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The Crossover of Psychological Distress From Leaders to Subordinates in Teams: The Role of Abusive Supervision, Psychological Capital, and Team Performance

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This study examines the underlying mechanism of the crossover process in work teams. Drawing on conservation of resources theory, we hypothesize that a leader's psychological distress positively influences subordinates' psychological distress through abusive supervision. We further hypothesize that team performance attenuates the association between a leader's psychological distress and abusive supervision. In addition, we expect that psychological capital attenuates the positive relationship between abusive supervision and subordinates' psychological distress. Participants were drawn from 86 business teams, and multisource data were collected. The hypotheses were tested with multilevel analysis. Results supported the crossover of psychological distress from leader to subordinates, and abusive supervision serves as a mediating mechanism. The positive relationship between a leader's distress and abusive supervision is stronger when team performance is lower. In addition, the positive relationship between abusive supervision and subordinates' psychological distress is stronger when subordinates' psychological capital is lower.

Keywords: crossover, psychological distress, abusive supervision, team performance, psychological capital

Crossover is an interpersonal process that occurs when job stressors or strains experienced by one individual affect the levels of stressors or strains experienced by another person in the same social environment (Westman, 2001). Previous studies have provided evidence of strain crossover in many forms, including anxiety (Westman, Etzion, & Horovitz, 2004), depression (Howe, Levy, & Caplan, 2004), distress (Barnett, Raudenbush, Brennan, Pleck, & Marshall, 1995), burnout (Bakker, Westman, & Schaufeli, 2007), perceived ill health (Westman, Keinan, Roziner, & Benyamini, 2008), and marital dissatisfaction (Westman, Vinokur, Hamilton, & Roziner, 2004).

Westman's (2001) crossover model suggests three underlying processes of crossover: direct crossover via empathy, indirect crossover via social interaction processes (e.g., social undermining), and spurious crossover effect due to common stressors. Although many studies suggest that crossover is a significant and prevailing phenomenon, much remains unknown about how crossover occurs. Several studies have found some moderators of direct crossover (Bakker & Schaufeli, 2000; Bakker, Westman, & van Emmerik, 2009; Bakker & Xanthopoulou, 2009). However, few of them have examined the mediating processes through which crossover occurs. For instance, Westman and Etzion (1999) hypothesized but did not find empirical support for strain crossover occuring from school principals to teachers via social undermining. More recently, Ten Brummelhuis, Haar, and Roche (2014) found that burnout crossover occurs from leader to followers through the transfer of emotions and inadequate social support. Although the aforementioned preliminary findings are important, the potential role of negative social interaction in the indirect crossover process remains unclear. In addition, the boundary conditions that foster or impede the indirect crossover process between leader and subordinates warrant much more investigation (Ten Brummelhuis et al., 2014). In this study, we focus on the indirect mechanism of distress crossover from leaders to followers, specifically a common and destructive form of negative social interaction between leaders and followers that lies in the core of leader-follower relationships—abusive supervision (Ten Brummelhuis et al., 2014; Hoobler & Hu, 2013). In particular, does abusive supervision explain the relationship between leader distress and follower distress, and under what conditions? The findings therefore may help clarify the potential mechanisms underlying the crossover between leader and followers in teams.

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Furthermore, the majority of crossover studies focus on crossover between spouses and partners (Bakker et al., 2009; Haines, Marchand, & Harvey, 2006; Westman & Etzion, 1995). Recently, the scope of crossover research has been extended from romantic couples to include paired individuals in the work environment (Bakker & Xanthopoulou, 2009; Westman & Etzion, 1999). As an emerging field, however, most studies of the workplace have mainly investigated crossover effects between colleagues at the same level of hierarchy (e.g., Bakker & Xanthopoulou, 2009). It is surprising that crossover from leader to subordinate has rarely been explored with few exceptions (e.g., Ten Brummelhuis et al., 2014; Hoobler & Hu, 2013). Leaders have formal authority to make important decisions relating to promotions, salaries, and training opportunities, and thus exert greater influence on employees' attitudes and behaviors than their work colleagues at the same level of hierarchy (Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009; Tucker, Turner, Barling, & McEvoy, 2010). Therefore, more research attention should be paid to the cross-level crossover processes between supervisors and team members (Bakker et al., 2009).

The present study thus makes novel contributions to the crossover literature, specifically by extending our understanding of psychological distress crossover from supervisors to subordinates in teams. Drawing on conservation of resources (COR) theory, this study investigates the mediating process of abusive supervision and the moderating effects of team performance and subordinate psychological capital on the indirect crossover process. COR theory asserts that individuals are motivated to protect their current resources and acquire new resources (Hobfoll, 2001). Resource loss is more salient than resource gain. Indeed, resource loss has primarily been used to explain stress and strain (Hobfoll, 2001). Therefore, this study fills an existing research gap by explaining the process of psychological distress crossover in teams, and thus, it has the potential to contribute to the integration of crossover processes into COR theory in the team settings.

Theory and Hypotheses Development

The Crossover Process

To provide a systematic theoretical explanation of crossover effects, Westman (2001) proposed three mechanisms in the stressor/strain crossover process: a direct process, a spurious effect from common stressors, and an indirect effect. In the direct process, strain in one partner leads to an empathetic reaction in the other partner, and the other thus feels more stressed (Westman, 2001). It implies that direct strain transmission is the result of an empathic reaction, which refers to "sharing another's feelings by placing oneself psychologically in that person's circumstances" (Lazarus, 1991, p. 287). Second, in the spurious effect, crossover derives from a common stressor in the environment in which both partners reside. Many stressors (e.g., project deadlines) can make simultaneous demands on both partners in a dyad (Hobfoll & London, 1986).

Finally, the indirect mechanism posits mediators (e.g., coping mechanisms, social support, and undermining) in the crossover process. Compared with the direct mechanism, the indirect mechanism is largely overlooked with few exceptions. Westman and Vinokur (1998) found that the correlation in depression within couples was primarily due to crossover via negative social interactions. However, this study was conducted in a family context and the effect may be different in a work team settings. Hoobler and Hu (2013) found that abusive supervision mediated the relationship between supervisors' negative affect and subordinates' negative affect, yet with a focus on leader-follower dyads instead of crossover pertaining to entire work teams. More recently, Ten Brummelhuis et al. (2014) found that burnout crossed over from leader to followers via inadequate social support. However, they only focused on the positive mechanism (social support) without assessing the negative interaction (i.e., abusive supervision), which may be an appropriate mechanism underlying burnout crossover. Thus, they suggested that future research investigate the mediating role of undermining behaviors (e.g., abusive supervision) and the boundary conditions of such role. Westman (2001) asserted that both detecting the underlying mechanisms of the crossover process and clarifying their boundary conditions are critical to developing a systematic theoretical and empirical approach in the crossover domain. This study answers that call, drawing on COR as the overarching theory, delineating an indirect negative social interaction mechanism (e.g., abusive supervision) and investigating the potential moderating factors.

COR Theory

COR theory (Hobfoll, 1989, 2001) asserts that individuals strive to obtain, retain, and protect resources. Resources are defined as objects, personal characteristics, conditions, energies or other things that people value (Hobfoll, 2001). The value of resources varies across individuals and is related to their personal experiences and specific situations. COR theory suggests that resources loss is more salient than resource gain. Individuals with fewer resources are more vulnerable to resource loss, which thus causes a resource loss spiral (Hobfoll, 2001). Individuals who lack resources will experience many negative consequences, for instance, reduced job performance (Wright & Cropanzano, 1998), increased burnout (Halbesleben, 2006), decreased job satisfaction (Grandey & Cropanzano, 1999) and more work–family conflict (Carlson, Ferguson, Hunter, & Whitten, 2012; Carlson, Ferguson, Perrewé, & Whitten, 2011). Thus, when resource depletion occurs, individuals will carefully select the manner in which they use their remaining resources, avoid future resource loss and strive to replenish their resource reservoirs (Hobfoll, 2001). Psychological distress is a mental state characterized by negative thoughts and feelings, such as anxiety, fear, and depression (Selye, 1974). As psychological distress is a typical form of resource depletion (Byrne et al., 2014), we employ COR theory to elaborate the crossover process of distress.

Abusive Supervision and COR Theory

In line with COR theory and the crossover model, we expect that leaders who feel psychologically distressed will exhibit more abusive supervision. Westman (2001) suggested negative interpersonal interactions mediate the crossover process as an indirect path. In the context of leader—subordinate relationships, abusive supervision is an appropriate variable in capturing this kind of negative and destructive pattern (Ten Brummelhuis et al., 2014). Therefore, we select abusive supervision as a potential mediating factor.

Abusive supervision is defined as "subordinates' perceptions of the extent to which supervisors engage in the sustained display of hostile verbal and nonverbal behaviors, excluding physical contact" (Tepper, 2000, p. 178). Leaders must perform many complex and demanding tasks to exert effective leadership (Wang, Sinclair, & Deese, 2010). Thus, being an effective leader requires a number of personal resources. A leader experiencing affective and cognitive distress symptoms can be characterized as being in a state of psychological resource depletion (Byrne et al., 2014). While COR theory maintains that people must invest resources to recover from losses, depleted individuals will often adopt defensive postures to conserve what little they have left, and they may even use counterproductive and/or self-defeating loss control strategies to do so (Hobfoll, 1989, 2001), for instance, social undermining or abusive behaviors (Wheeler, Halbesleben, & Whitman, 2013). Indeed, studies have found that when personal resources are drained, individuals are prone to becoming aggressive toward others (Bowling & Beehr, 2006; Hershcovis & Reich, 2013). In addition, individuals have a limited pool of the cognitive and energy resources that are necessary for self-regulation (Baumeister, Bratslavsky, Muraven, & Tice, 1998). When leaders' resources are drained, their ability to regulate appropriate affective reactions and behaviors is weakened (Wang et al., 2010). The depletion of self-regulation impairs individuals' ability to demonstrate appropriate social interaction (von Hippel & Gonsalkorale, 2005) and has been shown to predict aggression (DeWall, Baumeister, Stillman, & Gailliot, 2007; Yang, Bauer, Johnson, Groer, & Salomon, 2014). Thus, distressed leaders are unable to control their behaviors and emotions and will be prone to demonstrate abusive supervision.

Therefore, we predict the following:

Hypothesis 1: Leaders' psychological distress is positively related to abusive supervision perceived by subordinates.

Abusive supervision may contribute to subordinates' psychological distress. According to COR theory, abusive supervision can be viewed as a significant external stressor that may generate a number of negative thoughts and feelings (Restubog, Scott, & Zagenczyk, 2011). Leaders' abusive behaviors, such as rudeness, tantrums, and public criticism, can drain subordinates' resources and bring about profound effects on subordinates' well-being (Carlson et al., 2012). In addition, subordinates who are targets of abuse will expend resources to cope with what they are experiencing and further deplete personal resources, cause strains (Thau & Mitchell, 2010). Empirically, research on abusive supervision has consistently found that targets of abusive supervision are more likely to demonstrate greater levels of strains, including general psychological distress (Tepper, 2000; Tepper, Moss, Lockhart, & Carr, 2007), depression (Haggard, Robert, & Rose, 2011), anxiety (Hobman, Restubog, Bordia, & Tang, 2009), and somatic complaints (Rafferty, Restubog, & Jimmieson, 2010).

Thus, we predict the following:

Hypothesis 2: Abusive supervision is positively related to subordinates' psychological distress.

So far, we have predicted that psychologically distressed supervisors may engage in abusive supervision behavior. Such negative interactions may then cause subordinates to experience psychological distress. Thus, we have proposed a mediation model. According to the crossover literature, negative interpersonal interaction is one of the key indirect mechanisms linking one partner's distress to the other's (Westman, 2001). In this study, we propose that psychological distress crossover occurs through abusive supervision. In line with COR theory, when leaders are psychologically distressed, their personal resources tend to be depleted; thus, they lack the ability to maintain appropriate social interactions and instead exhibit abusive supervision behaviors. In turn, abusive supervision may drain subordinates' resources and causes them to experience psychological distress. Therefore, abusive supervision serves as an intermediary process linking leaders and followers' distress. Empirically, Westman and Vinokur's (1998) longitudinal study supported the mediating role of interpersonal undermining in the crossover process of depression between wives and husbands.

Finally, we propose that abusive supervision partially mediates the effects of leaders' distress on followers' distress. We propose partial mediation rather than full mediation because we recognize that other mediational processes may be operating simultaneously. For instance, inadequate social support may also exist simultaneously as another moderators (Ten Brummelhuis et al., 2014).

Thus, we predict the following:

Hypothesis 3: Abusive supervision partially mediates the relationship between leaders' psychological distress and subordinates' psychological distress.

Moderating Effects of Team Performance

Crossover is particularly sensitive to circumstances. Crossover researchers investigate the conditions under which crossover is most likely to occur. However, most previous studies have emphasized the boundary conditions of the direct empathetic mechanism. These findings are important, but they are not sufficient to understand the boundary conditions of indirect mechanisms in the crossover process (Westman, 2001). Therefore, in the next section, we will investigate the boundary conditions of the indirect crossover process via abusive supervision.

According to COR theory, psychologically distressed leaders experience resource depletion, and tend to exhibit abusive supervision behaviors. In turn, abusive supervision may drain subordinates' resource and cause them to be psychologically distressed. This impact depends on the status quo of resources individuals possess. Individuals with fewer resources are more vulnerable to resource loss (Hobfoll, 2001). The value of resources depends on individuals' personal experiences and situations. Resources are anything perceived by an individual that could help achieve his or her goals (Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014). For leaders, high team performance is the core element of leaders' goal, and thus it is one kind of resources with high values. For subordinates, psychological capital will facilitate progress toward meeting their goals and has been shown to be a key type of resource that helps individual to successfully cope with stressors (Luthans, Avolio, Avey, & Norman, 2007). Therefore, we choose team performance and psychological capital and examine their moderating effects in the distress crossover.

We propose that low team performance will accentuate the positive relationship between leaders' psychological distress and abusive supervision. For a team leader, leading a team to achieve

its goals is the main task requirement. Therefore, team performance is the key performance index for the leadership position. The performance situation is closely related to leaders' perceptions of resource possession. Hobfoll (2001) proposed that there exist 74 different resources, among which categories like "feeling that I am successful" and "feeling that I am accomplishing my goals" are typically related to a leader's work performance (i.e., the performance of the team under their supervision) (Lapierre, Naidoo, & Bonaccio, 2012). Lower performers interfere with supervisors' goal accomplishment, require time to address their mistakes, and make their supervisors look bad. When leaders are psychologically depressed, their resources are depleted. According to COR theory, when resources are depleted or close to depletion, leaders strive to regain them (Hobfoll, 2001), instead of allowing further resource loss and triggering a "loss spiral" which worsens their well-being (Halbesleben et al., 2014). To avoid loss spirals, leaders should take care of their remaining resources and avoid potential future resource losses (Siegall & McDonald, 2004). Low team performance not only causes actual resource losses but also threatens future resource losses. Thus, it will threaten leaders' resource pool more accounting for their stronger tendency to demonstrate abusive behaviors. Similarly, in the context of a team, supervisors will tend to perceive a team with low performance to be frustrating, aggravating, and annoying and experience more negative affect (Tepper, Moss, & Duffy, 2011). With threats of resource loss and negative affect, distressed leaders will be more prone to exhibiting abusive supervision. Thus, low team performance exacerbates the effect of leader's psychological distress on abusive supervision.

On the contrary, when teams demonstrate high performance, they facilitate leaders' goal achievement and make their leaders look good. When leaders accomplish their goals, feel successful, and have positive feeling about themselves, they replenish their resources. In addition, because leaders appreciate subordinates' (team members') work efforts, they may become motivated to maintain good relationships with the members of their teams. Indeed, Harris, Harvey, and Kacmar's (2011) empirical study found that leader—member exchange alleviates supervisors' tendency to demonstrate abusive supervision in response to their own stress resulting from relational conflict with coworkers. Thus, good team performance may alleviate the threat of resource loss and instead helps leaders to gain resources from successful work; it thus mitigates the effect of leader's psychological distress on abusive supervision.

Thus, we predict the following:

> *Hypothesis 4:* Team performance moderates the positive relationship between leaders' psychological distress and abusive supervision such that the relationship is stronger when team performance is low.

Moderating Effects of Subordinate Psychological Capital

Personal attributes can influence the crossover process as moderators (Westman, 2001). According to COR theory, abusive supervision as a form of negative interpersonal interaction is a significant source of stress for employees, causes resource depletion, and has profound implications for their health and well-being (Restubog et al., 2011). Research indicates that subordinate characteristics may moderate the relationship between abusive supervision and outcomes (Rafferty et al., 2010).

In line with COR theory, we focus here on psychological capital because it is an important type of personal resource (Hobfoll, 2001). In addition, a recent meta-analysis found that psychological capital is positively and significantly related to psychological well-being and negatively and significantly related to job stress and anxiety (Avey, Reichard, Luthans, & Mhatre, 2011). Thus, we select psychological capital as a potential moderator of the relationship between abusive supervision and subordinates' psychological distress.

Psychological capital refers to an individual's positive psychological state of development (Luthans et al., 2007). Psychological capital is a multidimensional construct. It consists of several positive psychological resources. Self-efficacy refers to having the confidence to take on and put in the necessary effort to succeed at challenging tasks. Optimism refers to having a positive expectation of success now and in the future. Hope is indicated by persevering toward goals. Resilience refers to sustaining and bouncing back to achieve success when hindered by problems and adversity (Luthans et al., 2007). Psychological capital has been viewed as personal resources that help individuals achieve success in a wide range of work outcomes, including superior performance, positive work-related attitudes, and decreased turnover (Peterson, Luthans, Avolio, Walumbwa, & Zhang, 2011). In particular, empirical studies as well as meta-analysis findings indicate that psychological capital is negatively related to perceived job stress (Avey, Luthans, & Jensen, 2009; Avey et al., 2011).

Psychological capital can provide an effective buffer against high levels of stress. COR theory suggests that people strive to retain, protect, and build resources and regain them after experiencing losses (Hobfoll, 1989; Hobfoll, 2001). According to the COR theory, people obtain resources to cope with stressful circumstances and exert control over the environment in order to obtain new resources that fulfill their valued needs. As a workplace stressor, abusive supervision has been linked with psychological distress because of an imbalance between the psychological demands of abusive supervision and the resources available to meet such demands. Psychological capital is an important personal resource to help individuals effectively cope with supervisory hostility, which could then attenuate the effects of abusive supervision on psychological distress. Individuals with lower levels of psychological capital lack personal resources and are less likely to cope with abusive supervision successfully. In these cases, psychological distress will be exacerbated. By contrast, those with higher levels of psychological capital are expected to be able to better cope with stressful experiences like abusive supervision, thus less likely to suffer distress from such experiences. For example, Roberts, Scherer, and Bowyer's (2011) study demonstrated that individuals with higher levels of psychological capital more easily adapt to stressful situations and respond with a positive, rather than a negative, psychological state. Therefore, we propose that psychological capital can provide subordinates with the resources and capacity to cope with abusive supervision and thus mitigates the positive effect of abusive supervision on psychological distress.

Thus, we predict the following:

Hypothesis 5: Subordinates' psychological capital moderates the positive relationship between abusive supervision and subordinates' psychological distress such that the relationship is stronger when psychological capital is low.

In sum, drawing on COR theory and the crossover model, this study hypothesizes and tests an integrative model that links supervisor and subordinates' psychological distress and abusive supervision. Specifically, abusive supervision is expected to mediate the crossover of psychological distress from a leader to subordinates. In addition, the model predicts that team performance and subordinates' psychological capital are boundary conditions of the mediation effect (see Figure 1).

Method

Participants and Procedures

In terms of sampling, we recruited the managers from a master's in business admistration (MBA) program enrolling full-time employed students in a large university of China. They are team leaders came from different organizations, including information technology, construction, financial services, advertising, consulting, retail, and transportation. At the time of study, they all lead a team which has the fundamental characteristics of work teams: team members' tasks are closely related, they rely on each other and must coordinate to achieve goals, team membership is stable over time, and the team boundary is clear (Cohen & Bailey, 1997; Hackman, 2002).

To increase the response rate we promised that they would get extra course credit points to complete our survey and also we ensured they have the right to quit this project at any time. We informed them about the research purposes and guaranteed that their responses would be kept confidential. In total, 110 of all 119 managers participated in our online supervisor survey that included questions about their team performance and their own psychological distress. Among them 84.5% were from for-profit companies; 6.4%, from governmental institutes; and the remaining 9.1%, from nonprofit organizations.

We then asked the team leaders to forward the employee survey link to their direct subordinates. Four hundred eighty team members were invited and 447 of them participated in the online survey after receiving information on informed consent. The respondents completed survey questions about their direct manager's abusive supervision, their own psychological distress, and their psychological capital. After matching the responses of leaders to those of their subordinates, we obtained a valid sample of 86 team leaders and 351 subordinates from 86 teams. On average, besides team leader, there are 4.08 team members in a team. The final response rate was 72.95%. We compensated each participant with 70 yuan (approximately $10 U.S.) for completing the survey. Among the subordinate sample, the average age was 29.03 and 47.0% were female.

One of the authors translated the survey items from English into Chinese. A bilingual expert who was blind to the research questions and hypotheses translated the Chinese items back into English using conventional back-translation procedures (Brislin, Lonner, & Thorndike, 1973). Next, we conducted a pilot test with a sample of 31 working adults to ensure that the questions were clear and understandable. This process led to very minor adjustments to a few items.

Measures

Abusive supervision. We used five items from the original 15-item abusive supervision measure (Tepper, 2000) for practical consideration. It has been used in previous study and was reliable and performed similarly to the overall instrument (Peng, Schaubroeck, & Li, 2014). It included both active- and passive-aggressive abusive supervision items (Mitchell & Ambrose, 2007) to cover these two aspects of abusive supervision. Sample items are "My leader doesn't give me credit for jobs requiring much effort" and "My leader tells me my thoughts and feelings are stupid." Participants rated their team leader on this scale from 1 (*never*) to 5 (*almost always*). The alpha reliability coefficient for this scale was .92. Leader's abusive supervision is a team-level variable. As it implies a direct consensus aggregation model, interrater agreement was calculated to determine whether aggregating the followers' ratings was justified. The average R_{wg} was 0.86 across all teams, which indicated good interrater agreement (LeBreton & Senter, 2008). Additionally, the intraclass correlation (ICC)(1) = .31, ICC(2) = .58, which justified aggregating the multiple team members' ratings of their direct supervisors by computing their mean to denote the team's abusive supervision.

Psychological distress. We used the Brief Symptom Inventory—18 (Derogatis, 2001) to measure individuals' psychological distress. This 18-item scale consisted of three subscales, including depression, anxiety, and somatization. Sample items for depression included "feeling blue," "feeling worthless," and "feeling no interest in things" (6 items, α = *.92).* Sample items for anxiety

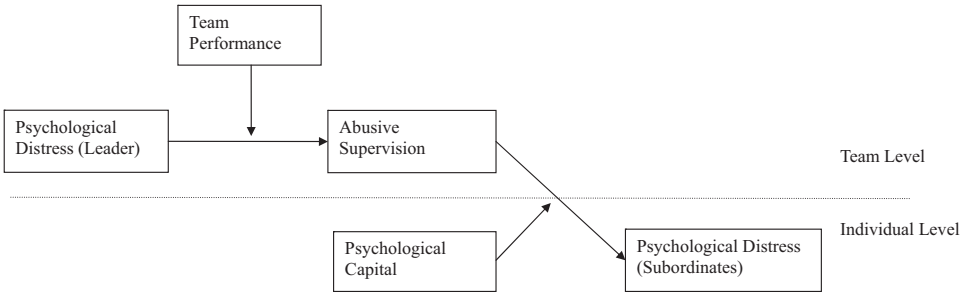

Figure 1. Proposed theoretical model.

included "feeling tense," "nervousness," and "spells of panic" (6 items, $\alpha = .93$). Sample items for somatization included "nausea," "faintness," and "pains in chest" (6 items, $\alpha = .91$). Participants were asked to rate their feelings during the past few weeks on a scale ranging from 0 (*not at all*) to 4 (*very much*). The means were computed to index each health symptom. Because these three types of symptoms were very highly correlated (correlations between .83 and .90), we computed a grand mean for the three symptoms to indicate one's general level of psychological distress. The measure of psychological distress had a composite reliability of .95 in the subordinate sample and .93 in the supervisor sample.

Psychological capital. We used 12 items from the instrument described by Peterson, Walumbwa, Byron, and Myrowitz (2009) to measure psychological capital. It has three 4-item subscales including optimism, hope and resiliency. Sample items are "I always look on the bright side of things," "I can think of many ways to get the things in life that are important to me," and "I get over my frustration reasonably quickly." Past research has found that positive psychological capital (hereinafter, psychological capital) was related to psychological distress (e.g., Schaubroeck, Riolli, Peng, & Spain, 2011). Participants rated themselves on this scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The alpha reliability was .74 (optimism), .75 (hope), and .80 (resiliency) respectively for subscales, and was .85 for the overall scale.

Team performance. Supervisors used five items from Ancona and Caldwell (1992) to evaluate their teams' performance. Sample items are "The team faces new problems effectively" and "The team changes behavior effectively to meet the demands of the situation." The supervisors rated their teams' performance on this scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The alpha reliability for this scale was .89.

Control variables. A number of variables were selected as control variables based on their potential theoretical and empirical relations with our focal variables. Age of both leaders and subordinates was controlled, because previous research found that negative affect decreases with age (e.g., Charles, Reynolds, & Gatz, 2001) and younger employees are more likely to engage aggressive behaviors (e.g., Baron, Neuman, & Geddes, 1999). Leaders' gender was controlled in pertinent models because females are less likely to display aggressive behaviors (e.g., Baron et al., 1999) and male supervisors have been show to be more likely to engage in abusive supervision (e.g., Tepper, Duffy, Henle, & Lambert, 2006). Subordinates' gender was controlled because past studies found that female experienced higher level of psychological distress (e.g., Almeida & Kessler, 1998; Simon, 1992). Team size was controlled because differences in team size may influence the amount of team coordination and resources that require leaders to expend (e.g., Kirkman & Rosen, 1999).

Results

Preliminary Analyses

Before testing our hypotheses, we conducted two sets of confirmatory factor analyses (CFAs) to assess the discriminate validity of all variables. One set was performed for supervisor data; the other, for subordinate data. Because the sample was relatively small, we used a parceling procedure. The three dimensions (depression, anxiety, and somatization) were used as the observed indicators for psychological distress. Similarly, the four dimensions of psychological capital (efficacy, optimism, hope, and resilience) were employed as indicators. The CFA results demonstrate that psychological distress and team performance are distinguishable constructs in the supervisor data—one factor: $\chi^2(230) = 776.38$, root-mean-square error of approximation (RMSEA) = .25, standardized root-mean-square residual (SRMR) = .13, comparative fit index (CFI) = .81, normed fit index (NFI) = .74; two factor: $\chi^2(229) = 468.44$, RMSEA = .09, SRMR = .08, CFI = .90, NFI = .83—abusive supervision, psychological capital, and psychological distress are distinguishable constructs in the subordinate data—one factor: $\chi^2(665) = 10250.43$, RMSEA = .20, SRMR = .15, CFI = .88, NFI = .86; three factor: $\chi^2(662) = 2200.22$, RMSEA = .07, SRMR = .05, CFI = .97, NFI = .95.

To justify that the multilevel analyses were appropriate to analyze the two-level data of this study, we first conducted an analysis of variance to test between-groups variation in team members' psychological distress. The result shows that there is a significant difference between groups regarding subordinates' psychological distress, $F(88, 274) = 2.40$, $p < .001$. In addition, we estimated a null model with no predictors and subordinates' psychological distress as the dependent variable (Raudenbush, Bryk, Cheong, & Congdon, 2004). We found significant between-groups variance in team members' psychological distress, $\chi^2(88) = 210.69$, $p < .001$). The result shows that ICC(1) = .26, indicating that 26% of the variance resides between groups. This variance implied the nested nature of the data and justified the use of multilevel analyses.

Descriptive Statistics

Table 1 shows the means and standard deviations of and correlations among the study variables. Internal consistency reliabilities at the individual level, when available, are reported along the diagonal. As shown in Table 1, leader psychological distress is positively related to abusive supervision ($r = .43$, $p < .01$) and subordinate psychological distress ($r = .34$, $p < .01$). Abusive supervision is positively related to subordinate psychological distress ($r = .49$, $p < .01$).

Tests of Hypotheses

To test the multilevel mediation hypotheses, we followed the procedure recommended by Preacher, Zyphur, and Zhang (2010). For the analysis presented here, we used Mplus7 software to estimate the multilevel mediation model (Muthén & Muthén, 2013). Specifically, we used multilevel path analysis instead of multilevel structural equation modeling (MSEM) to test the proposed model, due to considerations of limited statistical power related to using MSEM among our sample (e.g., Aguinis, Gottfredson, & Culpepper, 2013; Hox & Maas, 2001). Hypothesis 1 suggests that a leader's psychological distress is positively related to the abusive supervision perceived by subordinates. As shown in Table 2, Model 1, after controlling for leader age, leader gender, subordinates' mean age, subordinates' mean gender, and team size, leader psychological distress is positively related to abusive supervision ($b = .37$, $p < .05$). Therefore, Hypothesis 1 is supported.

Hypothesis 2 suggests that abusive supervision is positively related to subordinates' psychological distress. As shown in Table

Table 1
Means, Standard Deviations, and Correlations Among Study Variables

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
1. Subordinate age	29.03	5.96										
2. Subordinate gender	0.47	0.50	.06									
3. Psychological capital	3.77	0.47	−.01	.14**	(.85)							
4. Subordinate PD	0.52	0.60	−.01	.01	−.30**	(.95)						
5. Leader age	34.22	6.10	.22**	−.08	.06	−.07						
6. Leader gender	0.62	0.49	.05	.36**	.01	−.12*	−.04					
7. Team size	4.08	0.44	−.05	−.04	−.03	.01	−.05	.04				
8. Leader PD	0.58	0.46	−.07	−.11*	−.10	.34**	−.06	−.30**	−.07	(.93)		
9. Team performance	3.98	0.46	−.03	.11*	.22**	−.12*	−.06	.04	−.02	−.10	(.89)	
10. Abusive supervision	1.31	0.38	−.03	−.05	−.17**	.49**	−.04	−.13*	.06	.43**	−.30**	(.92)

Note. $N = 351$ at the individual level, and $N = 86$ at the team level. Data for Variables 1–4 and 10 were reported by individual team members; Variables 5–9 were evaluated by team leaders. For gender, 0 = female, 1 = male. Scores of the team-level variables are disaggregated to the individual level to calculate correlations. Reliability estimates are reported in parentheses along the main diagonal. PD = psychological distress.
* $p < .05$. ** $p < .01$ (two-tailed tests).

2, Model 2, after controlling for subordinate age, subordinate gender, dyadic tenure, subordinates' mean age, subordinates' mean gender, team size, leader age, and leader gender, abusive supervision is positively related to subordinate psychological distress ($b = .68$, $p < .01$). Therefore, Hypothesis 2 is supported.

Hypothesis 3 indicates that abusive supervision partially mediates the relationship between leaders' psychological distress and subordinates' psychological distress. A formal test of the indirect effect revealed a statistically significant indirect effect of leader distress on subordinate distress via abusive supervision ($a \times b = .25$, $SE = .13$, $p < .05$). The 95% confidence interval is [.01, .46], which excludes zero. Therefore, the indirect effect is positive and significant. In addition, the results showed that there was a remaining significant direct effect of leader's psychological distress on followers' psychological distress ($c' = .18$, $p < .01$). Thus, the findings support Hypothesis 3.

Hypothesis 4 indicates that team performance moderates the positive relationship between leaders' psychological distress and abusive supervision. We conducted a moderated hierarchical regression analysis with abusive supervision as the dependent variable. Model 1 includes only control variables, Model 2 includes leader distress and team performance, and Model 3 includes the hypothesized interaction (Baron & Kenny, 1986). To minimize potential multicollinearity effects, the interaction variables were standardized and then multiplied to form the interaction term (Aiken & West, 1991).

As shown in Table 3, Model 3, the interaction between leader psychological distress and team performance is significant ($\beta = -.34$, $p < .01$, $\Delta R^2 = .09$). Figure 2 depicts the interaction with simple slopes. For low-performance teams (1 *SD* below the mean of team performance), the relationship between leader psychological distress and abusive supervision is positive and significant ($b = .26$, $p < .01$). For high-performance teams (1 *SD* above the mean), the relationship between leader psychological distress and abusive supervision is not different from zero ($b = .06$, $p > .05$). Therefore, the relationship between leader psychological distress and abusive supervision is more positive and stronger when team performance is low. This finding supports Hypothesis 4.

Table 2
Multilevel Results of the Relationship Between Leader Psychological Distress and Subordinate Psychological Distress Through Abusive Supervision

	Abusive supervision (Model 1)		Subordinate psychological distress (Model 2)	
Variable	*B*	*SE*	*B*	*SE*
Level 1 variables				
Subordinate age			.00	.01
Subordinate gender			.05	.05
Level 2 variables				
Leader age	.01	.01	−.01	.01
Leader gender	.02	.11	−.05	.07
Team size	.08	.09	−.01	.05
Leader psychological distress	.37*	.17	.18**	.07
Abusive supervision			.68**	.08
−2 log likelihood	—		589.79	

Note. $N = 351$ at the individual level, and $N = 86$ at the team level. Unstandardized coefficients are reported.
* $p < .05$. ** $p < .01$ (two-tailed tests).

Table 3
Moderation Effect of Team Performance on the Relationship Between Leader Psychological Distress and Abusive Supervision

	Abusive supervision		
Variable	Model 1	Model 2	Model 3
Control variable			
Leader age	.06	.08	.03
Leader gender	−.11	.03	−.06
Team size	.06	.08	.04
Main effects			
Leader psychological distress (LPD)		.42**	.43**
Team performance (TP)		−.27**	−.20*
Interaction			
LPD × TP			−.34**
R^2	.02	.27**	.36**
ΔR^2		.25**	.09**

Note. $N = 86$ at the team level. Standardized coefficients are reported.
* $p < .05$. ** $p < .01$ (two-tailed tests).

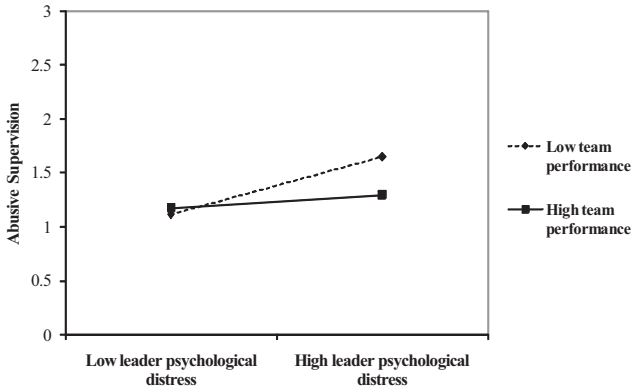

Figure 2. The moderation effect of team performance on the relationship between leader psychological distress and abusive supervision.

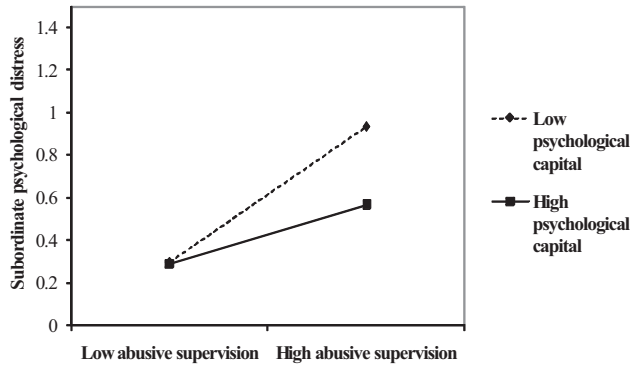

Figure 3. The moderation effect of psychological capital on the relationship between abusive supervision and subordinate psychological distress.

Hypothesis 5 indicates that subordinates' psychological capital moderates the positive relationship between abusive supervision and subordinates' psychological distress. Here, we used a procedure similar to the one that was used to Test Hypothesis 4. Following the recommendations by Hofmann and Gavin (1998), we group-mean centered subordinate psychological capital and grand-mean centered abusive supervision before entering them into the analysis. We also added the group means of psychological capital (at the team level) to properly control for the main effect of psychological capital at the individual level (Hoffman & Gavin, 1998).

As shown in Table 4, Model 3, the interaction between abusive supervision and subordinate psychological capital is significant ($b = -.66$, $p < .01$). The interaction term explains 19% of the slope variance between abusive supervision and subordinates' psychological distress. Figure 3 depicts the interaction with simple slopes. For subordinates low in psychological capital (1 *SD* below the mean of psychological capital), the relationship between abusive supervision and subordinate psychological distress is positive and significant ($b = .84$, $p < .01$). For subordinates high in psychological capital (1 *SD* above the mean), the relationship between abusive supervision and subordinate psychological distress is positive and significant but smaller in magnitude ($b = .36$, $p < .05$). Therefore, the relationship between abusive supervision and subordinate psychological distress is more positive and stronger when subordinate psychological capital is low. This finding supports Hypothesis 5.

Table 4
Moderation Effect of Psychological Capital on the Relationship Between Abusive Supervision and Subordinate Psychological Distress

Variable	Subordinate psychological distress		
	Model 1	Model 2	Model 3
Level 1 variable			
Subordinate age	.00	.00	.00
Subordinates gender	.05	.08	.08
Psychological capital (PsyCap)		−.26**	−.26**
Level 2 variable			
Team size	.00	−.01	−.01
Leader psychological distress (LPD)	.43**	.21**	.21**
Team performance (TP)	.03	.09	.10
LPD × TP	−.09**	−.02	−.03
PsyCap (team average)	−.48**	−.35**	−.36**
Abusive supervision (AS)		.61**	.60**
Cross−level interaction			
AS × PsyCap			−.67*
R^2 Level 1	.00	.18	.18
R^2 Level 2	.63	.88	.88
R^2 AS × PsyCap			.19
−2 log likelihood	595.42	541.89	538.89

Note. $N = 351$ at the individual level, and $N = 86$ at the team level. Unstandardized coefficients are reported.
* $p < .05$. ** $p < .01$ (two-tailed tests).

Discussion

Crossover is a critical process used to explain interpersonal influence between closely related individuals in the same social setting (Westman, 2001). However, questions remain about the mechanisms of the crossover process. This study extends theory and research on crossover by investigating mediating effects of abusive supervision and multiple boundary conditions (team performance and psychological capital) of the distress crossover process in work teams from a multilevel perspective. We found that a team leader's psychological distress positively contributes to team members' psychological distress. Abusive supervision partially mediates such crossover. Additionally, team performance moderates the positive relationship between a leader's psychological distress and abusive supervision, where the relationship is significant when team performance is lower and not significant when team performance is higher. Moreover, subordinates' psychological capital moderates the positive relationship between abusive supervision and subordinates' psychological distress where the relationship is stronger when psychological capital is lower.

This study contributes to the crossover literature in clarifying an underlying mechanism of crossover. Westman (2001) suggested that there are three elements in the crossover process: a direct effect, a spurious effect, and an indirect effect, among which the indirect mechanism has been proposed to be most essential for theoretical development in crossover domain, yet received little attention. Drawing on COR theory, this study focuses on the indirect mechanism and investigates the mediating role of social

interaction in the crossover process. Specifically, this study found that abusive supervision, a typical form of negative and destructive interaction between leaders and team members, partially mediates the association between a leader's psychological distress and subordinates' psychological distress. It supports the indirect effect mechanism. By employing COR theory in crossover research, we add a new theoretical perspective that could further understandings of mechanisms underlying the indirect crossover process.

Second, besides explaining how indirect crossover emerges, this study investigates boundary conditions (team performance and psychological capital) and thus clarifies when such indirect crossover process may occur. Drawing upon COR theory, we carefully selected two moderators, team performance and psychological capital, because they are closely related to resources for leader and subordinates, respectively. Integrating crossover and abusive supervision research, this study suggests that distressed leaders are more likely to be abusive toward subordinates when they perceive team performance to be low. It supports the notion that although distressed leaders are prone to hostility, not all of them will abuse their subordinates (Tepper et al., 2006). In addition, the present study found that subordinates with low psychological capital are more likely to be distressed under abusive supervision because psychological capital is an important personal resource that helps individuals cope with supervisor abuse. Thus, based on COR theory, we examined two moderators. By examining the indirect effects, we provide evidence to delineate the crossover process from leaders to their team members in the workplace.

Third, this study investigates leader-subordinates crossover in teams from a multilevel perspective and thus extends the scope of the crossover literature. Bakker et al. (2009) stated that crossover processes within work teams in real work settings required further research. Specifically, Westman (2001) suggested that further studies should investigate the impact of leaders' distress on their subordinates' distress in teams. This study answered such calls by examining the crossover effect between leaders and subordinates and extends our understanding of how a leader's psychological distress can cross over to their entire work team. Specifically, distressed leaders experience resource depletion and are more likely to engage in abusive supervision behaviors toward the team. In turn, Abusive supervision drains subordinates' resource and further accounts for the psychologically distress symptoms.

Moreover, this study advances abusive supervision research. Because most abusive supervision research examined outcomes, Tepper (2007) called for an increased focus on the characteristics that cause some supervisors to exhibit abusive behaviors. Answering this call, this study suggests that leaders' psychological distress is an important precursor of abusive behavior. It confirms Hoobler and Hu's (2013) findings that leaders with negative affect will be involved in abusive behavior. It is also in line with Burton, Hoobler, and Scheuer's (2012) study, which suggests that supervisor-perceived stress is related to abusive supervision. In addition, this study indicates that leaders may be more abusive when they perceive low team performance. More important, we extend previous findings that not all distressed team leaders will abuse their subordinates. The results of our study add to the limited literature on antecedents of abusive supervision.

Practical Implications

The findings, if they can be replicated, have potentially important practical implications. Psychological distress affects not only work performance but also general life satisfaction and well-being. Our model provides insights into some specific organizational factors that are responsible for psychological distress. Psychological distress can cross over from leaders to followers, and thus may create a distressed team climate and impede the achievement of team goals. Teams are expected to benefit if leaders could exhibit a more positive and less negative psychological states within their teams in order to promote positive crossover and lessen negative crossover.

The findings also highlight the notion that even leaders themselves may experience poor psychological health. Because leaders often focus on encouraging and mentoring subordinates and appearing strong and competent, they may not be well aware of their own well-being concerns. It is important for leaders to be mindful of their own well-being and to maintain personal resources (Byrne et al., 2014). Organizations also need to support leaders' psychological health through providing resources such as employee assistance programs, to help leaders cope with stress and replenish personal resources.

In addition, because abusive supervision is stressful and destructive, leaders should be aware of its negative effects and improve their management skills to demonstrate appropriate team leadership (Hoobler & Hu, 2013). Leaders should also recognize that low-performing teams are more likely to be victims of abusive behaviors. To avoid these circumstances, organizations can provide leadership training to help supervisors become more aware of such biases and overcome the tendency to abuse low-performing teams (Tepper et al., 2011).

Although the crossover of distress is unavoidable in many contexts, our results show that psychological capital can buffer the negative impact of distress crossover on employees with work teams. Psychological capital is state-like and can be malleable (Luthans et al., 2007). There is already some evidence showing that psychological capital can be improved with training intervention (Luthans, Avey, Avolio, & Peterson, 2010). Thus, organizations can provide and encourage employees to participate in psychological capital development programs to help them build better personal resources.

Limitations and Future Research Directions

This study has several limitations that should be noted. First, although for theoretical reasons we interpret these relationships in terms of causal pathways, the cross-sectional design makes causal inference difficult. This causal inconclusiveness is typical of crossover research (Westman, 2001). Future research could use longitudinal designs to validate the causal relationships in our model. In addition, the use of within-subject designs to study crossover among employees is a promising approach (Bakker et al., 2009). Future studies could investigate daily stress crossover and allow for the examination of the temporal sequence of events.

Second, although data were collected from multiple sources (leaders and their direct subordinates), the current research is not free from the problems associated with common method variance. However, the results of the CFAs show that our measures are empirically distinct from each other (Podsakoff, MacKenzie, &

Podsakoff, 2012). Additionally, we found two significant interaction effects between leader psychological distress and team performance and between abusive supervision and psychological capital. Such interaction effects are difficult to detect when common method variance is high (Siemsen, Roth, & Oliveira, 2010). Thus, we believe that common method variance does not threaten our conclusions.

Third, this study focuses on psychological distress and, thus, only examines negative experience crossover. Recent research has begun to examine positive experience crossover, such as job satisfaction, work engagement, and flow at work. Future studies can draw on the crossover literature and investigate the underlying mechanisms of positive well-being crossover.

Finally, the nature of our sample (MBA-degree-seeking leaders and their team members) may evoke concerns about the generalizability of our findings. However, our sample includes organizations from a range of industries and the vast majority of our sample (i.e., all team members) participated in our study outside of university settings, thus our findings can be somewhat generalizable to a larger population of Chinese employees, and potentially generalizable to employees in other countries. Nevertheless, it is important that future research tests our research model with more representative samples in other cultural settings.

Conclusions

This study's findings strengthen our understanding of the crossover process in work settings. The results indicate that a leader's psychological distress contributes to subordinates' psychological distress through abusive supervision. The findings also identify important boundary conditions for these relationships. Specifically, distressed leaders are more likely to exhibit abusive supervision when team performance is low. In addition, team members with low psychological capital are more vulnerable to and apt to be distressed by abusive supervision. We encourage future studies to investigate the precise mechanisms of the crossover process in the workplace.

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