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# Supervisor Workplace Stress and Abusive Supervision: The Buffering Effect of Exercise

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## Abstract

**Purpose** We examine how supervisor stress is associated with employee-rated abusive supervision. In addition, we test the premise that higher levels of physical exercise by supervisors can buffer the negative effects of stress on their relationship with their subordinates.

**Design/Methodology/Approach** A matched sample of 98 employed individuals and their direct supervisors was used to test our hypotheses.

**Findings** Results suggest that increased levels of supervisor-reported stress are related to the increased experience of employee-rated abusive supervision. We also find that the relationship between supervisor stress and abusive behavior can be diminished when supervisors engage in moderate levels of physical exercise.

**Implications** While the current economic conditions and a host of other trying workplace factors mean that supervisors are likely to experience workplace stress, we found

evidence that they do not necessarily have to transfer these frustrations onto those they supervise. Our study supports a link between supervisor stress and employee perceptions of abusive supervision, but this is a link that can be loosened if supervisors engage in moderate levels of physical exercise.

**Originality/Value** The results of this study add to the modest number of antecedents to abusive supervision that have been discovered in existing research. In addition, this is the first study to examine how exercise can buffer the relationship between supervisor stress and employee perceptions of abusive supervision.

**Keywords** Abusive supervision · Stress · Exercise

Demands for high productivity, the quest for efficiency, and the competitiveness of modern work organizations have contributed to an environment for workers where job stressors are many and commonplace. Supervisors, who are usually responsible for carrying out changes during turbulent economic times, are especially at risk of experiencing increased levels of stress at work (Hogan and Overmyer-Day 1994; Srivastava et al. 1994). Therefore, at the present time perhaps more than ever, it is crucial for researchers to understand how supervisors react to stressful working situations.

One possible result of supervisors experiencing distressing and/or dissatisfying conditions in their working environments is abusive supervision (Rafferty et al. 2010; Tepper 2007). The literature on abusive supervision (“subordinates’ perceptions of the degree to which their direct supervisors engage in the sustained display of hostile verbal and nonverbal behaviors toward them”—Tepper 2000, p. 178; examples include lying, public ridicule, and

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other put-downs) has demonstrated a host of negative consequences for subordinates (Hershcovis and Barling 2010). These consequences include negative attitudes, such as lower job satisfaction and organizational commitment (Tepper 2000; Keashly et al. 1994), aggressive and/or deviant behavior (Mitchell and Ambrose 2007; Inness et al. 2005), lower work performance (Harris et al. 2007), psychological distress (Rafferty et al. 2010; Duffy et al. 2001; Ashforth 1997), and lower self-esteem (Burton and Hoobler 2006). Although there is a multitude of research that examines the potential outcomes of abusive supervision, very few studies have examined the factors that may cause a supervisor to become abusive (Tepper et al. 2011; Tepper 2007). Our hypotheses add to the body of work on the antecedents to abusive supervision to suggest that supervisor perceptions of stress are associated with subordinates' perceptions of supervisor abuse.

However, we propose that stressful working conditions do not always have to be associated with abusive supervision; that is, supervisor stress is not fatalistic in damaging the relationship between supervisors and subordinates. We test the premise that higher levels of physical exercise by supervisors can buffer the negative effects of stress on their relationship with their subordinates. We draw on displaced aggression (Tedeschi and Norman 1985), coping (e.g., Lazarus and Folkman 1984), and recovery/resource theories (e.g., Meijman and Mulder 1998; Hobfoll 1989) to underpin our hypotheses.

### Supervisor Stress and Perceptions of Abusive Supervision

Stress has been defined as the relationship between a person and his/her environment that is perceived to be unbalanced in terms of one's physical and psychological resources and the demands of the situation (Lazarus and Folkman 1984). Individuals strive to maintain (or even increase) their resources, such as time and energy, and threats to these resources can result in stress (Hobfoll 1989). Workplace stress is often related to the design of the job, the culture and environment of the workplace setting, relationships that exist in the workplace, or some combination of these (Yoo et al. 2009). Job demands, such as working longer hours and the associated increased perceptions of time pressure, can make it difficult for supervisors to psychologically detach from their job (Sonnetag et al. 2010), which can have negative impacts on supervisors' mood and behavior (Sonnetag and Zijlstra 2006). In addition, when one experiences certain job demands, such as working longer hours, and the person cannot predict how long this will continue, stress results (Meurs and Perrewé 2011). Drawing from our arguments above, especially in turbulent economic

times, the unbalance supervisors feel when the demands of the situation outpace their resources, such as the time and energy needed for successful job performance, gives rise to perceptions of workplace stress. Note that we are not examining the individual antecedents of stress in this article, but rather adopt the approach of Dohrenwend et al. (1984) and Lazarus and Folkman (1984) to argue that the symptoms of stress are indistinguishable from the actual stressors. Therefore, we focus our attention on the supervisor's *overall perceptions of stress*, and more specifically on the time pressures at work that determine their stress.

Although research is lacking on what supervisor traits, workplace situations, and the like predicate abusive behavior, in the few studies that have investigated the antecedents of abusive supervision, many researchers have framed abusive supervision as displaced aggression (Tepper 2007). Displaced aggression is the "redirection of a [person's] harm-doing behavior from a primary to a secondary target or victim" (Tedeschi and Norman 1985, p. 30). Theorizing in the area of displaced aggression (Miller et al. 2003; Twenge and Campbell 2003) has suggested that, when things go wrong, characteristics of the supervisor–subordinate relationship (e.g., power differentials, esteem-related judgments) may be salient triggers for displaced aggression. Because the source of supervisors' workplace stress may be indefinable, for example, when there is not a specific person responsible for a supervisor's increased workload due to "management's" decision to downsize his/her or department, the supervisor is often unable to confront or define the source of his or her workplace stressors. Therefore, instead of confronting a provocateur, the literature suggests (Aryee et al. 2007; Hoobler and Brass 2006; Tepper et al. 2006), supervisors will turn toward other, less powerful individuals on whom to vent their frustrations.

Both Hoobler and Brass (2006) and Aryee et al. (2007) found evidence that when supervisors are frustrated by organizational circumstances (in their research, psychological contract breach and interactional injustice, respectively), their subordinates reported greater abusive supervision. That is, congruent with the theory of displaced aggression, when a supervisor confronts frustrating workplace events (here, stress from not being able to satisfy workplace demands) this evokes the need for aggression. Note that the parties that supervisors have power over in organizations are their subordinates. As such, when a supervisor experiences workplace stress, this is positively associated with their subordinate experiencing abusive supervision.

**Hypothesis 1** Supervisor perceptions of workplace stress are positively associated with employee perceptions of abusive supervision.

## Supervisor Exercise as a Buffer of Stress

As one would expect, not all individuals react in the same way to stressful events (Meurs and Perrewé 2011; Luria and Torjman 2009). The effect that stress has on some individuals is primarily a result of the inability to recover from the stress, rather than the stress itself (Meurs and Perrewé 2011). In fact, individuals who experience high levels of time pressure at work have demonstrated the greatest need for recovery (Sonnentag et al. 2010; Sonnentag and Krueger 2006; Sonnentag and Zijlstra 2006; Sonnentag and Bayer 2005). The ability to recover from job demands over the weekend, or even overnight, has been shown to be related to greater levels of performance (Binnewies et al. 2010), general well-being (Fritz and Sonnentag 2005), positive moods, and low fatigue (Sonnentag et al. 2008; Sonnentag and Bayer 2005). While there are many different methods that individuals can undertake to recover from or cope with stress (e.g., Binnewies et al. 2010; Matheny et al. 1987), we focus our attention on exercise and examine how it impacts the relationship between supervisor stress and employee mistreatment. We focus our attention on exercise because it has been considered a leisure activity that helps a person recover from and cope with stress (Gerber et al. 2010; Sonnentag and Zijlstra 2006).

Although there is a long research history of support for the direct impact of exercise on physical and mental health (e.g., Gerber et al. 2010; Craike et al. 2010; Mackay and Neill 2010; Crone et al. 2009), research has also demonstrated that exercise helps *buffer* the negative effects of stress on health (Gerber and Pühse 2009). Specifically, exercise acts as a coping or recovery mechanism for stressful life events and environments (Gerber et al. 2010; Cooper and Berwick 2001). This buffering effect has been demonstrated to be especially potent when stress is perceived as high (Crone et al. 2005). In fact, Craike et al. (2010) state, "...when the level of stress of an individual is low, the impact of the 'buffering factor' will be negligible. However, when the level of personal stress is high, a successful buffering factor will block the impact of that high stress" (p. 25). Taylor et al. (2008) demonstrated that a person's fitness level reduced the impact of stressful events during military survival training. Crone et al. (2005) found in a qualitative study that individuals who exercised more frequently adequately coped with all aspects of their life and especially with stressful events. Sonnentag and Bayer (2005) demonstrated that physical activity in the evening was associated with positive moods. In the workplace-related literature, Levinson (1996) argued that exercise is one tool for burned-out executives to deal with the effects of stress.

Although there is no clear consensus on the exact mechanisms for exercise's role in buffering stress (Crone

et al. 2009), it is likely exercise buffers against stressful events through psychosocial mechanisms (Biddle 2000). It is thought that exercise helps individuals build psychological resiliency to stressful events (Lovelace et al. 2007). Meta-analyses by Crews and Landers (1987) and Wipfli et al. (2008) demonstrated that physically fit individuals had a lower psychosocial response to stressful events compared to control groups. Austin et al. (2005) demonstrated that when teachers experience high levels of stress, they are more likely to engage in negative coping behaviors (e.g., uncontrolled aggression, less acceptance of responsibility for mistakes, and avoidance of others). However, teacher exercise (e.g., a positive coping strategy) lessened these effects. In addition, exercise is likely to mitigate stressful events because individuals who exercise interpret stressful events differently than individuals who do not exercise (e.g., Buckaloo et al. 2009; Ritvanen et al. 2007; Norris et al. 1990). For example, Nguyen-Michel et al. (2006) found that individuals who engaged in more physical activity perceived and reported less stress or "hassles" than individuals who were less physically active. As well, individuals who exercise often report more perceived control over their life and the events that happen to them (Taylor 2000).

Although the exact mechanisms are unclear, there is ample evidence that exercise buffers the negative effects of stress on a variety of outcomes, but especially mental and physical health. What is not so clear is how or if exercise buffers the effect of stressful events on negative supervisor behavior, such as abusive supervision. We believe it is necessary to bring this type of study into a general workplace situation to examine the effect exercise has on the relationship between supervisor stress and abusive supervision, especially given the potential costs, both financial and psychological, to organizations and employees when this type of behavior is prevalent.

Although the role of stress and exercise has not been studied in relation to abusive supervision in the past, we believe it is likely that the buffering mechanisms of exercise that limit the negative effect of stress on physical and mental health operate in a similar fashion to impact a supervisor's decision to become aggressive. Psychologically, supervisors who experience stress but exercise are likely to interpret these stressful events differently than supervisors who do not exercise. We know that physically active individuals are less reactive to stressful events than less active people (Rimmele et al. 2009; Taylor 2000). In addition, we know that physical exercise is positively related to moods (Sonnentag and Bayer 2005). This is likely to hold true for supervisors who experience high levels of stress. If they are less reactive to stressful events, they may be less likely to engage in abusive supervision. In fact, Kobasa et al. (1982) demonstrated that male managers

who exercised frequently experienced fewer stress symptoms when exposed to high levels of stress. Falkenberg (1987) theorized that exercising helps managers in the long-term to increase their resistance to stressful events in the workplace. In addition, Falkenberg (1987) argues that in the short-term, managers who exercise are more relaxed, more cognitively focused, and less anxious. Therefore, we expect that when supervisors experience stress, but engage in exercise, their subordinates will report lower levels of abusive supervision.

**Hypothesis 2** Supervisor exercise level moderates the relationship between supervisor perceptions of workplace stress and employee perceptions of abusive supervision such that higher exercise levels decrease the positive relationship between stress and abusive supervision.

## Method

Participants for this study were full-time employed MBA students (and their supervisors) located at two universities in the Midwestern United States. The participants were approached in class and granted extra credit for their participation in this study. Individuals who agreed to participate completed a survey that measured their perceptions of the abusiveness of their current supervisor as well as various demographic variables. In addition, these participants were asked to give a sealed envelope to their immediate supervisor. The sealed envelope included a survey and a postage-paid return envelope addressed to the researchers. The supervisor survey included questions on exercise frequency and workplace stress, as well as demographic variables. All surveys had a unique identifying number so we could match the employee and supervisor surveys upon receipt. A total of 148 MBA volunteers agreed to participate and complete the various measures. Of these 148 students, we received 105 matched surveys from their supervisors. However, we chose to focus our attention on supervisors and employees who had more than 2 months working together to allow for more accurate perceptions of abuse. Some research has suggested the existence of an initial “honeymoon” period where uncivil, antisocial behavior may be tolerated from supervisors (Pearson and Porath 2004). So, excluding employees who were “brand new” to their supervisors, our final sample size consisted of 98 matched surveys. Sixty percent of the MBA students were male and they averaged 30.69 years of age ( $SD = 9.26$ ), and 11.04 years of work experience ( $SD = 8.93$ ). Seventy-two percent of the supervisors were male, and they averaged 43.04 years of age ( $SD = 11.38$ ) and 23.26 years of work experience ( $SD = 11.06$ ).

## Measures

### *Employee Perceptions of Abusive Supervision*

Employees in this study answered 15 items from Tepper (2000) designed to measure perceptions of abusive supervision. Respondents used a 7-point scale (1 = Strongly Disagree, 7 = Strongly Agree) to indicate the extent of supervisor behaviors such as “tells me my thoughts or feelings are stupid,” or “puts me down in front of others.” To be consistent with past research using this scale, we averaged the 15 items to create our measure of abusive supervision (Mean = 1.94,  $SD = .89$ ,  $\alpha = .91$ ).

### *Supervisor Perceptions of Workplace Stress*

The degree to which supervisors experienced workplace stress was assessed using 7 items (1 = Strongly Disagree; 7 = Strongly Agree) from Parker and DeCotiis (1983) designed to measure the extent to which perceived time pressures on the job cause stress (e.g., “Working my current job leaves little time for other activities;” “I have too much work and too little time to do it in”). To be consistent with past research and theory, we averaged the 7 items to create our composite measure of workplace stress (Mean = 3.58,  $SD = 1.22$ ,  $\alpha = .85$ ).

### *Supervisor Exercise Frequency*

To assess the degree to which supervisors in this sample exercised, we utilized the approach suggested by Brown (1991). Specifically, we asked each supervisor, on average, how often they exercise per week (1 = never, 2 = 1 day, 3 = 2–3 days, 4 = 4–5 days, 5 = 6–7 days) (Mean = 2.76,  $SD = 1.10$ ). Self-reports of physical fitness/exercise have been shown to be consistent with objective measures of exercise (Brown 1991).

### *Control Variables*

We controlled for employees’ level of negative affectivity to help rule out alternative explanations for employees’ perceptions of abusive supervision. It is common practice (c.f., Zellars et al. 2002; Aryee et al. 2007) to assume that employees’ negative mood influences the degree to which they interpret their supervisors’ behavior as abusive. Employees were asked 4 items (Watson et al. 1988) designed to measure their general level of negative affectivity. We created our composite measure of negative affectivity by averaging the items (Mean = 2.68,  $SD = .99$ ,  $\alpha = .76$ ). In addition, supervisor gender and age were controlled for in all analyses involving exercise since gender (Stephens and Caspersen 1994) and age (Caspersen et al. 2000) have been

**Table 1** Means, standard deviations, and correlations

Variable	M	SD	1	2	3	4	5	6
1. Abusive supervision	1.94	.89	(.91)					
2. Supervisor stress	3.58	1.22	.21*	(.85)				
3. Supervisor exercise	2.76	1.10	-.01	-.17				
4. Employee N.A. <sup>a</sup>	2.68	.99	.22*	.11	.12	(.76)		
5. Tenure with supervisor	2.38	1.81	.05	-.04	.12	-.11		
6. Supervisor gender	–	–	.05	.08	.14	.03	-.02	
7. Supervisor age	43.04	11.38	-.10	-.09	.24*	.12	.24*	.07

Numbers in parentheses are coefficient alpha

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$  (two-tailed)

<sup>a</sup> Employee N.A. = Employee Negative Affectivity

shown to influence exercise participation and, sometimes, perceptions of stress (Nguyen-Michel et al. 2006). Finally, we controlled for employees' tenure with their supervisor because even though we excluded dyads who had been working together less than 2 months, those employees working for their supervisors for relatively shorter durations (3–6 months, for example) (1) may have limited opportunities to observe behaviors indicative of abusive supervision, and (2) may still be giving their supervisor “the benefit of the doubt” when judging the valence of their interpersonal behavior (Pearson and Porath 2004).

## Results

All means, standard deviations, and correlations for this study are reported in Table 1. In order to demonstrate adequate model fit for our constructs of interest, we conducted a confirmatory factor analysis. Given our small sample size, we formed parcels using the approach suggested by Little et al. (2002). Specifically, the parcels were formed by balancing the best and worst loading items across the parcels. The measurement model fit our data well according to a variety of goodness of fit indices (NFI = .98; RFI = .97; RMSEA = .00; SRMR = .03).

Hypothesis 1 indicated that supervisor workplace stress would be positively associated with employee ratings of abusive supervision. A perusal of the correlation matrix lends initial support for our hypothesis. Specifically, supervisor stress is significantly related to employee perceptions of abusive supervision ( $r = .21$ ,  $p < .05$ ). To more rigorously test this relationship, hierarchical regression analysis was conducted. After controlling for employee negative affect and tenure with supervisor,<sup>1</sup> the

addition of supervisor stress to the regression equation explained an additional 4% of the variance in employee ratings of abusive supervision ( $F = 4.01$ ,  $p < .05$ ). Hypothesis 1 is supported. Please see Table 2.

Hypothesis 2 indicated that supervisor exercise level moderates the relationship between supervisor ratings of workplace stress and employee ratings of abusive supervision. To test for moderation, we utilized the approach suggested by Baron and Kenny (1986). All variables were centered to help control for the effects of collinearity. In the first step, we included our control variables (i.e., employee negative affect, tenure with supervisor, supervisor gender, and supervisor age). In the second step, we entered our independent variable, supervisor stress, and our moderator, supervisor exercise. In the final step, we included the interaction between our independent variables and our moderator variable. A significant interaction indicates moderation. The results of our regression analyses lend support to hypothesis 2 (please see Table 2). Specifically, the addition of the supervisor stress and exercise interaction term explained an additional 4.5% of the variance in employee ratings of abusive supervision ( $F = 4.48$ ,  $p < .05$ ).

We also conducted an additional analysis to help rule out an alternative explanation to this hypothesis (i.e., it is not that supervisor exercise buffers the negative effects of stress on abusive supervision, it is simply that supervisors who exercise perceive lower levels of stress). The correlation matrix reveals that supervisor perceptions of stress and exercise are not significantly related ( $r = -.17$ ,  $n.s.$ ). In addition, after controlling for supervisor age and gender, regression analyses demonstrate no significant influence of supervisor exercise on supervisor perceptions of stress (Change in  $R^2 = .03$ ,  $F = 3.22$ ,  $n.s.$ ).

We examined the interaction using a Johnson-Neyman test (see Hayes and Matthes 2009) which allows us to identify a specific range of values of the moderator variable (i.e., supervisor exercise) where the relationship

<sup>1</sup> Please note that all of the results reported in this paper are similar without the use of the control variables included in the regression equations.

**Table 2** Supervisor workplace stress, exercise, and employee perceptions of abusive supervision

Variable	Hypothesis 1 Std. Beta	Hypothesis 2 Std. Beta
Emp. negative affectivity	.21*	.20
Emp. tenure with supervisor	.08	.13
Supervisor gender	–	.04
Supervisor age	–	–.19
Supervisor stress	.20*	.15
Supervisor exercise	–	.01
Stress $\times$ exercise	–	–.22*
Total $R^2$	.09	.16
Change in $R^{2a}$	.04*	.05*

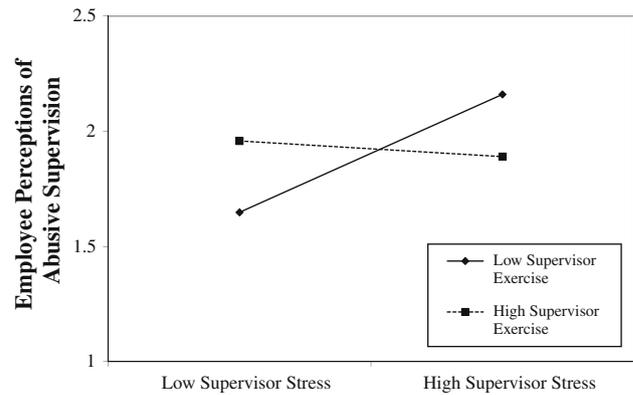
Standardized betas shown for final regression equation

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

<sup>a</sup> Change in  $R^2$  for the addition of Supervisor Stress or interaction term (stress  $\times$  exercise) to the regression equation. For all interaction analyses, all variables were centered

between supervisor perceptions of stress is significantly related to employee perceptions of abusive supervision. We also used the more common Aiken and West (1991) approach where we examined the moderator at values  $\pm 1$  standard deviation from the mean. Both approaches lend additional support to our hypothesis. Using the Aiken and West (1991) approach, we see a stronger relationship between supervisor perceptions of stress and employee perceptions of abuse for supervisors who exercise less frequently (please see Fig. 1). In addition, using the Johnson-Neyman test, we find that when supervisor exercise level is 2.47 or below (again, this number represents the frequency of exercise per week on a five-point scale), we see a significant relationship between supervisor-reported workplace stress and employee-reported abusive supervision. Above 2.47, the relationship between supervisor stress and employee perceptions of abusive supervision is not significantly different from zero. The results of our analyses demonstrate that it is supervisors with low levels of exercise who appear to be most responsive to stress by engaging in abusive supervision. Hypothesis 2 is supported.<sup>2</sup>

<sup>2</sup> When conducting the analyses using the full sample (i.e., including employees who have worked for their supervisor for less than 2 months), the results for hypothesis 2 are almost identical. However, hypothesis 1 is not supported. The difference in these results could be due to the fact that newer employees have not had the opportunity to experience abusive supervision; the supervisors of new employees may be “taking it easy” on their new employees; or there may be a “grace” period where employees give their new supervisor the benefit of the doubt even when they exhibit negative behaviors which would be considered later to be abusive.

**Fig. 1** Supervisor workplace stress and exercise on employee ratings of abusive supervision

## Discussion

In a study matching responses of supervisors and their subordinates, we found evidence that when supervisors reported experiencing time-based workplace stress, their subordinates reported higher levels of being victimized by abusive supervision. This finding adds to the modest number of antecedents to abusive supervision that have been discovered in existing research. Our finding is consistent with the previous literature that has found that supervisors seem to become aggressive (in a displaced fashion) when workplace situations become frustrating, such as when organizations and colleagues generate feelings of injustice and imbalance (Rafferty et al. 2010; Aryee et al. 2007; Hoobler and Brass 2006; Tepper et al. 2006). As such, the evidence seems to be growing that supervisor frustrations tend to be vented or displaced onto subordinates, and one mechanism for this is through behaviors indicative of abusive supervision.

We also found evidence that while supervisor stress was associated with abusive behavior, this effect was diminished when supervisors engaged in higher levels of physical exercise. Please note that we did not find a direct relationship between supervisor exercise and their perceptions of workplace stress. Therefore, our results cannot be explained by the fact that supervisors who exercise more simply experience less stress. Instead, our results lend support to the idea that exercise buffers or minimizes the negative effects of supervisor stress on their abusive behavior toward their subordinates. In addition, it is important to note that we demonstrated that only relatively moderate levels of exercise are necessary to minimize this particular negative effect of stress in supervisors. Recall that we found this buffering effect when a supervisor reaches an exercise level of 2.47 (again the number of times per week they exercise on a five-point scale; 2.47 in this study is equivalent to roughly 1–2 days of exercise per

week). This level of exercise is actually below the average level of exercise reported by supervisors in this sample (2.76). Finally, in supplemental analyses, we found that the buffering effect of exercise occurred regardless of the type of exercise that the supervisor engaged in (i.e., weight lifting, aerobic exercise, yoga, etc.). Therefore, at least in our sample, it does not appear to matter what kind of exercise a supervisor participates in but rather the simple act of exercising that appears to minimize the negative effects of supervisor workplace stress on subordinates.

### Implications for Managerial Practice

Perhaps the greatest contribution of this study comes from its potentially practical implications. To this point, the abusive supervision literature has done a poor job of specifying the antecedents to abuse. As such, human resource (HR) managers are aware of the host of negative outcomes of abusive supervision, but have been left with few tools with which to combat it. Perhaps supervisors could be taught productive coping skills for dealing with workplace stress en route to stemming their dysfunctional behavior toward their subordinates. Training programs could emphasize and organizations may choose to reward exercise as a strategy to reduce the organization's health-care costs, but also to promote healthy supervisor–subordinate relationships. Wellness programs, often inclusive of exercise components, have been advocated to control workplace stress for years, but this study adds support for their specific relevancy in smoothing supervisor–subordinate relationships.

### Limitations

First, we did not measure actual fitness level, but rather focused on self-reported levels of exercise. Although self-reported exercise has been shown to be consistent with actual exercise levels (Brown 1991), it is possible that the results could differ if one examined the actual fitness level of the participants (e.g., treadmill test, waist-to-hip ratio, etc.). It may be that exercise level is simply a proxy for fitness level—the latter being the better explanation for coping with workplace stressors in less aggressive ways. Second, a shortcoming lies in our use of cross-sectional data. Given the nature of the sample, we could not measure supervisor fitness and workplace stress at different times. However, we were able to separate the measurement of the independent and dependent variables by using different sources (Podsakoff et al. 2003) which helps minimize this limitation to a degree.

Some may criticize the fact that we only measured one type of supervisor stress, namely perceived time pressure. Other measures such as anxiety or burnout should also be

examined in future studies as potential triggers of displaced aggression. We chose to focus our attention on the perceived time pressure supervisors experience due to its frequent use as a quantitative measure of workload in previous stress research (e.g., Sonnentag and Bayer 2005). We felt that the phenomenon of supervisors having to “do more” with fewer resources given the current “Great Recession,” made time pressure an apt indicator of stress for supervisors today. Relatedly, while we based Hypothesis 1 on the theory of displaced aggression, the exact mechanism through which perceptions of time pressure (stress) activate subordinates' perceptions of abusive supervision remains somewhat unclear. Future studies would do well to include mediating variables such as supervisor emotions (e.g., anger and frustration) and behaviors (e.g., impatience, close monitoring) that may explain subordinates' tendency to see their supervisor as abusive when the latter experiences time pressure at work.

Another criticism that should be considered when interpreting the results of our study is that supervisors who exercise may be fundamentally different from those who do not. For example, it could be that those who have the self-discipline, or who are perhaps higher in conscientiousness, are more likely to follow a regular exercise regimen, and at the same time these traits may allow them to do a better job controlling and monitoring their own emotions and behavior in interactions with those they supervise. This possible personality difference, which could explain both dedication to exercise and interpersonal behavior, could be an alternative explanation for our findings and future research may wish to test this.

Finally, in our study the percentage of variance explained was rather small. However, we believe the results are still informative to the literature (as well as practice) given that this is the first study to examine how exercise moderates the relationship between supervisor workplace stress and employee perceptions of abuse. In addition, although the variance explained is small, the cost of abusive supervision to an organization is potentially large. Abusive supervision can create a bullying culture (Hoobler and Swanberg 2006) as well as lead to spirals of incivility (Andersson and Pearson 1999) in the workplace. So getting rid of an abusive supervisor is not as easy as firing one “bad egg,” but rather the insidious nature of this negative social contagion may take years and extensive interventions to erase from organizational cultures.

### Conclusion

While the current economic conditions and a host of other trying workplace factors mean that supervisors are likely to experience workplace stress, we found evidence that they

do not necessarily have to transfer these frustrations onto those they supervise. Our study supports a link between supervisor stress and employee perceptions of abusive supervision, but this is a link that can be loosened if supervisors engage in the healthy buffering mechanism of a moderate level of physical exercise.

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