

Trait Mindfulness at Work:

A Meta-Analysis of the Personal and Professional Correlates of Trait Mindfulness

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Abstract

Popular and academic press alike has concluded that mindfulness significantly benefits healthy individuals as well as those suffering from physical and psychological problems. Workplace interventions, clinical therapies, and popular self-help programs aimed at enhancing mindfulness abound, and research has demonstrated the efficacy of such mindfulness interventions on enhancing mindful states. Importantly, research also suggests the average frequency with which individuals experience states of mindfulness varies from person to person, underscoring the existence of a dispositional tendency toward mindfulness - *trait mindfulness*. We meta-analytically cumulate the results of 270 independent studies (N = 58,592 adults from non-clinical samples) of trait mindfulness in order to explore its personal and professional correlates. Results suggest the benefits of trait mindfulness extend to both personal and professional domains. With regards to personal benefits, trait mindfulness was found to be positively correlated with confidence ($\rho = .39$), mental health ($\rho = .38$), emotional regulation ($\rho = .40$), and life satisfaction ($\rho = .36$), and negatively correlated with perceived life stress ($\rho = -.43$), negative emotions ($\rho = -.40$), anxiety ($\rho = -.34$), and depression ($\rho = -.38$). Professionally, results suggest trait mindfulness may benefit job satisfaction ($\rho = .29$), performance ($\rho = .34$), and interpersonal relations ($\rho = .31$), while also reducing burnout ($\rho = -.48$) and work withdrawal ($\rho = -.17$). Meta-analytic regressions also suggest trait mindfulness adds incremental predictive variance over more traditional predictors of employee burnout and work performance.

The Link Between Trait Mindfulness and Workplace Functioning

Although subjective well-being is certainly an important outcome, it is not likely at the forefront of most managers' minds. Rather, employers are more concerned with outcomes like their employees' job performance and work effort, and the sorts of attitudes and behaviors that are known to lead to performance and effort, such as job satisfaction, interpersonal relations, stress, withdrawal, and burnout (Dane, 2011). Research suggests tendencies toward mindfulness may have positive implications for workplace functioning (Dane, 2011; Glomb et al., 2011).

In the same way that mindfulness may reduce psychological distress by reorienting the individual away from maladaptive ruminations, it may also help reduce perceptions of work-related stress and associated burnout. Mindful individuals tend to spend less time ruminating about negative past incidents and less time worrying about future failures, which likely decreases perceptions of stress,

depression, and burnout (Amrani, 2010; Marzuq & Drach-Zahavy, 2012). According to Langer (2014), mindfulness helps you realize that there are no positive or negative outcomes associated with your job/stress/fears, but rather just outcomes. By removing negative interpretations from events, stress is reduced. Indeed, research suggests mindfulness is associated with decreased perceptions of both work-related stress (e.g., Adams, 2011) and burnout (Amrani, 2011; Hansen et al., 2009; Marzuq & Drach-Zahavy, 2012).

Elements of mindfulness are also likely to have benefits for job performance and satisfaction. Mindful individuals find it easier to pay attention to what they are doing and identify when something is incorrect, which may help them avert danger (Dane, 2011; Langer, 2014). Mindful individuals are less easily bored at work, particularly when they are engaged in repetitive tasks; these individuals are also therefore better positioned to identify creative/innovative solutions (Langer, 2014). Mindfulness also allows for greater self-regulation by promoting greater present-moment awareness and control and hence a decrease in automatic behaviors. A reduction in automatic behaviors means individuals are more likely to catch errors and less likely to make mistakes (Glomb et al., 2011).

The decreased rumination and increased engagement characteristic of mindfulness is also likely to promote concentration and confidence (Glomb et al., 2011). Mindful individuals are more self-determined, more likely to work past obstacles, and more likely to set challenging goals (Glomb et al., 2011; Langer, 2014). These qualities should benefit job satisfaction, performance, and creativity (Bono & Judge, 2003; Judge, Bono, Erez, & Locke, 2005; Sheldon, Turban, Brown, Barrick, & Judge, 2003).

Research suggests mindfulness can improve social relationships via enhanced empathy and improved decision-making (Glomb et al., 2011). Mindful individuals are less evaluative of others and more charismatic, characteristics which have the dual benefit of making them like others more as well as making others like them more. Mindful employees are likely to be perceived as more effective than less mindful employees, particularly if they are in a managerial or leadership capacity (Glomb et al., 2011; Langer, 2014), which is likely at least partly a function of positive interpersonal relationships/interactions that are promoted by mindfulness. Satisfying interpersonal relationships in the workplace is a consistent predictor of satisfaction with one's job (Adams & Bond, 2000; Goldstein & Rockart, 1984; Lu, While & Louise Barriball, 2005). Indeed, research suggests mindfulness is associated with increases in perceived job satisfaction (Adams, 2011; May & O'Donovan, 2007; McCracken & Yang, 2008), satisfying interpersonal relationships at work (Adams, 2011; Frewen, Evans, Marsaj, Dozois, Partridge, 2008), work effort (Avey, Wernsing & Luthans, 2008; Giluk, 2010) and job performance (Giluk, 2010).

According to Glomb et al. (2011), the underlying processes associated with mindfulness improve one's relationship quality, resiliency, and task performance and decision-making. We would expect relationship quality improves job satisfaction, interpersonal relations, and to some extent work withdrawal. We would expect resiliency decreases burnout, job stress, and work withdrawal, and promotes job performance and work effort. As such, we would expect:

Hypothesis 2: Trait mindfulness will positively correlate with work-related outcomes, including reduced work-related stress, burnout, and work withdrawal, and enhanced work effort, job performance, job satisfaction, and interpersonal relations.

Does Trait Mindfulness Offer Incremental Predictive Value in Employee Job Performance and Burnout Above Traditional Predictors Like Work Effort and Perceived Stress?

Employee burnout and job performance are two workplace outcomes that have received considerable attention in the management literature since they are known to either directly or indirectly affect organizational success (Bakker, Demerouti & Verbeke, 2004; Taris, 2006; Wright & Bonett, 1997). Several antecedents of these two workplace outcomes have been studied, and the question becomes whether individual differences in mindfulness will relate to these outcomes incrementally over the other antecedents. That is, to what extent might trait mindfulness offer additional value to understanding work performance and burnout beyond what we could learn using traditional predictors, like work effort and stress?

Work effort, for example, is an important proximal predictor of an individual's job performance (Brown & Leigh, 1996). Though other factors like ability and knowledge have been identified as influential to both work effort and performance (Schmidt & Hunter, 1998), Herndon (2008) points out that employee mindfulness promotes a more thorough examination of the external environment. Also, mindfulness may influence self-determination and persistence allowing individuals to have greater performance in the face of adversity (Davis, 2009; Glomb et al., 2011). Beyond mere work effort, mindfulness promotes the perception of a more holistic view of the environment and the need to pause and reflect before taking action. Although mindful individuals are likely to be more focused on the task at hand, and thus having more effective work effort, we would expect that mindfulness' contribution to job performance is more than what can be explained simply by enhanced work effort. As such, we would expect:

Hypothesis 3: Trait mindfulness will explain variance in job performance beyond that explained by work effort.

Perceived work stress is key proximal predictor of job burnout (Dolan & Renaud, 1992). However, the tendencies toward present-moment awareness and lack of judgment common to mindful individuals are thought to diminish stress perceptions. It is likely that trait mindfulness reduces tendency toward burnout beyond what can be explained by its benefits to stress reduction. For instance, mindfulness is associated with better self-regulation and physiological regulation through the awareness of internal stimuli. Increased physiological arousal can lead to individuals "burning out" (Siegel, 2010). When physiological arousal is balanced and attuned, it can lead to feelings of calm (Cozolino, 2006). Additionally, due to the separation of self/ego and events/thoughts/emotions, as well as decreases in rumination, mindful individuals are better equipped to respond to stressful events (Broderick, 2005). Similarly, the relationship with mindfulness and determination may help to combat stressors that are found in the workplace reducing burnout potential. As such, we would expect:

Hypothesis 4: Trait mindfulness will explain variance in burnout beyond that explained by job stressors.

Analysis

The meta-analytic methodology outlined by Schmidt and Hunter (2015) was used to analyze data. Corrections were made for sampling error and unreliability in the measures. We used artifact distribution meta-analysis to make corrections for measure unreliability (reported as coefficient alpha in the primary studies) as reliability estimates were not consistently reported in primary studies. A summary of measure reliability by construct is provided in Table 2. In the results tables, we report total number of studies included in each meta analysis (k), total sample size (N), sample-size weighted mean observed correlation (r), standard deviation of r (SDr), sample-size weighted mean observed correlation corrected for reliability (ρ), standard deviation of ρ ($SD\rho$), 80% credibility interval around ρ (80%CV), 90% confidence interval around ρ (90%CI), and the percent variance in ρ due to artifacts (%ARTV). The credibility interval provides an estimate of the variability of corrected correlations across studies, such that wide CVs and those including zero suggest the presence of a moderator (Bobko & Roth, 2008; Kisamore, 2008; Kisamore & Brannick, 2008). The confidence interval provides an estimate of the accuracy of our estimation of mean ρ (Whitener, 1990). Rhos may be interpreted as significant (generalizable across situations) when the 80% CV does not include zero, which suggests that the relationship was positive in 90% of the studies (10% falls above the upper end of the distribution).

Using regression analyses, we sought to determine the independent contribution of trait mindfulness to the prediction of two salient workplace outcomes: job performance and burnout. In particular, we estimate the role of trait mindfulness in predicting job performance after controlling for the role of work effort, and the role of trait mindfulness in burnout perceptions after controlling for perceived work stressors. Following the theory-testing method developed by Viswesvaran and Ones (1995), we conducted regression analyses on meta-analytically derived correlations between the variables (i.e., meta-analytic regression; Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Zimmerman, 2008). The harmonic means of the total sample sizes on which each meta-analytic correlation from the input matrix was estimated to compute the standard errors associated with the regression coefficients (cf. Viswesvaran & Ones, 1995). In order to estimate the relationship between work effort and job performance, we used the meta-analytic effect size estimate ($\rho = .18$) reported by Cooper-Hakim and Viswesvaran (2005). In order to estimate the relationship between job stress and burnout, we used meta-analytic effect size estimates reported by Lee and Ashforth (1996). In particular, we computed a harmonic mean of $\rho = .48$ across their estimates of the correlation between emotional exhaustion and depersonalization with role stress, stressful work events, and work pressure, and used this estimate in our regression analysis. The other effect sizes were drawn from our results.

Discussion

An employee's tendency to focus in the present and avoid ruminating over past failures while at work is clearly an important variable in understanding and predicting workplace behavior and performance (e.g., Dane, 2011; Glomb et al., 2011). Although it had been formerly deemed too spiritual/religious to be relevant in today's workplaces, the state of being mindful (state mindfulness) and the tendency to be mindful (trait mindfulness) are neither religious nor irrelevant to the workplace. To date, extensive research has been conducted on implications of state mindfulness within clinical populations (e.g., Teleki, 2008), and on personal and professional implications of state mindfulness

invoked via mindfulness-based stress reduction training in non-clinical populations (e.g., Chiesa & Serretti, 2009; Sedlmeier, et al., 2012). However, the research on work-related correlates and consequence of employee trait mindfulness (i.e., mindfulness as a personality trait) has been scattered throughout the extant literature, making it difficult to draw conclusions about its relevance to the workplace.

We cumulated the extant research on trait mindfulness conducted on non-clinical adult samples, to assess the current state of understanding with regards to its role in subjective well-being and workplace functioning. Our findings indicate individual differences in mindfulness are associated with both personal and professional outcomes relevant to workplace behavior and performance. In particular, our findings suggest employees high in trait mindfulness may work harder and perform better than employees low in mindfulness. More mindful employees also report higher job satisfaction, as well as lower burnout, job stress, and work withdrawal. Trait mindfulness is also associated with an increased confidence in one's abilities to handle work and life challenges. Additional personal outcomes correlated with trait mindfulness have implications for organizational effectiveness in terms of overall healthcare costs as well as rates of absenteeism and presenteeism and employee attitudes while at work. In particular, we found trait mindfulness to be consistently positively associated with physical health, the ability to regulate emotions, life satisfaction, and decreased life stress, anxiety, depression, and negative emotions.

We also explored the extent to which trait mindfulness may add predictive value to our understanding of commonly held workplace relationships. For example, it is widely held that enhanced work effort yields performance improvements (Blau, 1993; Brown & Leigh, 1996). Using meta-regression, we found that employee trait mindfulness explained an additional 10% of the variance in job performance over and above work effort, confirming our speculation that the work of mindful individuals tends to be of higher quality than what could be explained by their level of work effort. Since we used coefficient alphas rather than inter-rater reliability to correct for unreliability in the performance measures, this is actually a conservative estimate of the link between trait mindfulness and job performance (Rothstein, 1990).

Similarly, it is widely held that the most important proximal predictor of employee burnout is their level of perceived job stress (Cherniss, 1980; Farber, 1983). Meta-regression results suggest trait mindfulness interacts with perceived job stress, reducing burnout. Indeed, the beta-weight for perceived stress predicting burnout was reduced when mindfulness was added to the equation, and the inclusion of mindfulness explained an additional 12% of the variance in employee burnout beyond that which could be explained by an employee's perceptions of work stress alone. This suggests that work stress does not automatically aggravate an employee's emotional investment in their work, but rather trait mindfulness may buffer its effects on burnout. This result also suggests mindful individuals are less likely to experience burnout, regardless of the extent of their perceived job stress.

Practical Implications

From an organizational perspective, trait mindfulness may offer predictive utility in identifying individuals who will be more successful in jobs requiring a great deal of present-moment orientation (e.g., first responders, law enforcement, military). The utility of personality tests for personnel selection

has been well documented (e.g., Hertz & Donovan, 2000; Schmidt & Hunter, & 1998; Tett, Jackson & Rothstein, 1991); our results suggest trait mindfulness is a strong correlate of personal and professional outcomes relevant to organizational effectiveness, (via greater work effort, confidence, satisfaction, attitude, and health, and decreased burnout, stress, and anxiety) and may offer practical value for inclusion in personnel selection.

The extant literature has thoroughly documented the positive implications of mindfulness interventions at improving subjective well-being and workplace functioning. However, mindfulness interventions can be time consuming and costly (Adams, 2011; Dane, 2011; Giluk, 2009; Schroevers & Brandsma, 2010; Shapiro, Brown, Thoresen & Plante, 2011). Depending on interventions to enhance state mindfulness may also not be timely or financially viable. Further, the literature on transfer of training has shown that trainee characteristics influence training outcomes (cf., Baldwin & Ford, 1988); in fact, there is empirical evidence that the level of structure needed for effective training intervention depends on the initial individual level of the trainees' skill. To the extent that some individuals are naturally inclined toward mindfulness, organizations may be able to further capitalize on mindfulness interventions simply by attending to individual differences in trait mindfulness during the design and implementation of these programs. By taking into account individual differences in trait mindfulness, training programs can be structured for maximum utility.

Importantly, our results regarding the role of trait mindfulness in personal and professional outcomes also support the development of interventions aimed at enhancing state mindfulness, regardless of trainee predisposition toward mindfulness. As mindfulness-based training in the workplace (e.g., MBSR, ACT) has been linked to decreased burnout (Bethay, Wilson & Moyer, 2009; Galantino, Baime, Maguire, Szapary & Farrar, 2005; Goodman & Schorling, 2012), stress (Brady, O'Connor, Burgermeister & Hanson, 2012; Jaltuch, 1997; Klatt, Buckworth & Malarkey, 2009; Shapiro, Astin, Bishop & Cordova, 2005), increases in general well-being (Flaxman & Bond, 2010; Goodman & Schorling, 2012) and performance (Wolever, Bobinet, McCabe, Mackenzie, Fekete, Kusnick & Baime, 2012), and our results echo these effects, organizations may be wise to capitalize on mindfulness whether by hiring (using trait mindfulness as a selection variable) or training (using interventions to enhance state mindfulness).

Results

We ran a series of meta-analyses to test hypotheses 1 and 2. Hypothesis 1 predicted trait mindfulness would positively correlate to personal outcomes associated with subjective well-being. As can be seen in Table 3, our results supported Hypothesis 1. Trait mindfulness was positively correlated with positive outcomes, including efficacy/confidence ($\rho = .39$, $k = 32$), physical health ($\rho = .23$, $k = 57$), mental health ($\rho = .38$, $k = 118$), emotion regulation ($\rho = .40$, $k = 36$), and life satisfaction ($\rho = .36$, $k = 38$), and inversely correlated with negative outcomes including perceived life stress ($\rho = -.43$, $k = 55$), negative emotions ($\rho = -.40$, $k = 38$), anxiety ($\rho = -.34$, $k = 66$) and depression ($\rho = -.38$, $k = 85$). The 80%CV did not include zero for any of the outcomes (with the exception of physical health), which means that the correlation between trait mindfulness and these correlates is generalizable. It is important to note, however, that although the point estimate for mental health is positive, the credibility interval is quite wide, suggesting the presence of a moderator.

Hypothesis 2 predicted trait mindfulness would positively correlate with workplace functioning and professional outcomes. In particular, we expected to see positive correlations between trait mindfulness and positive work-related constructs like job satisfaction, performance, work effort, and interpersonal relations, and negative correlations between trait mindfulness and negative work outcomes like burnout and perceived job stress. As can be seen in Table 4, our results support this hypothesis. Mindfulness was associated with positive outcomes, including job satisfaction ($\rho = .29$, $k = 18$), job performance ($\rho = .34$, $k = 12$), and interpersonal relations ($\rho = .31$, $k = 26$), and inversely associated with negative outcomes including burnout ($\rho = -.48$, $k = 20$), and work withdrawal ($\rho = -.17$, $k = 4$). As hypothesized, work effort was positively correlated with trait mindfulness ($\rho = .16$, $k = 12$) and perceived job stress was negatively correlated with trait mindfulness ($\rho = -.31$, $k = 14$), but the credibility intervals for these relationships included zero suggesting the presence of a moderator.

Hypothesis 3 predicted trait mindfulness would explain incremental variance in job performance over and above that which could be explained by work effort. We used meta-regression to test this hypothesis. First, we regressed work effort on job performance using the relevant effect size ($\rho = .18$) reported in Cooper-Hakim & Viswesvaran (2005). In the second step, we added trait mindfulness. As can be seen in Table 5, trait mindfulness explained an additional 10% of variance in job performance over and above that which could be explained by work effort alone ($\Delta R^2 = .10$). As such, results support Hypothesis 3.

Hypothesis 4 predicted mindfulness would explain incremental variance in burnout over that which could be explained by perceived work stress. Using meta-regression, we first estimated the amount of variance in burnout that could be explained by perceived work stress using the relevant effect size reported in Lee & Ashforth (1996; $\rho = .48$), and then estimated the amount of incremental variance in burnout that could be explained by trait mindfulness. As can be seen in Table 6, trait mindfulness explained an additional 12% variance in burnout over that which could be explained by perceived work stress alone ($\Delta R^2 = .12$).