that you *strongly identify/don't really identify* with it ..."; see Supporting Information for a detailed description of the manipulation). This manipulation proved to be effective in previous studies (e.g., Schuh et al., 2016). The participants' team identification was measured as a manipulation check.

#### Measures

We used the same measures as in Studies 1 and 2 to assess participants' *reported stress mindset* (Crum et al., 2013;  $\omega = .88$ ) and *team identification* (Doosje et al., 1995;  $\omega = .98$ ), and their perceptions of Ben's *work engagement* (Schaufeli et al., 2019;  $\omega = .76$ ), *emotional exhaustion* (Maslach et al., 1996,  $\omega = .93$ ), and *somatic symptoms* (Gierk et al., 2014;  $\omega = .90$ ). Likewise, identical measures to operationalize their *intention to show health-oriented leadership behavior*

(Franke et al., 2014;  $\omega = .88$ ), their *intention to express high-performance expectations* toward Ben (Podsakoff et al., 1990;  $\omega = .81$ ), and their *intention to promote* (e.g., Hoobler et al., 2009;  $\omega = .87$ ) were used.

As in Studies 1 and 2, we tested whether participants were randomly assigned to the two stress mindset conditions in terms of their demographics (age and gender), their *optimism* (Scheier et al., 1994;  $\omega = .89$ ), and their current *stress level* (Cohen et al., 1983;  $\omega = .81$ ) and *mood* (with one item; Bradley & Lang, 1994). Again, we conducted additional analyses controlling for participants' leadership positions in their current jobs.

## Data analysis

As in Studies 1 and 2, we first examined outliers and performed manipulation and randomization checks. Similar to Study 2, the model was tested simultaneously for all mediators, the moderator, and all outcomes. Again, this study was part of a student project, and additional variables that were assessed for educational purposes are described in the preregistration and Supporting Information.

## Results

### Preliminary analyses and manipulation check

Table 3 presents the descriptive statistics, reliabilities, and correlations between the study variables. Again, consistent with our expectations and Studies 1 and 2, participants in the SIE condition reported higher stress mindset scores, indicating a stronger SIE mindset ( $M = 3.25$ ,  $SD = 0.75$ ) than participants in the SID condition ( $M = 2.23$ ,  $SD = 0.74$ ;  $t[248] = -10.79$ ,  $p < .001$ ), demonstrating the effectiveness of the stress mindset manipulation. Moreover, the team identification manipulation was successful; participants in the low identification group reported less identification ( $M = 2.50$ ,  $SD = 1.42$ ) than those in the high identification group ( $M = 4.31$ ,  $SD = 0.82$ ;  $t(194.89) = -12.30$ ,  $p < .001$ ).

As in Studies 1 and 2, participants in the two stress mindset conditions did not significantly differ in gender, age, stress level, or optimism ( $p > .05$  for all variables). However, in contrast to Studies 1 and 2, independent sample  $t$ -tests revealed differences between the two stress mindset conditions in mood ( $M_{SID} = 3.22$ ,  $SD = 1.01$ ;  $M_{SIE} = 3.65$ ,  $SD = 0.98$ ;  $t[248] = -3.36$ ,  $p = .001$ ). Therefore, analyses were conducted with and without mood as a control variable. Given the differences between the two stress mindset conditions, we report the results controlling for mood and only mention the results without mood as a control variable when they differ. The full results of the analyses without controlling for mood can be found in the Supporting Information.

### Hypothesis testing

Figure 4 presents the results of hypothesis tests. Similar to Studies 1 and 2, the overall model showed a good fit to the data:  $\chi^2(14) = 32.87$ ,  $p = .003$ , RMSEA = 0.07, CFI = 0.96, TLI = 0.85, SRMR = 0.04. Further, consistent with the manipulation check and Studies 1 and 2, the stress



TABLE 3 Means, standard deviations, reliabilities, and correlations among the study variables in Study 3

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age	35.06	9.74	-														
2. Gender	-	-	.01	-													
3. Stress mindset condition	-	-	.00	.11 <sup>†</sup>	-												
4. Identification condition	-	-	-.02	-.01	.01	-											
5. Reported stress mindset	2.74	0.90	-.06	-.01	.57 <sup>**</sup>	.09	(.88)										
6. Optimism	3.68	0.95	.13 <sup>*</sup>	.04	.11 <sup>†</sup>	.00	.20 <sup>**</sup>	(.89)									
7. Stress level	2.39	0.95	-.20 <sup>**</sup>	.01	-.08	-.01	-.11 <sup>a</sup>	-.65 <sup>**</sup>	(.81)								
8. Mood	3.44	1.02	-.04	.00	.21 <sup>**</sup>	.09	.30 <sup>**</sup>	.36 <sup>**</sup>	-.32 <sup>**</sup>	-							
9. Perceived work engagement	3.60	0.70	.16 <sup>**</sup>	.16 <sup>**</sup>	.14 <sup>*</sup>	-.02	.11 <sup>a</sup>	.15 <sup>*</sup>	-.10	.18 <sup>**</sup>	(.76)						
10. Perceived emotional exhaustion	3.33	0.93	.08	-.05	-.25 <sup>**</sup>	.02	-.18 <sup>**</sup>	.00	.07	-.19 <sup>**</sup>	-.36 <sup>**</sup>	(.93)					
11. Perceived somatic symptoms	2.52	0.88	.04	.02	-.11 <sup>a</sup>	.02	-.08	-.15 <sup>*</sup>	.19 <sup>**</sup>	-.25 <sup>**</sup>	-.32 <sup>**</sup>	.62 <sup>**</sup>	(.90)				
12. Health-oriented leadership behavior intentions	3.91	0.73	.10	.18 <sup>**</sup>	-.02	.06	-.08	.09	-.15 <sup>*</sup>	-.01	.16 <sup>*</sup>	.12 <sup>†</sup>	.04	(.88)			
13. High-performance expectation intentions <sup>a</sup>	3.38	0.74	.14 <sup>*</sup>	.06	.08	-.05	.04	.10	-.01	-.04	.30 <sup>**</sup>	-.01	.05	.03	(.81)		
14. Promotion intentions <sup>a</sup>	4.24	0.75	.15 <sup>*</sup>	.22 <sup>**</sup>	.05	.00	-.09	.14 <sup>*</sup>	-.19 <sup>**</sup>	.08	.33 <sup>**</sup>	.05	.01	.49 <sup>**</sup>	.09	(.87)	
15. Team identification	3.42	1.46	.05	.06	.13 <sup>*</sup>	.62 <sup>**</sup>	.12 <sup>†</sup>	.20 <sup>**</sup>	-.07	.20 <sup>**</sup>	.22 <sup>**</sup>	-.01	-.00	.18 <sup>**</sup>	.16 <sup>*</sup>	.18 <sup>**</sup>	(.98)

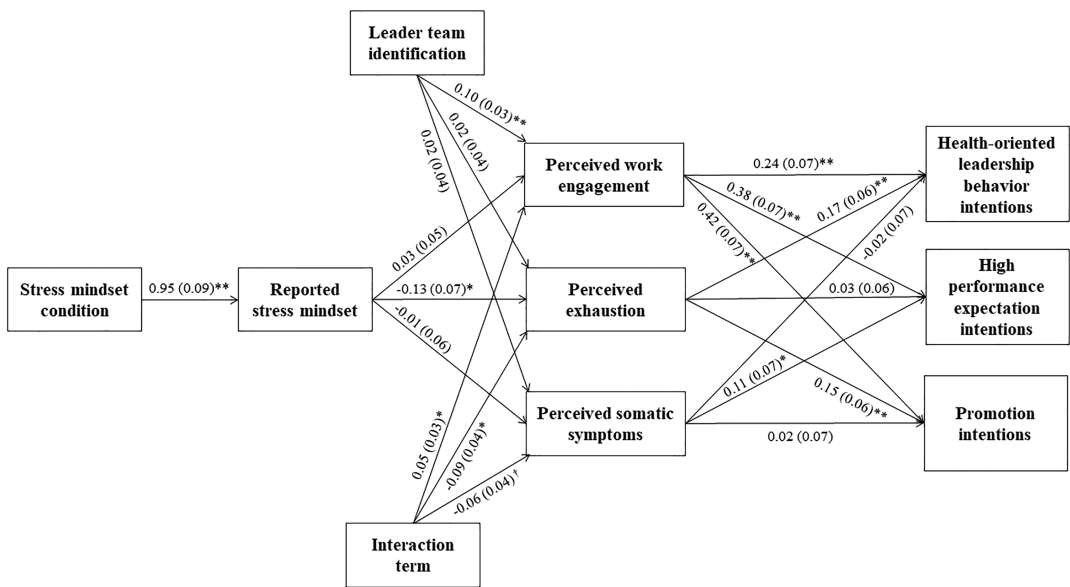
Notes: N = 250 participants. McDonald's omega for each variable appears along the diagonal within parentheses. Gender: 1 = male, 2 = female; stress mindset condition: 0 = SID, 1 = SIE.

<sup>a</sup>248 participants, due to missing values.

<sup>†</sup>p < .10.

<sup>\*</sup>p < .05.

<sup>\*\*</sup>p < .01, two-tailed.



**FIGURE 4** Results of Study 3. Notes: Unstandardized coefficients reported. Stress mindset condition: 0 = SID, 1 = SIE. Interaction term: Interaction of reported stress mindset and leader team identification.  $\chi^2(14) = 32.87, p = .003$ , RMSEA = 0.07, CFI = 0.96, TLI = 0.85, SRMR = 0.04. The results for the indirect effects are as follows: H2a: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived work engagement  $\rightarrow$  health-oriented leadership behavior intentions: 0.01 (0.01); H2b: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived emotional exhaustion  $\rightarrow$  health-oriented leadership behavior intentions:  $-0.02$  (0.01) $^\dagger$ ; H2c: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived somatic symptoms  $\rightarrow$  health-oriented leadership behavior intentions: 0.00 (0.00); H3a: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived work engagement  $\rightarrow$  high-performance expectations intentions: 0.01 (0.02); H3b: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived emotional exhaustion  $\rightarrow$  high-performance expectations intentions:  $-0.004$  (0.01); H3c: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived somatic symptoms  $\rightarrow$  high-performance expectations intentions:  $-0.001$  (0.01); H4a: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived work engagement  $\rightarrow$  promotion intentions: 0.01 (0.02); H4b: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived emotional exhaustion  $\rightarrow$  promotion intentions:  $-0.02$  (0.01) $^\dagger$ ; H4c: Stress mindset condition  $\rightarrow$  reported stress mindset  $\rightarrow$  perceived somatic symptoms  $\rightarrow$  promotion intentions: 0.00 (0.00).  $^\dagger p < .10$ ,  $* p < .05$ ,  $** p < .01$ , one-tailed

mindset manipulation significantly predicted individuals' reported stress mindset ( $b = 0.95$ , 95% CI [0.80, 1.10],  $SE = 0.09$ ,  $p < .001$ ).

Inconsistent with Studies 1 and 2, and not supporting H1a, the reported stress mindset was not associated with perceived work engagement ( $b = 0.03$ , 95% CI [ $-0.05$ , 0.11],  $SE = 0.05$ ,  $p = .285$ ). However, consistent with Studies 1 and 2, and again supporting H1b, the reported stress mindset was negatively related to the perception of emotional exhaustion ( $b = -0.13$ , 95% CI [ $-0.24$ ,  $-0.02$ ],  $SE = 0.07$ ,  $p = .025$ ). Inconsistent with Study 2 and not supporting H1c, the reported stress mindset was not associated with perceived somatic symptoms ( $b = -0.01$ , 95% CI [ $-0.11$ , 0.10],  $SE = 0.06$ ,  $p = .454$ ).

Similar to Study 1, but inconsistent with Study 2, and not in line with our expectations of a negative association, perceived work engagement positively predicted intention to show health-oriented leadership behavior ( $b = 0.24$ , 95% CI [0.12, 0.35],  $SE = 0.07$ ,  $p < .001$ ). Not supporting

H2a, the indirect effect of the stress mindset condition via reported stress mindset and perceived work engagement on intended health-oriented leadership behavior was not significant ( $b_{ind} = 0.01$ , 95% CI  $[-0.01, 0.03]$ ,  $SE = 0.01$ ,  $p = .288$ ). In line with Studies 1 and 2 and as expected, perceived emotional exhaustion positively predicted intended health-oriented leadership behavior ( $b = 0.17$ , 95% CI  $[0.06, 0.27]$ ,  $SE = 0.06$ ,  $p = .005$ ). However, inconsistent with Studies 1 and 2 and not supporting H2b, the indirect effect of the stress mindset condition via reported stress mindset and perceived emotional exhaustion on intended health-oriented leadership behavior was not significant but indicated a trend in the proposed direction ( $b_{ind} = -0.02$ , 95% CI  $[-0.04, 0.001]$ ,  $SE = 0.01$ ,  $p = .062$ ). However, the indirect relationship between the stress mindset condition and health-oriented leadership behavior intentions via perceived emotional exhaustion and reported stress mindset yielded significance when mood was not controlled ( $b_{ind} = -0.03$ , 95% CI  $[-0.06, -0.003]$ ,  $SE = 0.02$ ,  $p = .032$ ; see Supporting Information for the full results), supporting H2b and consistent with both other studies.

Inconsistent with Study 2, perceived somatic symptoms did not predict intended health-oriented leadership behavior ( $b = -0.02$ , 95% CI  $[-0.13, 0.09]$ ,  $SE = 0.07$ ,  $p = .404$ ). Not supporting H2c, the indirect effect of the stress mindset condition via reported stress mindset and perceived somatic symptoms on health-oriented leadership behavior intentions was also not significant ( $b_{ind} = 0.000$ , 95% CI  $[-0.002, 0.002]$ ,  $SE = 0.001$ ,  $p = .458$ ).

In line with Study 1, but not with Study 2, perceptions of employee work engagement were positively related to participants' intentions to express high-performance expectations ( $b = 0.38$ , 95% CI  $[0.26, 0.49]$ ,  $SE = 0.07$ ,  $p < .001$ ). However, inconsistent with Study 1 but in line with findings in Study 2, and not supporting H3a, the indirect effect of the stress mindset condition via reported stress mindset and perceived work engagement on intention to express high-performance expectations was not significant ( $b_{ind} = 0.01$ , 95% CI  $[-0.02, 0.04]$ ,  $SE = 0.02$ ,  $p = .286$ ). In line with Studies 1 and 2 and again not supporting H3b, perceived emotional exhaustion did not predict intention to express high-performance expectations ( $b = 0.03$ , 95% CI  $[-0.07, 0.13]$ ,  $SE = 0.06$ ,  $p = .317$ ), and the indirect effect of the stress mindset condition via reported stress mindset and perceived emotional exhaustion on intention to express high-performance expectations was not significant ( $b_{ind} = -0.004$ , 95% CI  $[-0.02, 0.01]$ ,  $SE = 0.01$ ,  $p = .322$ ). In contrast to Study 2, perceptions of somatic symptoms were positively related to the intention to express high-performance expectations ( $b = 0.11$ , 95% CI  $[0.003, 0.22]$ ,  $SE = 0.07$ ,  $p = .045$ ). However, consistent with Study 2, and again not supporting H3c, the indirect effect of the stress mindset condition via reported stress mindset and perceived somatic symptoms on intention to express high-performance expectations was not significant ( $b_{ind} = -0.001$ , 95% CI  $[-0.01, 0.01]$ ,  $SE = 0.01$ ,  $p = .454$ ).

Consistent with Studies 1 and 2, perceived work engagement positively predicted the intention to promote ( $b = 0.42$ , 95% CI  $[0.31, 0.54]$ ,  $SE = 0.07$ ,  $p < .001$ ). In line with Study 2 but not with Study 1, and again not supporting H4a, the stress mindset condition was not indirectly related to promotion intentions via reported stress mindset and perceived work engagement ( $b_{ind} = 0.01$ , 95% CI  $[-0.02, 0.04]$ ,  $SE = 0.02$ ,  $p = .286$ ). In contrast to Studies 1 and 2, perceptions of emotional exhaustion were positively related to the judgment of being more suitable for promotion ( $b = 0.15$ , 95% CI  $[0.05, 0.25]$ ,  $SE = 0.06$ ,  $p = .008$ ). However, similar to Studies 1 and 2, and again not supporting H4b, we found no significant indirect effect of the stress mindset condition via reported stress mindset and perceived emotional exhaustion on promotion intentions ( $b_{ind} = -0.02$ , 95% CI  $[-0.04, 0.002]$ ,  $SE = 0.01$ ,  $p = .066$ ). As in Study 2, and again not supporting H4c, perceived somatic symptoms were unrelated to the intention to promote ( $b = 0.02$ , 95% CI  $[-0.08, 0.13]$ ,  $SE = 0.07$ ,  $p = .354$ ), resulting in a nonsignificant indirect

effect of the stress mindset condition via reported stress mindset and perceived somatic symptoms on promotion intentions ( $b_{ind} = 0.000$ , 95% CI  $[-0.003, 0.002]$ ,  $SE = 0.002$ ,  $p = .456$ ).

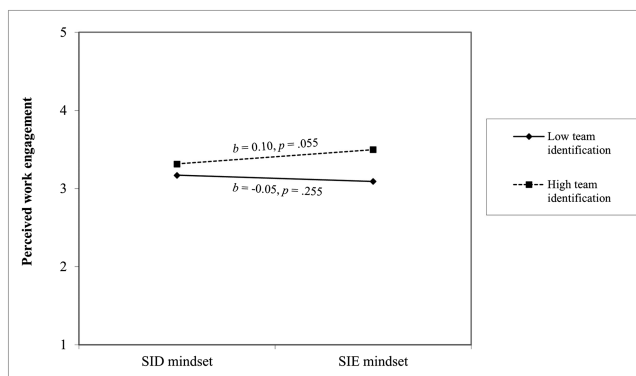
Overall, we found support for H5, which proposed that team identification would moderate the association between reported stress mindset and well-being. In particular, supporting H5a and the trend found in Study 2, the association of the reported stress mindset with perceived work engagement was contingent on team identification ( $b = 0.05$ , 95% CI  $[0.001, 0.10]$ ,  $SE = 0.03$ ,  $p = .046$ ). Simple slope analyses (see Figure 5) revealed that strongly identified participants showed a stronger relationship between their reported stress mindset and the perception of work engagement ( $b = 0.10$ , 95% CI  $[-0.003, 0.20]$ ,  $SE = 0.06$ ,  $p = .055$ ) than participants with low team identification ( $b = -0.05$ , 95% CI  $[-0.16, 0.07]$ ,  $SE = 0.07$ ,  $p = .255$ ). However, the moderation was only marginally significant when mood was not controlled ( $b = 0.05$ , 95% CI  $[-0.002, 0.10]$ ,  $SE = 0.03$ ,  $p = .058$ ).

Supporting H5b, but inconsistent with Study 2, the association between reported stress mindset and perceived emotional exhaustion was moderated by team identification ( $b = -0.09$ , 95% CI  $[-0.15, -0.02]$ ,  $SE = 0.04$ ,  $p = .013$ ). In line with our hypothesis, for strongly identified participants, the relationship between their reported stress mindset and perceived emotional exhaustion was stronger ( $b = -0.26$ , 95% CI  $[-0.40, -0.12]$ ,  $SE = 0.08$ ,  $p < .001$ ) than for those with low team identification ( $b = -0.001$ , 95% CI  $[-0.15, 0.15]$ ,  $SE = 0.09$ ,  $p = .495$ ; see Figure 6).

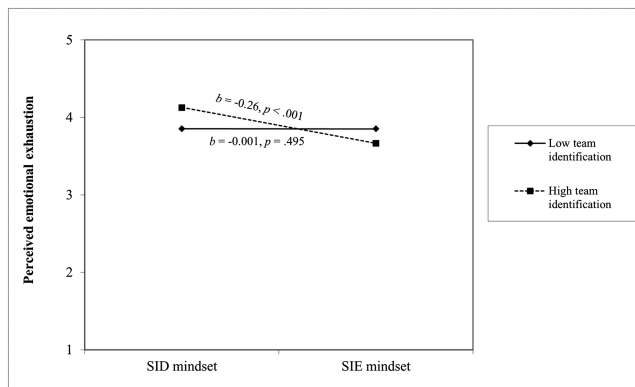
Finally, not supporting H5c, but consistent with the trend found in Study 2, the interaction of reported stress mindset and team identification in predicting perceived somatic symptoms was not significant, even though pointing in the proposed direction ( $b = -0.06$ , 95% CI  $[-0.12, 0.001]$ ,  $SE = 0.04$ ,  $p = .054$ ).<sup>3</sup>

## Discussion of Study 3

By manipulating participants' team identification, the results of Study 3 confirmed the trend found in Study 2 that team identification was a moderating factor. The simple slopes revealed that particularly those participants who strongly identified with their team tended to project



**FIGURE 5** Simple slope analysis. Leaders' perception of employees' work engagement as a function of leaders' reported stress mindset and leaders' identification with their team (Study 3). Note: Illustration of simple slopes with values  $\pm 1$  SD



**FIGURE 6** Simple slope analysis. Leaders' perception of employees' emotional exhaustion as a function of leaders' reported stress mindset and leaders' identification with their team (Study 3). Note: Illustration of simple slopes with values  $\pm 1$  SD

their own stress mindset onto their employees and perceive the employees' work engagement and emotional exhaustion in line with their stress mindset.

In line with Studies 1 and 2, the results of Study 3 showed that participants' stress mindset influences their perception of an employee's exhaustion, yet inconsistent with these studies, we could not replicate the influence of participants' stress mindset on perceived work engagement and somatic symptoms. Contrary to our expectations, the downstream effect of stress mindset via perceptions of well-being on the intended leadership behavior could not be replicated.

## EXPLORATORY ANALYSIS

External validity has often been raised as an issue in experimental studies. Even though scenario experiments have greater external validity than pure laboratory experiments (van Knippenberg & van Knippenberg, 2005; see also Dipboye, 1990) and the use of experimental vignette methodology is an adequate approach to study everyday work phenomena that are not easily observable (Aguinis & Bradley, 2014), the examined relationships in our three studies might be limited by the fact that the subjects did not hold a leadership position. Therefore, in an exploratory approach, we reanalyzed our data, including only those individuals from all three studies who held a leadership position in their current job. This group might perceive the vignette as more aligned with their (work) experience so that our description might have a stronger impact as they may have already witnessed such situations in their daily work. We tested the overall model for all mediators, the moderator, and the outcome variables simultaneously and used the full information maximum likelihood method to estimate parameters based on the incomplete data matrix (Lüdtke et al., 2007).

The total sample consisted of 333 individuals holding a leadership position (99 leaders from Study 1, 92 leaders from Study 2, and 142 leaders from Study 3). They were, on average, 38.56 years old ( $SD = 10.98$ ), and 57% were women (one person indicated "other" as gender). The results showed that the overall model fit the data well:  $\chi^2(16) = 36.86$ ,  $p = .002$ ,  $RMSEA = 0.06$ ,  $CFI = 0.95$ ,  $TLI = 0.86$ ,  $SRMR = 0.05$  (see Supporting Information for the full results). The results are consistent with the manipulation checks that the stress mindset

manipulation predicted participants' reported stress mindset. Supporting H1b and H1c, participants' reported stress mindset was related to the perception of lower levels of emotional exhaustion and fewer somatic symptoms. However, not supporting H1a, the reported stress mindset was unrelated to perceived work engagement.

In support of H2b, the stress mindset condition indirectly influenced the intended health-oriented leadership behavior via the reported stress mindset and perceived emotional exhaustion. However, not supporting H2a and H2c, the indirect effects of the stress mindset condition via reported stress mindset and perceived work engagement as well as perceived somatic symptoms on health-oriented leadership behavior intentions were not significant. Furthermore, H3 and H4 could not be supported, as the stress mindset condition was not indirectly related to participants' intention to express high-performance expectations or to promote the employee via their reported stress mindset and any of the well-being variables. Supporting H5b and H5c, team identification moderated the association between the reported stress mindset and the perception of emotional exhaustion and somatic symptoms. As expected, the relationships between reported stress mindset and perceived emotional exhaustion as well as perceived somatic symptoms were stronger for participants with strong team identification than for those with low team identification. Not supporting H5a, the relationship between the reported stress mindset and perceived work engagement was not moderated by team identification.

Overall, the results of this exploratory analysis supported most findings from all three studies (see Figure 7 for an overview of the results from Studies 1, 2, and 3). In line with the overall trend found in all of the studies, leaders projected their own stress mindset when evaluating an employee's emotional exhaustion and somatic symptoms. This was especially the case for leaders who strongly identified with their team. Consistent with all three studies, the proposed downstream effect on their intended leadership behavior was only confirmed for the perception of emotional exhaustion and intended health-oriented leadership behavior.

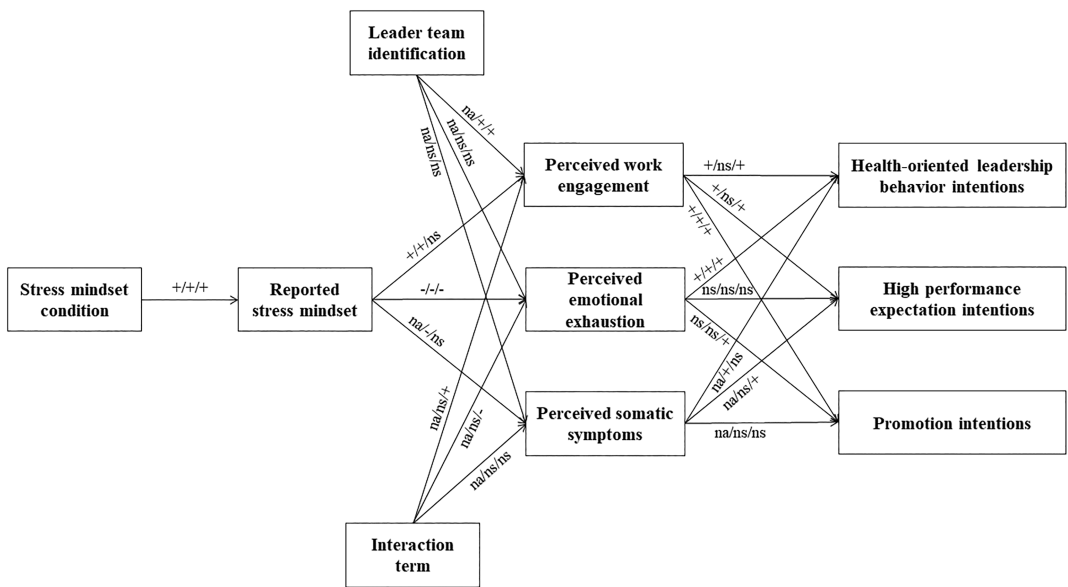
## GENERAL DISCUSSION

This research examined how leaders' stress mindset affects the recognition and evaluation of their employees' well-being, depending on the leaders' identification with their team, and the downstream effect on their intended leadership behavior. Across all three studies, we found consistent support that individuals adopting a leader's view holding an SIE mindset (compared with an SID mindset) were less likely to evaluate an employee experiencing heavy workload as suffering from emotional exhaustion. We also found some, albeit less consistent, indication that they also rated this employee lower in somatic symptoms (Study 2) and higher in work engagement (Studies 1 and 2).

In all three studies, the perception of an employee's emotional exhaustion, in turn, was related to stronger intentions to show health-oriented leadership behavior, confirming the indirect effect of leaders' stress mindset on health-oriented leadership behavior intentions (only marginally significant in Study 3). In contrast, we only found limited support for a similar downstream effect via the perception of somatic symptoms (only in Study 2) and no support via the perception of work engagement.

Even though the perception of work engagement was positively associated with leaders' intention to express high-performance expectations (Studies 1 and 3) and to promote this employee (all studies), the indirect influence of leaders' stress mindset on their intended expression of higher performance expectations and promotion intentions via perceived work





**FIGURE 7** Overview of results across studies. Note: The significance and direction of the effects are plotted in the order of the studies for each pathway—that is, Study 1/Study 2/Study 3. ns, not significant; na, not available, as this relationship was not assessed/investigated in the respective study. Interaction term: Interaction of reported stress mindset and leader team identification. The results for the indirect effects are as follows (in the order of the studies, i.e., Study 1/Study 2/Study 3): H2a: Stress mindset condition → reported stress mindset → perceived work engagement → health-oriented leadership behavior intentions: sign (but positive)/ns/ns; H2b: Stress mindset condition → reported stress mindset → perceived emotional exhaustion → health-oriented leadership behavior intentions: sign/sign/ns; H2c: Stress mindset condition → reported stress mindset → perceived somatic symptoms → health-oriented leadership behavior intentions: na/sign/ns; H3a: Stress mindset condition → reported stress mindset → perceived work engagement → high-performance expectations intentions: sign/ns/ns; H3b: Stress mindset condition → reported stress mindset → perceived emotional exhaustion → high-performance expectations intentions: ns/ns/ns; H3c: Stress mindset condition → reported stress mindset → perceived somatic symptoms → high-performance expectations intentions: na/ns/ns; H4a: Stress mindset condition → reported stress mindset → perceived work engagement → promotion intentions: sign/ns/ns; H4b: Stress mindset condition → reported stress mindset → perceived emotional exhaustion → promotion intentions: ns/ns/ns; H4c: Stress mindset condition → reported stress mindset → perceived somatic symptoms → promotion intentions: na/ns/ns

engagement was only supported in Study 1 and was never supported for perceived emotional exhaustion and somatic symptoms as mediators.

Leaders' identification with their team moderated the effect of their stress mindset on their perception of employee work engagement and emotional exhaustion (in Study 3) and on their perception of employee emotional exhaustion and somatic symptoms in the exploratory analysis, in which only participants who held a leadership position in their current job were included.

In summary, across three experimental studies, initial support was found for the assumption that leaders project their own stress mindset when evaluating employee well-being and that this projection process is partly strengthened by leaders' team identification. However, the results regarding the downstream effects on their intended leadership behavior were mixed. The following section discusses the theoretical and practical implications of these findings.

## Theoretical and research implications

By drawing on social projection and the social identity approach, these findings expand our understanding of leadership behavior, stress mindset, team identification, and health promotion in organizations.

First, this work complements previous research that seeks to understand the antecedents of certain leadership behaviors, especially why leaders engage in health-oriented leadership. All three studies and the exploratory analysis across the three samples revealed the trend that leaders' stress mindset influences their perception of employees' exhaustion, which, in turn, relates to the extent of (intended) health-oriented leadership behavior. Thus, leaders' cognitions and, in particular, their stress mindset, represent relevant antecedents of health-oriented leadership behavior. Health-oriented leadership varies among leaders, and researchers have often assumed that leaders or organizations refrain from promoting their employees' health and well-being because they do not care or because they do not know how to help their employees (e.g., Ipsen et al., 2020; Pfeffer, 2019). However, as the present research shows, leaders' stress mindset affects how they interpret their employees' attitudes and behavior, and they act in line with their interpretation. Thus, rather than not caring or not knowing how to help their employees, they might *not be aware* of their employees' need for health-oriented support due to their biased perception. Together with other research on leader cognition, such as their implicit followership theories (i.e., assumptions about ideal and typical followers; Junker & van Dick, 2014), this highlights the need for a stronger emphasis on the role of bias in the perception of employees and how this might affect leadership behavior in future research.

The finding that leaders' stress mindset affects their perception of employee well-being might also explain why organizational interventions to boost employee health and well-being are often less effective than they could be (e.g., Biron & Karanika-Murray, 2014). Such interventions are most effective when employees participate as soon as symptoms (e.g., being more irritable) appear, and they are less effective if employees already suffer from severe symptoms (e.g., from chronic sleep problems). Leaders play a key role here, as they can alert employees to such early warning signs and draw their attention to appropriate organizational support structures. However, as our findings show, leaders with an SIE mindset perceive these types of symptoms in their employees less often, and they are more likely to interpret these signs as indicators of work engagement rather than emotional exhaustion. As a result, rather than preventing additional ill-being, they accelerate this process by adding—well-intended—further demands.

Interestingly, the results of our studies did not provide consistent support for the idea that leaders' stress mindset indirectly influences their intentions for high-performance expectations and promotion via their perceptions of employee well-being. Accordingly, it would be interesting for future research to further explore the relationships between leaders' stress mindset and their performance expectations or willingness to promote their employees in more detail. Although perceptions of employee well-being may not be a central mediator for these links, other mechanisms may play a role. For example, it seems possible that an SIE mindset influences leaders' perceptions of employees' competence or performance (cf., Ben-Avi et al., 2018), such that leaders with an SIE mindset provide lower ratings than leaders with an SID mindset, as they evaluate stress and demands as feasible challenges that can be addressed and overcome. Leaders' performance appraisal, as well as their judgment of the employee's competence, in turn, could impact the leaders' future performance expectations and promotability rating of this employee. Examining these and related dynamics would be important, as such research can

provide deeper insights into the links between leaders' stress mindset and their perception and management of employee performance.

On a more general note, our research advances knowledge on the interpersonal effects of a stress mindset. Although an SID mindset has many negative intrapersonal effects for individuals, including a maladjusted stress response, worse cognitive flexibility, and a higher morbidity (e.g., Nabi et al., 2013), our studies show that an SID mindset can be beneficial in terms of interpersonal effects because these leaders are more likely to provide their employees with health-oriented supervision when they need it. In doing so, we extend the initial findings on the interpersonal consequences of a stress mindset (Ben-Avi et al., 2018) and show that these also apply to leaders and their perceptions and behavioral intentions toward employees.

Second, by studying leaders' team identification as a contingency of the stress mindset projection process, our research adds to recent attempts to investigate the potential risks of social identification (e.g., Wakefield et al., 2019). Interestingly, the proposed moderation was significant in Study 3 and in the exploratory analysis, in which only participants who held a leadership position in their current job were included in the sample, but not in Study 2. In Study 2, we asked the participants to imagine that the target employee was a member of their own current work team. Overall, team identification in this study was above the scale-mean average. Although this is in line with other research on team identification (e.g., Janssen & Huang, 2008; van Dick et al., 2008), range restriction reduces the potential for finding interaction effects (Aguinis et al., 2017). The fact that we manipulated team identification in Study 3 thus created a balance of strongly and weakly identified leaders, allowing us to find the proposed interaction effects. Nevertheless, further field studies would help to confirm these results.

Furthermore, the inconsistent findings regarding the moderation by team identification suggest that other boundary conditions (personality or situational factors) may be at play, and more research is needed to examine when and under which circumstances leaders project their own stress mindset onto their employees. For example, similarities between leaders and employees in terms of age and gender may influence the projection process. In addition to examining the moderating factors of the first link between stress mindset and well-being perceptions, the second link between well-being perceptions and intended leadership behavior may also be contingent upon other factors. The boundary conditions of this relationship could include organizational factors, such as the organizational health climate (see, e.g., Ernsting et al., 2013; Ribisl & Reischl, 1993; Zweber et al., 2016) or, at the leader level, personality variables, such as self-efficacy beliefs or assumptions as to whether leaders should engage in health-promoting behaviors (i.e., whether such behaviors lie within their responsibilities). A negative organizational health climate, for example, if health promotion is not considered important in an organization and not encouraged by the upper management, could prevent leaders from practicing health-oriented leadership, even if they perceive employees' physical and psychological exhaustion and, thus, a need for health-oriented support. In addition, leaders who do not see health promotion as part of their leadership role, or who lack the knowledge and confidence to care for their employees' health, may also be reluctant to engage in health-oriented leadership behavior, despite an obvious need. Hence, examining other moderating factors is a potential avenue for future research.

Finally, our research also provides important starting points and open questions for future work related to the stress mindset, particularly among leaders. For example, an interesting question for future research would be whether people with an SIE mindset are more likely to move into leadership positions because they are selected based on their attitude toward stress and challenging situations (i.e., their stress mindset). Furthermore, it would be of interest to

investigate employees' stress mindset and whether a fit or misfit between leaders' and employees' stress mindsets influences the interpersonal effects of the stress mindset. Employees and leaders may have different stress mindsets and, therefore, different understandings of when they want to give and receive health-promoting support. For example, one scenario might be that leaders with an SID mindset may be overprotective of employees with an SIE mindset, as they (mistakenly) interpret their health signals as early warning signs of stress and exhaustion (based on their own mindset), thereby crossing a personal line.

## Practical implications

These findings have relevant practical implications. Most importantly, health-promoting interventions, such as increasing health-oriented leadership behavior (Franke et al., 2014), (implicitly) rely on the assumption that leaders accurately perceive employees' well-being signals. Due to the biases in this perception found in the present studies, a crucial first step would be to raise leaders' awareness about these biases, teach them about stress mindsets, and acquaint them with the consequences of their own stress mindset. In the next step, leaders may be trained to correctly perceive and interpret their employees' signs of stress and exhaustion. That is, leaders need to be made aware that people differ in their assessment of stress, that is, their stress mindset, and that these differences can impact their stress response and their needs in such a situation.

However, based on the positive intrapersonal effects of the SIE mindset found in previous research (e.g., Crum et al., 2013; Park et al., 2018), the goal of such leadership training should not be to change leaders' mindset to a more SID mindset. Instead, it would be more advisable to specifically practice mindfulness and awareness of early warning signs of exhaustion among employees, so that leaders learn to adequately recognize and interpret employees' well-being signals and then show the required leadership behavior. To prevent a biased perception of employees' well-being, leaders should learn to refer to employees' behavior in specific situations to assess their well-being, instead of relying on their general impressions or intuition (similar to the findings in the literature on performance appraisals and job interviews; see, e.g., DeNisi & Murphy, 2017). As health warning signs differ between individuals, it would be especially important for leaders to pay attention to changes among individual employees (e.g., Dimoff & Kelloway, 2019); whereas one employee might react irritably and aggressively when stressed, another employee might be more likely to withdraw and avoid social contact at work when they feel overworked. Such changes from previous behaviors are possible indicators of exhaustion and strain. However, the perception of such changes among individual employees can often be difficult, for example, due to formal (social) distance from the employees. Therefore, establishing open communication regarding health-related issues is important. This can be achieved, for example, by leaders acting as role models, visibly taking care of their own health and openly talking about their own stress and strain (cf., Klug et al., 2019).

## Limitations

Despite these contributions, this study had several limitations. By using an experimental vignette methodology and presenting a realistic scenario, we were able to manipulate and control the independent variables and subsequently capture participants' responses. Although this

approach enhances experimental realism, allows the drawing of causal inferences that increase internal validity (Aguinis & Bradley, 2014), and is an effective way of assessing the consequences of stress mindset (Ben-Avi et al., 2018), the use of scenarios may raise the question of generalizability and external validity.

For example, leaders typically do not read about their employees, but rather observe them at work. Even though scenario studies are a widely applied approach, they mainly *describe* employees and work situations. For instance, in our study, we described an employee with high work demands and many private responsibilities; however, no information about his well-being was provided. This presentation was deliberately chosen because we were interested in how participants assessed ambiguous signs of stress and well-being depending on their stress mindset. As a next step, it would be interesting for future studies to capture different types and degrees of health warning signals and, thus, expand the findings of the present studies—for example, by showing videos of employees with different levels of exhaustion or work engagement.

We further asked participants about their intentions to show certain leadership behavior toward the employee, which might differ from their actual leadership behavior. Future studies might use a survey approach, in which employees describe their leaders' behaviors, or may choose a laboratory experiment, in which leaders are put into a role-play situation where their actual behaviors can be observed. In this context, it would also be interesting to vary the "target employee" of leaders' actions. In our scenario, we followed the example of Ben-Avi et al. (2018) and described the employee as a man who is 45 years old. Future studies could vary these demographics to further examine the generalizability of our findings.

Moreover, as indicated above, it would be interesting to examine the model in an actual organizational context, for example, through a field study. This might provide further insights into the ecological validity of our results. However, it is important to note that other studies in different research areas show that laboratory results are generally comparable with those in the field (e.g., Vanhove & Harms, 2015). In addition, previous research suggests that identification can be effectively manipulated in scenario studies and that the results of experimental studies (with manipulated identification) and field studies (with measured identification) are largely consistent (e.g., Chen et al., 2016; Ciampa et al., 2021; Schuh et al., 2016). Nevertheless, we call for future studies to examine the effects of leaders' stress mindset in a field setting. Furthermore, investigating the variables with different instruments and objective measures in addition to using multisource designs might reduce the risk of common method bias (e.g., Podsakoff et al., 2012).

In addition, we did not assess the participants' initial stress mindset before the experimental manipulation. Although our experimental procedure should have succeeded in randomizing the participants to the two experimental stress mindset conditions, we could not test whether the two mindsets were indeed similarly represented in both conditions in all studies. Different representations in the two conditions might explain some of the differences we obtained between the studies. However, our manipulation check was successful in all studies, and our focus was on studying the consequences of individuals' (manipulated) stress mindset rather than interactions between initial and manipulated mindsets. In addition, various studies have shown that different interventions can effectively change a person's stress mindset in the short and long term (e.g., through short videos, recalling positive vs. negative stressful situations, or even 2-h training; for a review see Jamieson et al., 2018). Future research might want to test the effectiveness of such interventions in light of the individuals' initial stress mindset. For example, it would be of interest to explore what happens if a person's initial stress mindset does not

match the assigned experimental condition, for instance, a person with an initial SIE mindset who is in the SID condition.

Another limitation of Studies 1 and 3 is the use of a crowdsourced sample. Platforms, such as MTurk, despite being used often in research, bear the risk that the participants suffer from a lack of attention (e.g., Cheung et al., 2017). However, to minimize this impact, we included several attention checks in our studies, and participants who incorrectly answered these items were excluded. Moreover, all studies, despite having slightly different methodologies and sampling methods, showed largely consistent results, which further bolsters our confidence in the present findings.

Finally, the three studies were conducted in two different countries (Germany and the United States), which may limit their generalizability to other countries, and cultural differences might explain some of the inconsistencies found across studies (e.g., House et al., 2013). Hence, another promising avenue for future research would be the examination of potential cultural influences on leaders' stress mindset and their effects. Indeed, the experimental manipulation of participants' stress mindset (instead of assessing their actual stress mindset) impedes assumptions about cultural differences in the prevalence of an SID or an SIE mindset; thus, further research examining cultural influences on the stress mindset in different countries and cultures would be desirable.

## Conclusion

Rising levels of stress in the workplace and the resulting health problems require leaders to take care of their employees' health and to correctly interpret the first signs of exhaustion and overwork. Although tentative and in need of further replication, these findings provide initial evidence that leaders' stress mindset, that is, their belief about the nature of stress, bias the perception and judgment of an employee's well-being, which, in turn, affects the degree to which leaders intend to show health-promoting support. The results also suggest the crucial role of leaders' team identification, strengthening this projection process for leaders who strongly identify with their team. These findings hopefully encourage future studies on the novel concept of the stress mindset in the workplace, especially within the leader–follower relationship, as well as helping practitioners, for example, by developing leadership training based on these concepts and effects.

## CONFLICT OF INTEREST

The authors declare no conflict of interest.

## ETHICS STATEMENT

The present research is in line with the ethical guidelines of the German Psychological Society.

## DATA AVAILABILITY STATEMENT

Data available on request from the authors.

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## ENDNOTES

- <sup>1</sup> To determine the influence of participants being a leader in their current job, we conducted additional analyses with leadership position as a control variable. The significance of the results did not change.
- <sup>2</sup> As in Study 1, we examined the influence of leadership experience and ran the model again with leadership position as a control variable. The results remained the same.
- <sup>3</sup> As in Studies 2 and 3, we again ran the model with leadership position as a control variable. The results remained the same and significance did not change.

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