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Abstract

In today's highly competitive and extremely complex global economy, organizational leaders at all levels are facing unprecedented challenges. Yet, some seem to be handling the pressure better than others. Utilizing 4 samples of CEOs/presidents/top (n = 205), middle (n = 183), and junior (n = 202) managers, as well as 107 entrepreneurs, using Structural Equation Modeling we tested the direct effect that their level of mindfulness (heightened awareness) and the mediating effect of their psych logical capital (i.e., hope, efficacy, resilience, and optimism) may have on their mental well-being. In all 4 samples, mindfulness was found to be negatively related to various dysfunctional outcomes such as anxiety, depression, and negative affect of the managerial leaders and burnout (i.e., emotional exhaustion and cynicism) of the entrepreneurs. For all 4 samples, the model with psychological capital mediating the effects of mindfulness on dysfunctional outcomes fit the data best. The study limitations, future research and practical implications of these findings conclude the article.

Keywords: leaders' well-being, psychological well-being, mindfulness, mindfulness of leaders, psychological capital of leaders

Currently, leaders at all levels of organizations are under ever-increasing pressure because of the competitiveness and complexity of the global economy. On one hand, there is considerable evidence that this turbulent environment has taken its toll on organizational leaders' mental well-being (Andrea, Bultmann, van Amelsvoort, & Kant, 2009; Melchior et al., 2007; Nielsen & Daniels, 2012). On the other hand, very little research has focused specifically on the positive antecedents that may enable better mental health for leaders, as they continue to face these unprecedented challenges (Nielsen & Daniels, 2012). Although considerable research has been devoted to overall employee stress over the years, attention now needs to focus on organizational leaders per se. Psychologically healthy, thriving leaders not only benefit themselves, but are also critical to employee well-being as well. Recent research indicates that when leaders are stressed, they are less able to support their employees, and this in turn directly affects the stress levels of employees (ten Brummelhuis, Haar, & Roche, in press).

Research shows that leaders facing challenging situations results in negative affect, being anxious and depressed, and suggests that by the very nature of their influencing role, this negative reaction impacts employee ill-being (Bakker, Westman, & Van Emmerik, 2009; Johnson, 2008; Sy, Côté, & Saavedra, 2005; ten Brummelhuis et al., in press). What is not understood is the role that positively oriented psychological antecedents may have

in buffering leader's ill-being in the first place. Thus, besides the research to date which mainly focuses on the negative, toxic environments, and outcomes traditionally associated with leadership roles, we propose the time has come to better understand and test the role that leaders' positive psychological resources can play in their well-being.

One such positive psychological resource that has received very little attention in leadership research is the construct of mindfulness (Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007). Specifically, a mindful person is one who has heightened awareness of the present reality and gives focal attention to living the moment. One of the pioneers on this construct, Ellen Langer (1989), likes to depict those who are psychologically healthy and thriving as "mindful" whereas those who are struggling and on a downward spiral in their life course as "mindless." The recent surge of clinical research attests to its beneficial psychological properties, specifically providing evidence of its positive relationship with one's well-being (e.g., Brown & Ryan, 2003; Weinstein, Brown, & Ryan, 2009; Weinstein & Ryan, 2011) and, in particular, stress reduction (e.g., Shapiro, Astin, Bishop, & Cordova, 2005). However, despite the current popularity in the clinical literature, mindfulness has only recently found its way into the management and organizational behavior field (Avey, Wernsing, & Luthans, 2008; Dane, 2011; Glomb, Duffy, Bono, & Yang, 2011; Leroy, Anseel, Dimitrova, & Sels, 2013; Lu-

thans, Youssef, & Avolio, in press). Specifically, mindfulness has been offered as a potential valuable well-being resource for employees (Grossman, Niemann, Schmidt, & Walach, 2004; Leroy et al., 2013; Weinstein & Ryan, 2011), but has not yet been analyzed in relation to organizational leaders' mental well-being.

This study seeks to contribute to the better understanding of the role that mindfulness may play in leader well-being in three ways. First, we test the role of mindfulness on a wide range of leaders in various leadership positions and roles. Our separate samples include senior managers (CEOs and/or presidents), middle managers, and junior managers. These three samples serve to answer the call to do leadership research at all levels of the organization (DeChurch, Hiller, Murase, Doty, & Salas, 2010). Our fourth sample is entrepreneurs, as they share common, yet still different pressures, leadership characteristics and well-being outcomes, in order to extend generalizability of our findings to all types of contemporary organizational leaders (Cogliser & Brigham, 2004; Jensen & Luthans, 2006). Second, across the four separate samples, we analyze a wide range of dysfunctional mental well-being outcomes in leaders. Third, because of the established positive role of psychological capital (PsyCap) on attitudes, behaviors, and performance (for a recent meta-analysis on the research, see Avey, Reichard, Luthans, & Mhatre, 2011 and for an overall review see Dawkins, Martin, Scott, & Sanderson, 2013) and specifically its impact on stress (Avey, Luthans, & Jensen, 2009) and well-being (see Avey, Luthans, Smith, & Palmer, 2010), in this study we examine the potential mediating effects it may have on the relationship between leaders' mindfulness and the dysfunctional well-being outcomes across all samples.

Theoretical Foundation for Mindfulness

Research on mindfulness suggests it is as an inner resource that supports beneficial psychological functioning, and thus facilitates well-being (Brown & Ryan, 2003). In particular, mindfulness has been found to be important in "disengaging individuals from unhealthy thoughts, habits, and unhealthy behavioral patterns" (Brown & Ryan, 2003, p. 823). As such, mindfulness has been found to play a key role in developing informed and self-endorsed behavioral regulation, which has long been associated with well-being (Ryan & Deci, 2008), as well as enhanced leadership efficacy (Hannah, Woolfolk, & Lord, 2009).

As indicated in the opening comments, mindfulness is characterized by an open, receptive, and nonjudgmental orientation to the present (Martin, 1997). Brown and Ryan (2003) purport to measure mindfulness as "the presence of attention to, and awareness of, what is occurring in the present moment" (p. 824). As used in this study, mindfulness refers to an open state of mind where the leader's attention, informed by a sensitive awareness, merely observes what is taking place: worry about the future and negative ruminations or projections are bought back to the present moment where the situation is seen for what it is. Crucial to this meaning of mindfulness is the internal awareness of the leader's perception and attention to the current situation, without reflexive judgment and categorization of the situation (Brown & Ryan, 2003; Brown et al., 2007). As such, this meaning of mindfulness differs from conventional Western conceptions of mindfulness. These latter views of mindfulness are more concerned with cognitive evaluations of events and goal orientated behaviors (for a comprehensive review, see

Weick & Putnam, 2006), or emotional intelligence, that similarly investigates how effectively people categorize, identify, and harness emotions in themselves and others (for a review see Schutte & Malouff, 2011).

As mindfulness is used in the present study, Brown and Ryan (2003) view its awareness as the background "radar" of consciousness, implying the ongoing monitoring of the inner (mind and body) and outer environments. However, a person may be aware of stimuli without any one stimulus being at the center of attention. Attention is a process of focusing conscious, sustained awareness, and hence heightens sensitivity to a limited range of stimuli (Brown & Ryan, 2003). Both attention and awareness are constant features of normal daily functioning, and mindfulness is considered to be the enhanced, receptive attention to, and awareness of, current experience or present reality, without evaluation, judgment or cognitive filters (Brown & Ryan, 2003; Brown et al., 2007).

Relevant to this study, there are two primary mental processes through which mindfulness operates, as well as secondary processes (Glomb et al., 2011). First, mindful individuals decouple themselves from events, thoughts, and emotions. For example when under threat, rather than personalizing events a mindful person simply notices but does not judge or categorize. Second, mindfulness decreases automatic mental processes where past cognitive habits, thinking patterns, and experiences constrain thinking (Glomb et al., 2011) This leads to secondary processes, such as decreased rumination and greater affective regulation (Glomb et al., 2011). Such secondary processes reflect individuals' deliberate choice in response to a situation, rather than simply reflexively reacting to situations.

For leaders who are working in stressful situations (Andrea et al., 2009), this greater mindfulness enables them to view situations "for what they really are" without rumination or worry of past or future negative events. Rather than being mindless and frantic, present moment awareness and attention allows the leader to focus on the issue at hand, not on the problems that may arise, or have previously arisen. This allows leaders to facilitate reflective choices to situations that in total benefit their mental health outcomes and well-being.

As awareness and attention are central to the well-established Eastern version of mindfulness, the Mindfulness Awareness and Attention Scale (MAAS) has been used to measure Eastern mindfulness (Brown & Ryan, 2003). A series of studies using the MAAS have found that individuals with higher mindfulness were more resistant to stress as they coped more effectively with such events. That is, participants scoring highly on the MAAS report less stress, and they also use constructive coping strategies in response to stress, a linkage that has also been repeated in related mindfulness research (Weinstein & Ryan, 2011). Mindfulness has also been found to be positively related to relationship satisfaction, clarity of emotional states, and enhanced mood repair, and negatively associated with rumination, social anxiety, and psychological distress (Chambers, Gullone, & Allen, 2009; Dekeyser, Raes, Leijssen, Leysen, & Dewulf, 2008). For example, in a recent study Schutte and Malouff (2011) found higher levels of mindfulness were associated with greater emotional intelligence, higher levels of positive affect, lower levels of negative affect, and greater life satisfaction.

Despite the growing evidence of the value of mindfulness, it has been tested predominately in clinical or student settings

and remains nascent in workplace settings and is less understood with regard to leaders' well-being. Dane (2011); Glomb et al. (2011), and Weinstein and Ryan (2011) provide recent reviews of mindfulness and allude to the potential value of examining mindfulness and its contributions to work-related outcomes, such as resiliency and stress reduction. While research in the workplace is sparse, Allen and Kiburz (2011) have tested MAAS on 131 working parents and found mindfulness was positively related to work-family balance. Dane and Brummel (2013); Hülsheger et al. (2013) and Leroy et al. (2013) also tested MAAS in relation to employee work engagement, turnover, job satisfaction and emotional exhaustion. Hence, the beneficial effects of mindfulness do appear to apply to employees and workplace issues. However, mindfulness has not yet been explored as an antecedent for leaders' mental well-being as measured by a wide variety of dysfunctional outcomes resulting from the pressure-packed environment that today's organizational leaders face. As indicated, in this study we specifically test the role that mindfulness may play in combating dysfunctional mental outcomes for organizational leaders at all levels.

Dysfunctional Outcomes and Derivation of Study Hypotheses

The dynamic, unpredictable work environments that leaders face are widely associated with greater pressure and stress (Brehmer, 1992). Using this understanding as a point of departure, we specifically investigate managers' level of anxiety, depression, and negative affect. Anxiety and depression particularly share a strong commonality and shared risk factors, including stress. In addition, Spector, Zapf, Chen, and Frese (2000) in their job stress research found evidence supporting the direct and discriminant role of negative affect in stress outcomes. Other research finds negative affect to be particularly associated with stress and with leadership influence and effectiveness (Sy et al., 2005). Besides investigating the anxiety, depression, and negative affect of our manager samples, we also examined job burnout of our entrepreneur sample because of its particularly relevant dysfunctions of emotional exhaustion and cynicism. Although these outcomes are not the only dysfunctional outcomes managerial and entrepreneurial leaders may experience, we focus on these for the present study because prior research has deemed these to be representative of the problems resulting from the pressures managers and entrepreneurs are currently facing. After summarizing the background of each, we formulate hypotheses of the relationship between leaders' mindfulness and these dysfunctional outcomes.

Anxiety and Depression

Leaders' exposed to stressful work conditions could be at increased risk of both depression and/or anxiety, and in this study we examine both of these related yet separate dimensions of mental well-being (Melchior et al., 2007). Anxiety can have acute psychological repercussions, which may include hypersensitivity and chronic worrying (Kennerley, 1995), as well as a decreased capacity for concentration, memory, perception, appetite, and sleep (Baruch & Lambert, 2007). This diverse range of behaviors, which are impacted by a person's anxiety, can lead to physiological and/or psychological disruption in the workplace. Lazarus and Folkman's (1984) classic model of anxiety indicates that anxiety is influenced by the interaction between the evaluation of external and internal processes.

Low and manageable levels of anxiety are a normal response to perceived stressors. Thus, Baruch and Lambert (2007) suggest that cognitive recognition of such anxiety could trigger coping mechanisms. We propose one such mechanism may be mindfulness. We suggest today's leaders are facing numerous pressures that result in anxiety and may be able to cope by having a positive mindset.

Depression is one of the most common and widely experienced mental illnesses. It is estimated that 50% of all adults are affected at least to some degree during their lifetimes (Ramsey, 1995). Gray (2008) defined depression as a general state of malaise, pessimism, and/or despondence. Depression is characterized by a number of behaviors, including persistent and prolonged melancholy, sleep disturbances, fatigue, limited ability to think or concentrate, loss of pleasure in something usually enjoyed, and feelings of worthlessness (Braus, 1991; Shoor, 1994). In the workplace, depressive symptoms may manifest as a lack of enthusiasm, frequent complaining, reduced productivity, aggressive behavior, decreased career interest, and absenteeism (Gray, 2008). Depression may also influence an employee's relationships with coworkers. This is particularly true when a person's job requires collaboration with others, as these working relationships may become strained, causing irritation (Johnson & Indvik, 1997). We suggest this dysfunctional impact depression on relationships is especially critical for leaders, who need to collaborate and interact with multiple employees.

Job pressure, conflicting and ambiguous demands, role overload, lack of job autonomy, job insecurity, hurried deadlines, and harassment have all been noted as factors contributing to depression (Ramsey, 1995; Johnson & Indvik, 1997). Thus, if leaders are depressed, this clearly limits their ability to effectively manage themselves, their workloads, and their employees. Comparing with anxiety, Warr (1996) defined anxiety as being in a state of low pleasure but high mental arousal, but depression is a state of low pleasure and low arousal. We propose, supported by findings from nonworkplace settings, that mindfulness enables leaders to gain present moment awareness and attention, resulting in lower levels of anxiety and depression. Thus, the following study hypotheses are formulated:

> *Hypothesis 1:* Leaders' mindfulness will be negatively related to their level of anxiety.

> *Hypothesis 2:* Leaders' mindfulness will be negatively related to their level of depression.

Negative Affect

Negative affect (NA) refers to negative moods and tendencies to experience negative feelings such as distress, nervousness and hostility. By contrast, positive affect (PA) is associated with feelings of calmness, serenity, and happiness (Elfenbein, 2007; Watson & Tellegen, 1985). Over the years, studies have found that NA is associated with increased absences, turnover intentions, and actual turnover (George & Jones, 1996; Pelled & Xin, 1999; Thoresen, Kaplan, & Barsky, 2003). Staw and Cohen-Charash (2005) also found that NA was negatively related to decision-making effectiveness, interpersonal performance, and positive ratings of managerial potential.

There is some evidence that NA may be state-like and malleable (as opposed to fixed, trait-like). For example, Scott, Colquitt, Paddock, and Judge (2010) found negative affect fluctuates at work depending on workplace circumstances such as goal pursuit and leadership support. Moreover, because leaders' negative affect affects employee negative affect (Sy et al., 2005), state-like negative affectivity takes on increased importance in leadership research. Related studies have examined the processes and interactions involved in the role of leaders' emotions and the management of their teams' emotional responses (e.g., Huy, 2002). Also, Pescosolido (2002, p. 584) has examined how leaders can "set the emotional tone" of a group, and, as mentioned above, Sy et al. (2005) found leaders' negative moods influence employee moods and well-being. In other words, negative affect is associated with leadership ability, well-being, and leadership influence and leads to the following hypothesis:

Hypothesis 3: Leaders' mindfulness will be negatively related to their level of negative affect.

Emotional Exhaustion and Cynicism

Whereas anxiety, depression, and negative affectivity are widely recognized relevant outcomes to impact organizational leaders' well-being, the popular literature is especially replete with warning and steps to be taken to prevent the burnout of entrepreneurs. However, virtually no research to date has investigated the burnout of entrepreneurs (see Cogliser & Brigham, 2004). So in this final sample of entrepreneurial leaders we test the relationship between the mindfulness of entrepreneurs and their burnout characterized by emotional exhaustion and cynicism.

Wright and Cropanzano (1998) state that emotional exhaustion is characterized by a chronic state of both emotional and physical depletion. Such exhaustion results from excessive job demands and continuous, long-term stressors. Maslach (1978, 1982) suggests that it is in turn an early detector of burnout. Emotional exhaustion is an important outcome because of its links with lower job satisfaction and job performance, and higher turnover (Lee & Ashforth, 1996; Wright & Cropanzano, 1998). Clearly, such emotional exhaustion limits an entrepreneurial leader's effectiveness and well-being.

Cynicism has been described as negative attitudes felt by participants toward the organization and its executives and managers (Dean, Brandes, & Dharwadkar, 1998). Cynicism is characterized by frustration, disillusionment, contempt, and distrust toward the organization (Andersson, 1996). Cynicism is destructive to organizations, and, similar to emotional exhaustion, it detracts from entrepreneurial leaders' effectiveness. Given that mindfulness has been found to be beneficial for reducing burnout and stress in clinical samples (Weinstein & Ryan, 2011), we propose that entrepreneurial leaders with high mindfulness have a greater awareness and attention to the present, which will ultimately lead to lower levels of emotional exhaustion and cynicism. This leads to the following study hypotheses:

Hypothesis 4: Entrepreneurial leaders' mindfulness will be negatively related to their level of emotional exhaustion.

Hypothesis 5: Entrepreneurial leaders' mindfulness will be negatively related to their level of cynicism.

The Mediation Role of Psychological Capital

Besides the direct negative relationship between leaders' mindfulness and various dysfunctional outcomes, we also examined the possible mediating effect that the now recognized positive multidimensional psychological capital or PsyCap (consisting of hope, efficacy, resilience, and optimism; see Luthans, Avolio, Avey & Norman, 2007; Luthans, Youssef, & Avolio, 2007) may have on better understanding this relationship. Specifically, we propose that PsyCap may be a mediating mechanism through which the mindfulness of leaders affects their dysfunctional outcomes.

Drawing from positive psychology and positive organizational behavior, PsyCap is an individual's positive psychological state of development characterized by having confidence (efficacy); making positive attributions and having positive future expectations (optimism); persevering toward goals and, when necessary, redirecting paths to goals (hope); and bouncing back from adversity (resilience) (Luthans, Youssef, et al., 2007, p. 3). Research has clearly found that when the four psychological resources are combined, they form a higher order, core construct that is a stronger predictor of attitudes and performance than any one of the four components by itself (Luthans et al., 2007). PsyCap has been shown to add variance to desired attitudinal and behavioral outcomes beyond the demographics and well known positively oriented constructs such as core self-evaluations, personality traits and person-organization and person-job fit (Avey, Luthans, & Youssef, 2010). As indicated in the introductory comments, a recent meta-analysis of 51 independent samples (see Avey, Reichard, et al., 2011) found PsyCap not only has a strong positive relationship with desirable attitudes, behaviors and performance, but also psychological well-being of employees (Avey et al., 2010) and negative relationships with cynicism, intentions to quit and counterproductive behaviors (Avey, Luthans, et al., 2010) and importantly stress (Avey et al., 2009). There has also been research exploring the relationship between PsyCap and leadership such as the following: Jensen and Luthans (2006) found a relationship between entrepreneurs' PsyCap and their authentic leadership (Jensen & Luthans, 2006); Avey, Avolio, and Luthans (2011) and Story et al. (2013) found that leaders' PsyCap has an impact on their followers' PsyCap; and Norman, Avolio, and Luthans (2010) found that the PsyCap of leaders had an impact on their followers' trust and perceived performance of them. More directly, Avey et al. (2008) found that mindfulness and PsyCap were both positively related to positive emotions, and furthermore, interacted with each other, showing these constructs can play an important role together.

As outlined above, mindfulness has been found to play a key role in developing informed and self-determined behavioral regulation and autonomy, which has long been associated with mental well-being (Ryan & Deci, 2008; Ryan, Huta, & Deci, 2008). As indicated, Glomb et al. (2011) noted that mindfulness facilitates this in two ways. The primary mechanism decreases automatic mental processes where past cognitive habits and experiences constrain thinking, but, and central to our mediation hypothesis, mindfulness also has a secondary process, such that the space between self and cognition decreases neg-

ative rumination and enhances positive self-regulation. A series of studies by Fetterman, Robinson, Ode, and Gordon (2010) found that mindfulness was not only negatively related to impulsivity, but positively related to self-regulation, supporting the notion that mindfulness may also promote other mechanisms such as self-regulation or PsyCap. In other words, the process of mindfulness may facilitate a separation between self and the event that results in self-regulated activity inclined toward positive well-being.

In summary, through greater reflective choice of actions and reactions, the mindfulness process includes increased response flexibility, such as receptiveness to resiliency and positivity. In other words, mindfulness not only has a role in buffering ill-being, but also acts in a way that enhances a person's positive reflective choices and positive functioning (Hülsheger et al., 2013). In support of this other function of mindfulness in enhancing a person's reflective and positive orientation, using MAAS Leroy et al. (2013) found mindfulness had a positive impact by enhancing employees' receptivity toward authentic functioning. This in turn benefited employee engagement. Other researchers (e.g., Allen & Kiburz, 2011; Schutte & Malouff, 2011), also using MAAS, found mindfulness enhanced subjects' receptivity toward more proximal psychological and physiological constructs such as emotional intelligence, vitality, and sleep. Whereas Avey et al. (2008) found that mindfulness and PsyCap interacted to promote positivity, in the current study we extend the benefits of mindfulness. Specifically, similar to what other studies have done (e.g., see Allen & Kiburz, 2011; Leroy et al., 2013; Schutte & Malouff, 2011), we have expanded the function of mindfulness to include PsyCap as a proposed mediator to outcomes.

PsyCap is developed via one's ability to engage and harness positive social–cognitive functioning and agency (Bandura, 2008; Luthans et al., in press). For example personal efficacy, optimism, hope, and resiliency all are underpinned by positive mental self-regulation held together by the common thread of a "positive appraisal of circumstances and probability for success based on motivated effort and perseverance" (Luthans, Avolio, et al., 2007, p. 550). Engaging in hopeful agency and proactive pathways to goal attainment, personal confidence and efficacy, optimistic cognitive processing in interpreting events, and bouncing back from stressful situations (resiliency) are all mental processes that require self-regulation and attention to positive guidance in these mental processes (Luthans et al., 2007, in press). Mindfulness thus may harness the positive mental process required for PsyCap by facilitating the timely connecting of the positive mental processes required. Consequently, we suggest that mindfulness serving as a type of background "radar" aids clarity and receptivity toward the positive construct of PsyCap.

In summary, we propose that mindfulness may encourage leaders to accurately perceive and draw from their own PsyCap, because the process of mindfulness facilitates a separation between self and the event and this in turn facilitates the reflective choice of actions and reactions such as greater hope, efficacy resiliency, and optimism. Thus, we predict that mindfulness facilitates one's PsyCap, and PsyCap in turn may be related to the leader's mental well-being. This background leads to the derivation of our final study hypothesis as follows:

> *Hypothesis 6:* Leaders' PsyCap will mediate the influence of their mindfulness toward their mental well-being out-

comes (i.e., junior and middle managers' anxiety, depression, and negative affect; CEOs/presidents' anxiety and depression; and entrepreneurs' emotional exhaustion and cynicism).

Method

Samples and Procedure

We utilized four independent samples to test the effects of leaders' mindfulness on their mental well-being outcomes. These four samples were (a) junior managers, (b) middle managers, (c) senior managers, and (d) entrepreneurs. The mindfulness and PsyCap survey items used were identical for all four samples. However, for breadth and relevancy of the outcomes we used anxiety and depression for the three manager samples, negative affect for the junior and middle manager samples, and job burnout (consisting of emotional exhaustion and cynicism) for the entrepreneur sample. To help minimize potential bias related to common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), data were collected in two waves with a time gap between surveys of two to four weeks. Spector (2006) also suggested the separation of variables over time as a way to minimize potential issues of bias.

The first phase of data collection gathered demographic information and the survey responses for the antecedent (mindfulness) and mediator (PsyCap) variables. The second survey contained all the mental well-being outcome measures. A cover letter briefly outlining the study and its aims was included with the surveys, and they were hand delivered and collected by the researchers except for the top management sample that was done by mail. Table 1 provides details on the four samples.

The junior and middle managers and entrepreneur samples were drawn from a wide regional area in New Zealand, and the senior manager sample came from a mail survey across the entire country. Only this latter sample of CEOs/presidents had a modest response rate (15.9%). However, this rate is similar with other studies targeting CEOs in New Zealand, such as 23.4% (Guthrie, 2001) and 18.2% (Gibb & Haar, 2010). However, in both those studies, respondents had to complete only one survey as opposed to the two in this study. Finally, Table 1 shows the nonrespondents between surveys 1 and 2 across all samples were minimal (less than 4.6% across all four samples), and there were no significant differences between those responding to both surveys and those who completed only the first survey.

Measures

Mindfulness was measured using the Brown and Ryan (2003) Mindful Attention Awareness Scale or MAAS, coded 1 = *never* to 5 = *all of the time*. The MAAS was chosen because it is the dominant measure for mindfulness in the literature (e.g., Allen & Kiburz, 2011; Hülsheger et al., 2013; Leroy et al., 2013; Schutte & Malouff, 2011; Weinstein & Ryan, 2011). We used the MASS-short 5-item scale by Höfling, Moosbrugger, Schermelleh-Engel, and Heidenreich (2011) as this has strong similarities to the full measure. A sample item is *It seems I am running on automatic without much awareness of what I'm doing*. All items are reverse scored to produce a score where the higher score indicates greater mindfulness and awareness of the present. This

Table 1. Sample Demographics

Details	Sample 1	Sample 2	Sample 3	Sample 4
Focus	Junior Managers	Middle Managers	Senior Managers/CEOs	Entrepreneurs
Number of organizations sampled	150	150	1,365	200
Distribution method	Physically handed out	Physically handed out	Mail out	Physically handed out
Number of surveys distributed	400	400	1,365	200
Number of respondents (response rate)	202 (50.5%)	183 (45.8%)	205 (15.9%)	107 (53.5%)
Number of respondents lost between survey 1 and 2	15 (3.8%)	18 (4.5%)	22 (1.6%)	5 (2.5%)
Respondent demographics				
Age (years)	33.3 (SD = 12.4)	41.9 (SD = 12.4)	51.3 (SD = 7.5)	43.2 (SD = 12.0)
Males	52%	64%	92%	56%
Married	55%	74%	96%	81%
Hours worked	35.0 (SD = 12.0)	45.1 (SD = 13.0)	54.2 (SD = 8.2)	45.9 (SD = 14.4)
Job tenure (years)	4.1 (SD = 5.0)	7.4 (SD = 7.6)	7.4 (SD = 7.5)	10.1 (SD = 9.7)
Education qualifications				
High school	35.4%	26.8%	13.6%	32.3%
Technical college	19.6%	26.8%	10.6%	23.7%
University degree	32.8%	34.5%	36.9%	33.3%
Postgraduate	12.2%	11.9%	38.9%	10.8%
Sector				
Private	64.9%	64.0%	60.4%	83.5%
Public	30.9%	27.4%	31.5%	16.5%
Not-for-profit	4.1%	8.6%	8.1%	0.0%

measure had strong reliability across all four samples (α = .81, .81, .72, and .84).

Psychological Capital was measured using the 12-item version of the PCQ (Luthans, Youssef, et al., 2007). The PCQ consists of four subscales: (a) Hope, (b) Resilience, (c) Optimism, and (d) Efficacy and has been validated (Luthans, Avolio, et al., 2007) and supported in a number of studies over the years (e.g., Avey et al., 2009; Avey, Reichard, et al., 2011; Gooty, Gavin, Johnson, Frazier, & Snow, 2009; Luthans, Avey, Avolio, & Peterson, 2010). The 12-item version has been psychometrically determined and validated (Avey et al., 2011) and successfully used in a number of studies (e.g., Luthans, Avey, Clapp-Smith, & Li, 2008a; Norman et al., 2010). Items for this study were coded 1 = *strongly disagree* to 5 = *strongly agree*. Sample items include *I feel confident in representing my work area in meetings with management* (Efficacy*), If I should find myself in a jam at work, I could think of many ways to get out of it* (Hope), *I usually take stressful things at work in stride* (Resilience), and *I always look on the bright side of things regarding my job* (Optimism). Following common practice (e.g., Avey, Reichard et al., 2011; Luthans, Avolio et al., 2007; Luthans, Youssef et al., 2007), we combined the four dimensions to determine the overall psychological capital score for respondents. This measure had strong reliability across all samples (α = .85, .87, .83, and .86).

Anxiety and Depression were measured in the three manager samples using 6 items from the Axtell et al. (2002) scale ranging from 1 = *never* to 5 = *all the time*. For both scales, respondents were presented with three adjectives and were asked to describe how often these apply to them at work. Sample items were *anxious* and *worried* (for anxiety) and *depressed* and *miserable* (for depression). A high score represents higher levels of anxiety or depression. The anxiety measure had acceptable reliability across all three samples (α = .83, .83, and .87), as did the depression scale (α = .85, .86, and .87).

Negative Affect was measured in the junior and middle manager samples through three negative items of the Positive and Negative Affect Schedule or PANAS (Watson, Clark, & Tellegen, 1988), coded 1 = *very slightly* to 5 = *extremely*. Sample items include *upset, irritable,* and *jittery*. Shorted PANAS measures have been previously validated (Song, Foo, & Uly, 2008). The negative affect measure had strong reliability in both samples it was used (α = .80 and .82).

Job burnout was measured only in the entrepreneur sample using 6 items from the Maslach and Jackson (1981) scale, coded 1 = *never* to 5 = *always*. The *Emotional Exhaustion* dimension was measured by 3-items; sample items *include I feel used up at the end of the workday,* and *I feel tired when I get up in the morning and have to face another day on the job*. This scale had adequate reliability (α = .75). The *Cynicism* dimension (originally termed the depersonalization dimension) was measured by 3-items; sample items *include I have become more cynical about whether my work contributes anything* and *I have become less interested in my work since I started this job*. This scale also had adequate reliability (α = .71).

As with other Self-Determination Theory studies (e.g., Brown & Kasser, 2005), demographic variables were controlled for the following: *Age* (in years), and *Education* (1 = *high school*, 2 = *technical college*, 3 = *university degree*, 4 = *postgraduate qualification*). Owing to the diverse nature of the samples, and to improve comparisons between the diverse leader samples, we also controlled for industry sector, specifically *Private Sector* (1 = *yes*, 0 = *no*) and *Firm Size* (total number of employees).

Analytic Strategy

Hypotheses were tested using SEM in AMOS to assess the direct effects of mindfulness and the potential meditation effects of PsyCap for each study, following Hair, Black, Babin, and Anderson (2010). In addition, we followed Cheung and Lau (2008) using bootstrapping to confirm the mediated effects.

Results

Measurement Models

To confirm the separate dimensions of study variables, measures were tested by Structural Equation Modeling (SEM) using AMOS 20.0 for each study. While studies using SEM typically offer a number of goodness-of-fit indexes, Williams, Vandenberg, and Edwards (2009) suggested three goodness-of-fit indexes as superior ways to assess model fit: (a) the comparative fit index (CFI ≥ .95), (b) the root-mean-square error of approximation (RMSEA ≤ .08), and (c) the standardized root mean residual (SRMR ≤.10). The hypothesized measurement model and alternative models (1 = *where mindfulness and PsyCap items were combined* and 2 = *where outcomes were combined*) are shown in Table 2 for all studies.

Overall, the hypothesized measurement model fit the data best for all studies and this was confirmed with the alternative model being a significantly poorer fit (Hair et al., 2010) for each sample.

Tables 3 through 5 show that across all four samples, mindfulness is significantly and negatively correlated with all the dysfunctional mental well-being variables (−.25 > r > −.37, all *p* < .01). PsyCap is also significantly negatively correlated with all the mental well-being variables (−.16 > r > −.36, all *p* < .01). In all four samples, the leaders' PsyCap is positively correlated with their mindfulness (.15 < r < .40, all *p* < .05). Finally, within each sample, all mental well-being outcomes are significantly correlated (all *p* < .01) but not at levels of concept redundancy (i.e., r > .75; Morrow, 1983), thus providing preliminary evidence indicating they are convergent, but also discriminant, constructs.

Two structural models were tested to determine the most optimal model based on the data: (a) a direct effects only model with mindfulness predicting PsyCap and all mental health outcomes; and (b) a partial mediation model where mindfulness predicts PsyCap and then both predict all mental health outcomes. Analysis showed that of the four control variables, only age was significant, so for parsimony, models are presented with only age included. The structural models for all studies and the comparison between them are shown in Table 6.

Model comparison tests (Hair et al., 2010) showed that Model 2 (partial mediation model) is superior to Model 1 (direct effects) for all four studies. Aligned with the recommendations of Grace and Bollen (2005), unstandardized regression coefficients are presented for all studies.

Table 7 shows that for all samples, mindfulness is significantly related to PsyCap for junior managers (β = .41, *p* < .01), middle managers (β = .17, *p* < .05), top managers (β = .69, *p* < .001), and entrepreneurs (β = .19, *p* < .05). The overall variance for PsyCap accounted for by age and mindfulness ranged from 4% to 22%. Toward sample 1 (junior managers), Table 7 shows that mindfulness is significantly and negatively related to anxiety (β = −.40, *p* < .01), and marginally significant for PsyCap (β = −.26, *p* < .1), and also for depression (marginally significant for mindfulness β = −.30, *p* < .1; and highly significant for PsyCap β = −.63, *p* < .001), and negative affect (mindfulness β = −.38, *p* < .05; PsyCap β = −.59, *p* < .01). The overall variance by age, mindfulness and PsyCap toward mental health outcomes of lower managers was 17% to 23%.

With regard to sample 2 (middle managers), Table 7 shows that mindfulness is significantly and negatively related to anxiety (β = −.57, *p* < .01), but PsyCap is not (β = −.24, *p* = .169). However, for the other outcomes both are related to depression (marginally for mindfulness β = −.28, *p* < .1; and significantly for PsyCap β = −.38, *p* < .05), and significantly for negative affect (mindfulness β = −.37, *p* < .01; PsyCap β = −.39, *p* < .01). The overall variance by age, mindfulness and PsyCap toward mental health outcomes of middle managers was 17% to 24%. For sample 3 (top managers), mindfulness and PsyCap are shown to be significantly and negatively related to anxiety (mindfulness β = −.58, *p* < .05; PsyCap β = −.39, *p* < .05) and depression (mindfulness β = −.52, *p* < .05; PsyCap β = −.44, *p* < .01). The overall variance accounted for the mental health model was 17% to 24% for top managers.

Finally, sample 4 (entrepreneurs) showed that mindfulness and PsyCap are both significantly and negatively related to emotional exhaustion (mindfulness β = −.52, *p* < .01; PsyCap β = −.49, *p* < .05) and cynicism (mindfulness β = −.54, *p* < .01; PsyCap β = −.48, *p* < .05). The overall variance accounted for the mental health model for entrepreneurs was 27% to 37%. Overall, these results provide strong support for Hypotheses 1 to 5.

Regarding mediating effects, Tables 2 through 4 show that PsyCap is significantly positively correlated with mindfulness and negatively with all the dysfunctional mental well-being outcomes. These results meet the requirements of steps one and two in mediation analysis (Baron & Kenny, 1986). Although the SEM analysis shows the mediation model is the best fit to the data, we also conducted bootstrapping in AMOS (at 1000 repetitions, Cheung & Lau, 2008) to provided additional support for mediation (95% bias-corrected confidence intervals). In study one, junior managers PsyCap significantly mediated the relationship between mindfulness and anxiety (LL = −0.38, UL = −0.01, *p* < .05), depression (LL = −0.48, UL = −0.19, *p* < .01), and negative affect (LL = −0.50, UL = −0.13, *p* < .01). In study two, middle managers PsyCap significantly mediated the relationship between mindfulness and depression (LL = −0.42, UL = −0.01, *p* < .05) and negative affect (LL = −0.45, UL = −0.02, *p* < .05) but not anxiety (LL = −0.28, UL = 0.05, not significant). In study three, top managers PsyCap significantly mediated the relationship between mindfulness and anxiety (LL = −0.40, UL = −0.01, *p* < .05) and depression (LL = −0.46, UL = −0.06, *p* < .01). Finally, in study four, entrepreneurs PsyCap significantly mediated the relationship between mindfulness and cynicism (LL = −0.55, UL = −0.05, *p* < .05), but not emotional exhaustion (LL = −0.50, UL = 0.06, not significant). Overall, there is sufficient evidence to suggest PsyCap partially mediates the influence of mindfulness toward the mental well-being outcomes, supporting Hypothesis 6.

Additional Analysis

We conducted further analysis on the data to better understand the characteristics of mindfulness and PsyCap. In particular, the characteristics of our samples allowed us to explore whether leadership position may play a role in the findings. The mean score for mindfulness is consistently high and well above the midpoint of 3.0 for all four samples: junior managers (*M* = 3.8), middle managers (*M* = 3.9), top managers (*M* = 4.2), and entrepreneurs (*M* = 3.8). ANOVA confirmed a significant dif-

Table 2. Results of Confirmatory Factor Analysis for All Study Measures

Model	Model fit indices					Model differences			
	χ^2	df	CFI	RMSEA	SRMR	$\Delta\chi^2$	Δdf	p	Details
Study 1 (Junior Managers)									
1	377.1	288	.96	.04	.06				
2	387.5	291	.95	.04	.07	10.4	3	.05	Model 1 to 2
3 5	16.6	292	.89	.06	.07	139.5	4	.001	Model 1 to 3
Study 2 (Middle Managers)									
1	361.8	288	.96	.04	.06				
2	384.5	291	.95	.04	.09	22.7	3	.001	Model 1 to 2
3	427.9	292	.93	.05	.06	66.1	4	.001	Model 1 to 3

Model 1: Hypothesized 5-factor model: mindfulness, PsyCap (higher order model), anxiety, depression, and negative affect.
Model 2: Alternative 4-factor model: PsyCap with mindfulness as a fifth factor, anxiety, depression, and negative affect.
Model 3: Alternative 4-factor model: mindfulness, PsyCap, anxiety and depression combined, and negative affect.

Model	χ^2	df	CFI	RMSEA	SRMR	$\Delta\chi^2$	Δdf	p	Details
Study 3 (Senior Managers)									
1	337.9	223	.96	.05	.07				
2	345.8	225	.93	.05	.08	7.9	2	.05	Model 1 to 2
3	450.8	226	.87	.07	.07	112.9	3	.001	Model 1 to 3

Model 1: Hypothesized 4-factor model: mindfulness, PsyCap (higher order model), anxiety, and depression.
Model 2: Alternative 3-factor model: PsyCap with mindfulness as a fifth factor, anxiety, and depression.
Model 3: Alternative 3-factor model: mindfulness, PsyCap, anxiety and depression combined.

Model	χ^2	df	CFI	RMSEA	SRMR	$\Delta\chi^2$	Δdf	p	Details
Study 4 (Entrepreneurs)									
1	262.6	223	.95	.04	.07				
2	290.2	226	.92	.05	.10	27.6	3	.001	Model 1 to 2
3	287.1	226	.93	.05	.07	24.5	3	.001	Model 1 to 3

Model 1: Hypothesized 4-factor model: mindfulness, PsyCap (higher order model), emotional exhaustion, and cynicism.
Model 2: Alternative 3-factor model: PsyCap with mindfulness as a fifth factor, emotional exhaustion, and cynicism.
Model 3: Alternative 3-factor model: mindfulness, PsyCap, and emotional exhaustion & cynicism combined.

Table 3. Means, Standard Deviations, and Correlations for Junior and Middle Managers Samples

Variables	Sample 1 M	Sample 1 SD	Sample 2 M	Sample 2 SD	1	2	3	4	5	6	7	8
1. Age	33.3	12.4	41.7	12.4	—	−.01	−.01	.46**	−.30**	−.28**	−.28**	.11
2. Education	2.2	1.1	2.3	1.0	.17**	—	.05	−.01	.08	.05	.10	−.02
3. Firm size	1.8	.93	1.4	.83	.17_	.12	—	.04	−.01	.01	.01	.03
4. Mindfulness	3.8	.72	3.9	.72	.33**	.14	.08	—	−.36**	−.26**	−.33**	.16**
5. Anxiety	2.4	.77	2.3	.83	−.04	.13	−.03	−.30**	—	.61**	.57**	−.17**
6. Depression	1.8	.88	1.6	.78	−.24**	.07	−.04	−.30**	.50**	—	.60**	−.21**
7. Negative affect	1.8	.84	1.6	.75	−.09	.06	.02	−.28**	.51**	.68**	—	−.27**
8. Psychological capital	3.8	.51	4.0	.50	.19**	.00	.02	.35**	−.24**	−.35**	−.32**	—

Sample 1 (Junior Managers, *n* = 202) below and Sample 2 (Middle Managers, *n* = 183) above the diagonal line.

$* p < .05$; $** p < .01$

ference existed among the various samples, F = 16.680, *p* < .001, and post hoc analysis (LSD) shows that the top level managers have significantly higher levels of mindfulness compared to the lower level leaders (all *p* < .001). The only other significant difference was middle managers were significantly higher than junior managers (p < .05).

The mean score for PsyCap is also consistently high and well above the midpoint of 3.0: junior managers (*M* = 3.8), middle managers (*M* = 4.0), top managers (*M* = 4.2), and entrepreneurs (*M* = 3.9). Similar to mindfulness, ANOVA confirmed a significant difference existed for PsyCap among the samples, *F* = 33.122, *p* < .001, with post hoc analysis (LSD) indicating that top managers have significantly higher levels of PsyCap compared with all other leaders (all *p* < .001). Although junior managers and entrepreneurs were not significantly different from each other, the PsyCap of middle managers were significantly higher than both junior managers (*p* < .001) and entrepreneurs (*p* < .01). Overall, these findings indicate that leaders' formal position relates to their mindfulness and PsyCap, with those leaders at the highest organizational levels showing a greater degree of mindfulness and PsyCap than those in lower leadership positions and of entrepreneurs.

Discussion

Leaders, while trying to be a source of positive energy and growth within an organization, are nevertheless realistically faced with complex, challenging, and pressure-packed situa-

tions. This potentially toxic environment calls for organizations to develop a greater understanding of leaders' psychological resources that can aid their positive well-being and help them fight off dysfunctional outcomes. This study, spread over a wide range of leaders and organizations, consistently found a strong negative relationship between their mindfulness and dysfunctional mental well-being outcomes.

The findings of this study attest to the positive impact that mindfulness seems to have in combating a number of dysfunctional outcomes affecting today's leaders. Mindfulness not only had direct effects on the dysfunctions, but further analysis found that the leaders' positive psychological capital served as a partial mediator between their mindfulness and these outcomes. Overall, the results indicate mindfulness and PsyCap may prove to be the type of psychological strengths leaders can draw from for their mental well-being in these trying times.

The present study also answers the call for the assessment of constructs at different levels of leadership (e.g., DeChurch et al., 2010). For example, most studies do not make a distinction between the various levels of organizational leaders, and those that do tend to concentrate on either supervisors or CEOs, but middle managers are often excluded. By including three samples at various levels and types of organizations, and even extending this further to include entrepreneurs, we argue we have a wide range of leadership positions to test the effects of mindfulness and the mediating effect of PsyCap, thus contributing to generalization and external validity. The findings also demonstrate the beneficial role of mindfulness and PsyCap in com-

Table 4. Means, Standard Deviations, and Correlations for Senior Managers Sample

Variables	M	SD	1	2	3	4	5	6	7
1. Age	51.3	7.5	—						
2. Education	3.0	1.0	−.01	—					
3. Firm size	2.4	.56	.08	.18*	—				
4. Mindfulness	4.2	.46	.09	−.02	.02	—			
5. Anxiety		2.1	.72	−.20**	.09	.06	−.32**	—	
6. Depression	1.4	.60	−.08	.09	−.03	−.31**	.62**	—	
7. Psychological capital	4.2	.39	.02	.06	.08	.39**	−.22**	−.29**	—

Sample 3 (Senior Managers, *n* = 205).

$* p < .05$; $** p < .01$

Table 5. Means, Standard Deviations, and Correlations for Entrepreneurs Sample

Variables	M	SD	1	2	3	4	5	6	7
1. Age	43.2	11.8	—						
2. Education	2.2	1.0	−.07	—					
3. Firm size	1.3	1.1	−.16	.02	—				
4. Mindfulness	3.8	.71	.24*	.09	−.06	—			
5. Emotional exhaustion	2.4	.81	−.32**	.06	.02	−.35**	—		
6. Cynicism	1.9	.88	−.21*	.04	.03	−.32**	.54**	—	
7. Psychological capital	3.9	.53	.22*	−.05	.19	.24**	−.24*	−.25**	—

Sample 4 (Entrepreneurs, *n* = 107).
* *p* < .05 ; ** *p* < .01

bating dysfunctional psychological outcomes, again for all types of organizations and levels of leadership. The consistent finding that PsyCap negatively relates to these outcomes, as well as having a partial mediation effect, also supports the beneficial and unique role of mindfulness toward leaders' well-being beyond the more established PsyCap construct. Finally, we extended the outcomes tested and found similar effects for entrepreneurs toward burnout (i.e., emotional exhaustion and cynicism). Given that burnout is widely recognized as a big problem for entrepreneurs (Cogliser & Brigham, 2004; Jensen & Luthans, 2006), this finding has potential personal and economic benefits for start-ups and innovative businesses in a receding economy needing job creation.

The study findings reinforce previous research that mindfulness (Weinstein & Ryan, 2011) and PsyCap (Avey et al., 2009) is beneficial to employee stress reduction. Mindfulness implications for stress extend the implications beyond clinical research and applications. For example, clinical research has established that mindful individuals tend to be less susceptible to psychological distress and more likely to be psychologically well-adjusted (Brown et al., 2007). Our study's findings contribute to a greater understanding of the benefits of mindfulness and ex-

tend it to leaders' well-being. This is central as leaders well-being infiltrates and impacts followers (i.e., the contagion effect, see Story et al., 2013).

Additional analysis also showed that leadership level was significant in mindfulness and PsyCap. For example, senior managers had significantly higher levels of both mindfulness and PsyCap compared with lower level leaders and entrepreneurs. Brown and Ryan (2003) found those who score high on the MAAS appear to value intellectual pursuits slightly more than lower scorers, suggesting higher levels of mindfulness may predict greater leadership and higher career pursuits. However, the conjecture surrounding such findings requires further research.

While researchers have long relied on traditional interventions such as meditation to enhance mindfulness, our study suggests, like PsyCap which has been proven to be open to development (see Luthans, Avey et al., 2010; Luthans, Avey, & Patera, 2008b), as indicated mindfulness may also be "state-like" and thus be open to development (Brown et al., 2007). For example, Davidson (2012) and Marianetti and Passmore (2010) have suggested specific guidelines focused on purposeful and authentic awareness and attention to stay in the moment, and Langer

Table 6. Results of Structural Equation Models for All Studies

Model	Model fit indices					Model differences			
	χ^2	df	CFI	RMSEA	SRMR	χ^2	Δdf	p	Details
Study 1 (Junior Managers)									
1	411.2	312	.95	.04	.08				
2	397.8	309	.96	.04	.06	13.4	3	.01	Model 2 to 1
Study 2 (Middle Managers)									
1	401.0	312	.96	.04	.08				
2	391.5	309	.96	.04	.06	9.5	3	.05	Model 2 to 1
Study 3 (Senior Managers)									
1	362.1	244	.96	.05	.08				
2	353.1	242	.97	.05	.07	9.0	2	.05	Model 2 to 1
Study 4 (Entrepreneurs)									
1	296.6	244	.94	.05	.08				
2	289.1	242	.95	.04	.07	7.5	2	.05	Model 2 to 1

Model 1: Direct effects model, controlling for age.
Model 2: Partial mediation model, controlling for age.

Table 7. Final Mediation Model Results for Mental Well-Being Outcomes (All Studies)

Variables	Study 1 (Junior Managers)				Study 2 (Middle Managers)			
	PsyCap	Anxiety	Depression	Negative affect	PsyCap	Anxiety	Depression	Negative affect
Age	—[a]	.01	−.01	.00	—[a]	−.01	−.01*	−.01
Mindfulness	.41***	−.40**	−.30†	−.38*	.17*	−.57**	−.28†	−.37**
PsyCap	—	−.26†	−.63***	−.59**	—	−.24	−.38*	−.39**
Total R^2	.22	.17	.23	.21	.04	.21	.17	.24

Variables	Study 3 (Top Managers)				Study 4 (Entrepreneurs)		
	PsyCap	Anxiety	Depression		PsyCap	Emotional exhaustion	Cynicism
Age	—[a]	−.02**	−.00		—[a]	−.01*	−.01
Mindfulness	.69***	−.58*	−.52*		.19*	−.52**	−.54**
PsyCap	—	−.39*	−.44**		—	−.49*	−.48*
Total R^2	.15	.13	.15		.06	.27	.37

Unstandardized regression coefficients, two-tailed.

a. Age was covaried with PsyCap so no regression weight scores.

† $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$

(1989) has long emphasized looking for something new in each moment to enhance one's mindfulness and avoid being mindless. Moreover, although the empirical data of the present study strongly supported a mediation effect from PsyCap on the mindfulness-mental health relationships, we also tested for PsyCap as a moderator on these relationships. However, no significant interaction effects were found, further confirming the mediation approach that PsyCap seems to play in mindfulness.

Overall, the study found mindfulness benefited leader well-being, and these findings also have implications for leader development. Moreover, the relationship between leadership position and both mindfulness and PsyCap provides a new contribution to the literature on mindfulness, PsyCap, and leadership.

Limitations, Future Research, and Implications for Practice

Limitations of the study mainly revolve around the self-reported nature of the data gathering. However, the study variables tested depend upon self-reporting. Furthermore, although cross sectional in nature, there was a time lag between predictors and outcomes, which we noted can help to minimize the problem of common method variance (CMV) (see Podsakoff et al., 2003; Spector, 2006). Also an additional test for CMV was conducted; Harman's one factor test was undertaken on each sample. The resulting factor analysis (unrotated) resulted in multiple factors for each sample (more than 10 each) and with each sample having the largest factor accounting for less than 24% of the variance. Given that a single dominant factor did not emerge in any of the four samples, this suggests that CMV was not an issue (Podsakoff & Organ, 1986).

Overall, the multiple samples and the variety of leaders examined provide support for the findings. However, like other psychological constructs, future research into mindfulness can benefit from a longitudinal study design to assess the role of mindfulness as leaders' progress through their careers. This is especially important given our findings on differences among leader positions, specifically top level managers. Moreover, be-

cause the reported relationships are correlational, causal conclusions cannot be inferred. Future studies need longitudinal and experimental designs to determine whether mindfulness and PsyCap cause lower dysfunctional outcomes and improved well-being or to better answer questions such as do more mindful and high PsyCap managers tend to become CEOs, or does being a CEO manifest in greater mindfulness and PsyCap.

Another area for future research would be to explore other employee groups besides managers, such as nurses and teachers, who experience similar stressful environments and, similar to organizational leaders, also have a dimension to their job that involves the support and care of others (Lavoie-Tremblay, Bronin, Lesage, & Bonneville-Roussey, 2010). For example, future research could examine mindfulness and PsyCap in related helping professions such as nursing, teaching, social services, and counseling. It would be interesting to test these wider occupational groups on the benefits of mindfulness and PsyCap as positive psychological resources. Do these positive resources support those in roles that have direct influence on others well-being and they themselves suffer from high rates of dysfunctional outcomes and burnout?

Future research could also beneficially explore the process and guidelines of mindfulness training interventions, for example, stress reduction programs or meditation. Such training and development should be brought into the workplace to determine their effectiveness and importance to organizational leadership. In this regard, we suggest further research in both dispositional-based mindfulness and intervention-based state-like mindfulness, to enhance understanding of the role that mindfulness may play in developing positive leader well-being. The parallel can be seen with PsyCap, which we indicated is a recognized developmental construct proven to be enhanced through relatively short training interventions (Luthans, Avey et al., 2010) and has even been conducted online (Luthans et al., 2008b). This PsyCap training may provide a useful guide and avenue for researchers and practitioners to begin workplace mindfulness training interventions.

Conclusion

Leaders at all levels of organizations need more ammunition than ever before to fight off the mounting pressures and threats they are facing in their day-to-day activities and career progress. The recent rediscovery of mindfulness has surfaced as a potential useful addition to leaders' psychological defense mechanisms and make a positive, proactive contribution to their mental well-being. This study provides initial empirical support for the value of leaders' mindfulness, and reaffirms the direct and mediating effects of PsyCap, in combating and preventing the real and potential dysfunctional outcomes associated with leaders responding to the pressures coming from their present and future environment.

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