

RESEARCH ARTICLE

Accept the Stress? Examining the Role of Emotion Regulation Strategies to Explain the Relationship between Mindfulness and Burnout

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The negative association between mindfulness and burnout has been extensively demonstrated in the literature, but the mechanisms of this relationship are unclear. This study examined the mediating role of seven emotion regulation strategies between dispositional mindfulness and burnout. Data were collected from a professionally diverse German population via an online survey and analysed using mediation analysis. Results showed that dispositional mindfulness was inversely related to burnout symptoms, reinforcing previous research results. Mediation analysis showed that reduced rumination and increased acceptance partially mediated this relationship. Other strategies did not significantly mediate the relationship. The findings demonstrate that acceptance and reduced rumination may act as mediating mechanisms in the relationship between mindfulness and burnout. Future research should examine whether acceptance and reduced rumination pose distinct mechanisms of action.

Keywords: mindfulness, burnout, emotion regulation, mediation analysis

Over the past decade, burnout-related absence in the German workforce has doubled (Meyer et al., 2020). With the onset of the COVID-19 pandemic, a new wave of stressors was introduced (Abramson, 2022). In addition to pandemic-induced stress, the disruptive shift toward socially distanced workspaces imposed new job demands while stifling access to key resources such as social support. Given this limited access to external resources, personal resources became crucial to cope with increased stressors (Bakker & Demerouti, 2016).

Several reviews have highlighted the efficacy of mindfulness as one such resource (Fendel et al., 2021; Khoury et al., 2015; Luken & Sammons, 2016). However, the underlying mechanisms of mindfulness remain unclear (Gu et al., 2015). Developing research has proposed a range of models aiming to integrate empirical findings into the mechanisms of mindfulness (e.g., Aizik-Reebs et al., 2021; Hölzel et al., 2011; Shapiro et al., 2006; Vago & David, 2012). While such models diverge in their focus and structure, they converge when considering the way individuals relate to and deal with their emotions (i.e., emotional regulation). Specifically, emphasising stronger attention to and greater acceptance of direct experience regardless of the perceived valence of underlying emotions. As such, empirical literature

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suggests that emotional regulation plays a critical role in the effects of mindfulness.

Aiming to better understand the relationship between emotion regulation and mindfulness, studies have examined the mediating role of distinct emotion regulation strategies (Desrosiers et al., 2013; Josefsson et al., 2017; Ma & Fang, 2019). While researchers have identified several strategies, findings remain limited in their scope due to only examining one or two strategies simultaneously (Aldao et al., 2010). This selective approach risks missing higher-order patterns, which may better reveal which strategies mediate the effect of mindfulness on burnout. Therefore, research examining multiple emotion regulation strategies concurrently may provide a clearer understanding of how the effect of mindfulness on burnout is mediated.

Originally conceptualised as a chronic stress syndrome specific to healthcare workers (Freudenberger, 1975; Maslach, 1976), burnout is found across professions with the World Health Organisation (2019) adapting it in the ICD-11 as a general occupational phenomenon. Beyond characteristic feelings of exhaustion, job-related cynicism, and diminished personal efficacy, burnout has been associated with various mental and physical health problems ranging from depression and substance abuse to all-cause mortality (Ahola, 2007; Ahola et al., 2010).

The Job Demands-Resources (JD-R) framework (Bakker et al., 2014) has emerged as the predominant theory in identifying determinants and mechanisms of burnout. It proposes two key factors: *job demands* (i.e., work aspects that induce an ongoing physiological or physical strain) and *job resources* (i.e., work aspects that are functional for achieving work-related goals and mitigate job demands). According to the model, a prolonged mismatch of job demands outweighing job resources causes repeated failure to cope with said demands, and, over time, burnout (Demerouti & Nachreiner, 2019). More recent conceptions of the JD-R framework (Bakker & De Vries, 2021; Bakker & Demerouti, 2016) include the importance of *personal resources* (i.e., individual attributes affecting the perception of and interaction

with job demands and resources; Huang et al., 2016). In light of this, mindfulness has been identified as a key personal resource (Luken & Sammons, 2016).

Mindfulness, a concept originating from Buddhist traditions thousands of years ago, has gained significant recent empirical attention. While only ten papers with titles containing "mindfulness" were published in 2000, this number rose to over 1300 by 2023 (American Mindfulness Research Association, 2024). This empirical interest sparked by interventions like Mindfulness-Based Stress Reduction (Kabat-Zinn, 1982) catalysed the discovery of mindfulness's extensive links to positive health outcomes. Consequently, mindfulness emerged as a distinct concept untethered from its Buddhist origins (Brown et al., 2015; Valerio, 2016), defined in the literature as "paying attention, intentionally, on purpose, in the present moment, non-judgementally" (Kabat-Zinn, 1994, p. 4).

Longitudinal studies have shown that dispositional mindfulness, a trait inherent to every human to varying extents, can be positively enhanced through meditative practice (Kiken et al., 2015; Truong et al., 2020). This positive effect of meditative practice on dispositional mindfulness is well-documented (Bartlett et al., 2019; Gu et al., 2015; Vonderlin et al., 2020). As such, dispositional mindfulness appears to be a stable trait over time without intervention (Truong et al., 2020), but is highly responsive to change following mindfulness-based interventions (Burzler et al., 2019; Khoury et al., 2013).

In line with robust evidence showing its mitigating effect on burnout (Li et al., 2019; Luken & Sammons, 2016; Madigan et al., 2023; Vonderlin et al., 2020), dispositional mindfulness has been postulated as a personal resource as per the JD-R model (Grover et al., 2017). However, the pathways of this relationship remain poorly understood, mirroring the unclear underlying mechanisms of mindfulness generally (Van Dam et al., 2018). Applying the JD-R framework to mindfulness, Grover et al. (2017) proposed that mindfulness affects both the direct perception of job demands as well as moderating their effect on perceived stress. Finding that the effect of mindfulness on perceived stress was significantly

larger than the reduction in perceived emotional demands, the authors concluded that the primary change remains in the way mindful individuals self-regulate in the face of these emotional demands.

These findings align with theoretical propositions that changes in emotion regulation are a central mechanism of mindfulness (Raugh & Strauss, 2023). Emotion regulation refers to “processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions” (Gross, 1998b, p. 275). Emotion regulation is often initiated by a perceived disparity between an emotional goal state and the actual or projected state (McRae & Gross, 2020). Individuals then apply certain emotion regulation strategies (i.e., distinct and concrete approaches) to a specific situation to resolve that disparity (Gross, 2014). Depending on the primary point in the emotion-generative process that a strategy is applied, Gross’s predominant process model (1998a) distinguishes five types of strategies: situation selection, situation modification, attention deployment, cognitive change, and response modification.

While research traditionally focused on the conscious, explicit application of certain strategies, recent literature has shifted toward more automatic, implicit tendencies in strategy selection (Braunstein et al., 2017; Gyurak et al., 2011). No strategy can be termed inherently adaptive or maladaptive due to its contextual nature, but their effect over many contexts can indicate tendencies (Gross, 2015). For example, a situation selection strategy like avoidance might be adaptive when choosing to circumvent a specific harmful situation, yet an undifferentiated application lies at the core of anxiety disorders (Ottenbreit et al., 2014). Considering this, the habitual use of certain strategies has been associated with profound implications for long-term mental health, psychopathology, and subjective well-being (Aldao et al., 2010; Aldao & Nolen-Hoeksema, 2012b, 2012a; Martins et al., 2016). This enables the distinction of generally adaptive or maladaptive strategies.

Given that mindfulness is proposed to influence emotion regulation through automatic, implicit

processes (Raugh & Strauss, 2023), the habitual tendencies around emotion regulation strategies may play a vital role in explaining the mitigating effect on burnout, as found by Grover et al. (2017). However, previous studies examining this pathway (e.g., Josefsson et al., 2017; Salvarani et al., 2019) have operationalised emotion regulation via the Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2008), which assesses shortcomings in the faculties required for emotion regulation instead of specific strategies, leaving a gap in the research.

A commonly used, validated list of strategies, the Heidelberg Form for Emotion Regulation Strategies (HFERS; Izadpanah et al., 2019) includes eight strategies: cognitive reappraisal, acceptance, problem-solving, rumination, suppression of emotional expression, suppression of emotional experience, avoidance, and social support. However, the social support strategy may be excluded in studies examining specific personal strategies due to its external nature.

Several strategies are considered adaptive within the literature. Cognitive reappraisal refers to an intentional shift in mental evaluations to change an emotional state (Uusberg et al., 2019). Due to its positive associations with mental health, it is considered an adaptive strategy (Hu et al., 2014). Acceptance refers to openly accepting a situation, one’s abilities to influence or one’s emotions responding to said situation (McRae & Gross, 2020). As a core mechanism of the third wave of behavioural therapies (Hayes, 2004) and predictor of reduced psychopathology (Aldao & Nolen-Hoeksema, 2012b), acceptance is also seen as adaptive. Problem-solving refers to attempts to modify a situation or its consequences to manipulate its emotional impact (Aldao et al., 2010). Its habitual use negatively correlates with psychopathology (Aldao et al., 2010), making it adaptive. Additionally, numerous strategies are considered maladaptive within research.

Rumination refers to a recurring focus on thoughts and feelings regarding an emotional situation, its causes, and consequences (Peña-Sarrionandia et al., 2015). As a proposed mechanism of depression, it can be classified as maladaptive

(Aldao et al., 2010). Suppression strategies are generally seen as maladaptive (Aldao et al., 2010; Purdon, 1999). Izadpanah et al. (2019) include both a behavioural (suppression of emotional expression) and a cognitive (suppression of emotional experience) component. Avoidance refers to the proactive circumvention of an emotionally charged situation (Naragon-Gainey et al., 2017). While this may be adaptive if negative consequences outweigh positive ones, this strategy is often used for short-term relief at significant long-term cost, as in social anxiety disorder (Gross, 2015; Peña-Sarrionandia et al., 2015), making it generally maladaptive.

Taken together, the relationship between increased dispositional mindfulness and reduced burnout symptoms has been well documented in the empirical literature (Khouri et al., 2015; Luken & Sammons, 2016). Yet, the underlying mechanisms remain unclear. Given the theoretical framework of emotion regulation's effect on mindfulness and its association with adaptive outcomes, it may be that mindful individuals employ more adaptive emotion regulation strategies. Possibly, an individual's improved ability to cope with job demands through such strategies could thereby mitigate burnout. However, this assumption has yet to be tested empirically. Therefore, this study aims to explore the associations of dispositional mindfulness and the habitual application of adaptive and maladaptive emotion regulation strategies, as well as their role in explaining the effect on burnout. Expanding on the literature that proposes mindfulness as a personal resource, this study hypothesises the following:

Hypothesis 1a: The relationship between mindfulness and burnout is partially mediated by increased habitual use of adaptive emotion regulation strategies.

Hypothesis 1b: The relationship between mindfulness and burnout is partially mediated by decreased habitual use of maladaptive emotion regulation strategies.

Methods

Participants

A convenience sample of 178 professionals were

recruited via email and social media. All participants gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki of 1975, revised in 2013. A total of 134 participants completed the survey. Of those, 19 were excluded because they indicated working < 20 hours per week, two were excluded due to too many missing items, and one was excluded due to being self-employed. The resulting sample ($N = 112$) consisted of 61 women (55%), 48 men (43%), and two non-binary individuals (2%). One participant (1%) did not indicate their gender. The average age was 43 ($M = 43.08$, $SD = 13.22$), with participants ranging from 21 to 65 years old. Participants predominantly worked in medium (50 to 500 members; 43%) or large (> 500 members; 47%) organisations in diverse sectors.

Instruments

Questionnaire. The data was originally collected as part of the author's Bachelor's thesis. Participants answered a standardised online survey via *Unipark* comprising questions related to participant demographics and validated measures concerning habitual emotion regulation, dispositional mindfulness, burnout, work engagement, and resistance to change. All items were presented in German. Only demographics, dispositional mindfulness, burnout, and emotion regulation are relevant to this study.

Emotion regulation. The HFERST (Izadpanah et al., 2019) was used to assess habitual emotion regulation. The 28-item instrument builds on common emotion regulation questionnaires (Garnefski & Kraaij, 2007; Gratz & Roemer, 2008; Gross & John, 2003) to assess the habitual use of eight emotion regulation strategies, forming eight subscales. The total of 28 items are divided into two sections: The social support subscale comprising one item ("I often talked about my emotions with my partner or my closest friends") was excluded, which leaves seven subscales that address the emotion regulation strategies defined above: *cognitive reappraisal* - 4 items (e.g., "When I felt bad, I tried to see the good aspects of a situation"); *acceptance* - 3

items (e.g., "When I could not change something, I accepted the situation as it was"); *problem-solving* - 4 items (e.g., "When problems arose, I thought carefully about how best to deal with the situation"); *avoidance* - 3 items (e.g., "I preferred to avoid situations that could trigger negative feelings in me"); *rumination* - 4 items (e.g., "I found myself thinking over and over about something that made me angry or sad"); *suppression of emotional expression* - 4 items (e.g., "I mostly hid physical signals of my feelings") and *suppression of emotional experience* - 4 items (e.g., "I tried not to allow negative emotions in the first place"). Participants were asked to reflect on their experience since the onset of the COVID-19 pandemic and indicate how well the statements applied to them on a 5-point Likert scale with 1 representing "Did not apply at all" and 5 representing "Applied fully". Izadpanah et al. (2019) report acceptable to good subscale retest reliabilities ($.57 < r < .75$) and better criterion validity than the underlying scales in their validation study. In the present study, all subscales showed good internal consistencies ($.81 < \alpha < .89$).

Dispositional Mindfulness. The most commonly used measure of self-reported mindfulness (Mattes, 2019), the Five Facet Mindfulness Questionnaire (Baer et al., 2006), was used in its 23-item German short form (Burzler et al., 2019). The measure includes an aggregate scale of dispositional mindfulness consisting of five subscales, each addressing one facet. These facets are: Describing (4 Items, e.g., "I am good at putting my feelings into words"), Acting with Awareness (4 Items, "Actaware", e.g., "I find it difficult to stay focused on what is happening in the present moment"), Nonjudging of inner experience (4 Items, "Nonjudge", e.g., "I tell myself not to think the way I think"), Nonreacting to inner experience (7 Items, "Nonreact", e.g., "I can be aware of distressing thoughts, but I don't have to react to them") and Observe (4 Items, e.g., "I notice smells and scents of things"). Participants were asked to reflect on their experience in the same timeframe and indicate how well the statements applied to them on a 5-point Likert scale, with 1 representing "Did not apply at all" and 5 representing "Applied fully". Items on Actaware

and Nonjudge were inverted in the analysis since they were negatively phrased. The scale showed acceptable internal consistency ($\alpha = .85$).

Burnout. Burnout was measured using the 16-item Oldenburg Burnout Inventory (Demerouti et al., 2003), since it is the only psychometrically robust measure assessing the core dimensions of burnout (Shoman et al., 2021). The items are equally divided into two subscales: exhaustion (e.g., "There are days when I feel tired before I arrive at work") and disengagement from work (e.g., "It happens more and more often that I talk about my work in a negative way"). Participants were asked to reflect on their experience in the same timeframe and indicate how well the statements applied to them on a 5-point Likert scale, with 1 representing "Did not apply at all" and 5 representing "Applied fully". For each subscale, four items are phrased positively and four negatively. Items were reversed so that a higher scale score indicates a higher burnout level. Further calculations only include the total scale. The scale showed good internal consistency ($\alpha = .90$).

Statistical Analysis. The data were analysed using IBM SPSS Statistics Version 28.0, with the alpha-level set at .05. Mediation analyses were conducted with Model 4 of Hayes' PROCESS-Macro (Version 4; 2018). Sample data was assumed to resemble a normal distribution, as the sample size ($N = 112$) exceeded the threshold of $N = 30$ postulated by Field (2018). Total and subscales for burnout and dispositional mindfulness were calculated using averages of the individual item scores. After calculating descriptive statistics and intercorrelations, the hypotheses were assessed using regression and mediation analyses. All regressions were tested for multicollinearity. Since the variance inflation factor did not exceed 2.5 in any analysis, multicollinearity was not expected (Johnston et al., 2018).

Mediation analyses were conducted following the approach described by Hayes (2018). To test the mediating effect of one or more variables in the relationship between a predictor and a criterion, this approach determines an indirect effect formed by the product of the regressions of the mediator on the

predictor (*path a*) and the criterion on the mediator (*path b*), then referred to as *path ab* (Igartua & Hayes, 2021). From the distribution of significance levels of the computed indirect effects, a 95%-Confidence Interval (CI) is formed. One can conclude a significant indirect effect if zero does not lie within that CI. Following the modern approach, this significant indirect effect determines a mediation, the more precise nature of which is then classified based on further criteria (Zhao et al., 2010).

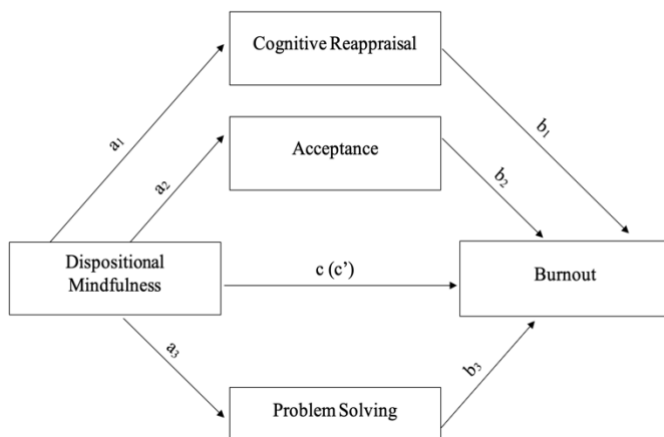


Figure 1. Model of Parallel Mediation

In the case of parallel mediation, as was used in the present study, multiple mediators are concurrently included. For each *path a*, a regression of the corresponding mediator on the predictor is then calculated. *Path b* of each mediator results from a joint regression of the criterion on the predictor and the mediators. The indirect effect for the parallel mediation model is then calculated as the sum of the individual indirect effects for each mediator ($a_1 \times b_1$; $a_2 \times b_2$, ...; Baltes-Götz, 2017).

Results

Descriptives

Descriptive statistics and correlations for age, gender, emotion regulation strategies, dispositional mindfulness, and burnout are depicted in Table 1. Age had significant, weak negative correlations with rumination ($r = -.22$, $p = .022$) and burnout ($r = -.20$, $p = .034$), and a moderate positive correlation with

acceptance ($r = .33$, $p < .001$). Gender had weak, but significant correlations with cognitive reappraisal ($r = .23$, $p = .019$) and suppression of emotional expression ($r = -.19$, $p = .047$). Dispositional mindfulness was not associated with age or gender.

Correlations Between Study Variables

There were several correlations among the emotion regulation strategies. Acceptance had considerable significant associations with rumination ($r = -.44$, $p < .001$), avoidance ($r = -.24$, $p < .001$), cognitive reappraisal ($r = .34$, $p < .001$), and problem-solving ($r = .23$, $p = .014$). Suppression of emotional expression was highly associated with suppression of emotional experience ($r = .67$, $p < .001$) and moderately associated with avoidance ($r = .33$, $p < .001$). Dispositional mindfulness was significantly associated with lower levels of burnout ($r = -.43$, $p < .001$).

Test of Hypotheses

Two parallel mediation models were run to test if the association of dispositional mindfulness and burnout was mediated by changes in adaptive and maladaptive emotion regulation, respectively.

While the model of parallel mediation via adaptive emotion regulation strategies (Table 2, Figure 2) returned a significant total indirect effect $b = -0.19$ ($SE = .08$), 95%BCa CI [-0.37, -0.06], only acceptance contributed substantially with an indirect effect $b = -0.17$ ($SE = .07$), 95%BCa CI [-0.31, -0.05]. Dispositional mindfulness had significant positive associations with all three adaptive emotion regulation strategies. However, acceptance was the only significant predictor in the joint regression of burnout on dispositional mindfulness and the strategies ($b = -0.28$, $p < .001$), so cognitive reappraisal and problem-solving added negligible incremental effects.

The model of parallel mediation via maladaptive emotion regulation strategies (Table 3, Figure 3) did not return a significant total indirect effect, $b = -0.06$ ($SE = .07$), 95%Bca CI [-0.20, 0.08]. Among the factors, rumination narrowly missed the level of significance, $b = -0.08$ ($SE = .08$), 95%Bca CI [-0.17, 0.00], while the others had negligible indirect effects. Dispositional

Table 1. Descriptive Statistics and Correlations

Variable	M	SD	Correlations										
			1	2	3	4	5	6	7	8	9	10	11
1 Age	43.08	13.22	-										
2 Gender	55% Female		-.14	-									
3 Rumination	3.3	0.83	-.22*	.15	(.75)								
4 Cognitive Reappraisal	3.12	0.78	.14	.23*	-.05	(.78)							
5 Acceptance	3.49	0.84	.33***	-.17	-.44***	.34***	(.73)						
6 Problem-solving	3.86	0.65	.00	-.09	-.04	.05	.23*	(.73)					
7 Supp. of emotional expression	3.19	0.86	-.12	-.19*	.09	.03	.15	.10	(.80)				
8 Supp. of emotional experience	2.58	0.78	-.11	-.12	-.06	.14	.11	.07	.67***	(.73)			
9 Avoidance	2.9	0.85	-.07	.16	.13	.13	-.24*	-.10	.14	.33***	(.77)		
10 Dispositional Mindfulness	3.45	0.51	.05	.18	-.27**	.25**	.36***	.23*	-.14	-.05	-.34***	(.85)	
11 Burnout	2.64	0.71	-.20*	.08	.30**	-.25**	-.46***	-.15	-.08	-.10	.15	-.43***	(.90)

Means, Standard Deviations, Internal Consistencies, and Correlations of all Variables

Note: N = 112; Diagonal represents Cronbach's Alpha; For Gender: 1 = male, 2 = female, * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed)

mindfulness was significantly associated with reduced habitual use of avoidance ($b = -0.58, p < .001$) and rumination ($b = -0.44, p < .001$), but not with the suppression strategies. In the joint regression of burnout on dispositional mindfulness and maladaptive emotion regulation strategies, only rumination added significant prediction ($b = 0.17, p < 0.05$).

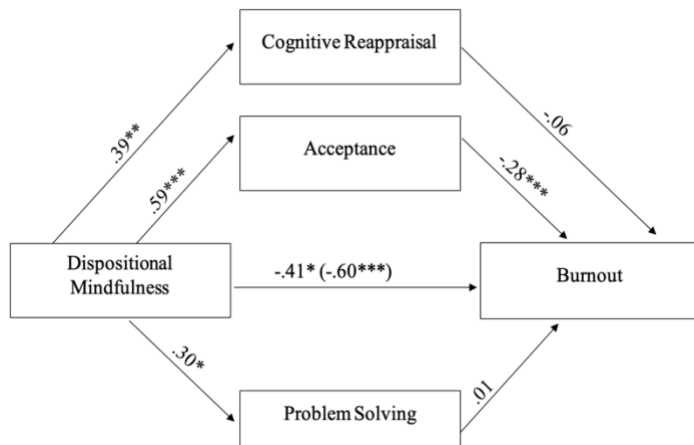


Figure 2. Model of Parallel Mediation via adaptive emotion regulation strategies

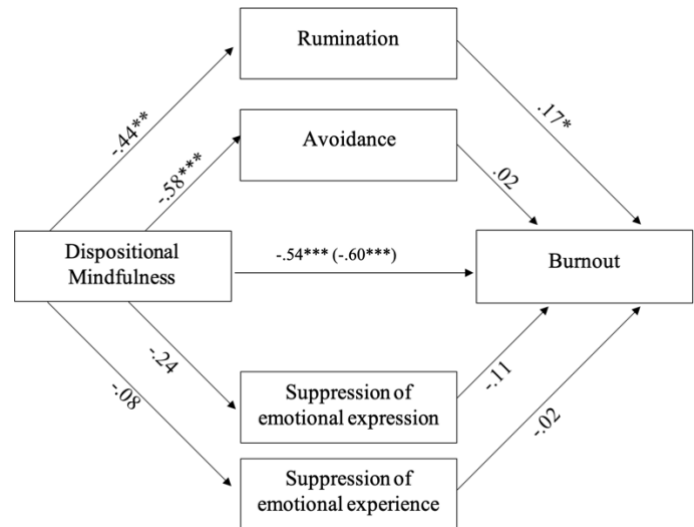


Figure 3. Model of Parallel Mediation via maladaptive emotion regulation strategies

mediating effects. Therefore, Hypotheses 1a and 1b were partially supported. However, rumination and acceptance were also strongly interrelated. Based on these findings, an additional analysis was performed to determine the degree of overlap between the two mechanisms.

Table 2. Total, Direct and Indirect Effects

	<i>b</i>	<i>SE</i>	<i>t</i>	Bootstrapping 95% BCa CI		<i>R</i> ²
				Lower	Upper	
Total Effect	-0.60	.12	-4.93***	-0.84	-0.36	.29***
Direct Effect	-0.41	.13	-3.25**	-0.66	-0.16	
Indirect Effect-Model	-0.19	.08		-0.37	-0.06	
Cognitive Reappraisal	-0.02	.04		-0.13	0.04	
Acceptance	-0.17	.07		-0.31	-0.05	
Problem-solving	-0.00	.03		-0.09	0.06	

$$F(4,107) = 11.03, p < .001$$

Total, direct and indirect effects of dispositional mindfulness and adaptive emotion regulation on Burnout

Note: ** $p < .01$, *** $p < .001$

Since only two strategies played a relevant role in the association between dispositional mindfulness and burnout, these results suggest that their association is not mediated by an overall shift in adaptive and maladaptive emotion regulation strategies. Still, both lower levels of a maladaptive strategy (in rumination) and higher levels of an adaptive strategy (in acceptance) showed significant

Additional Analysis

A model of parallel mediation via acceptance and rumination returned a significant indirect effect slightly larger than acceptance alone, ($b = -0.19$ ($SE = .07$), 95%BCa CI [-0.33, -0.07]), however, only acceptance contributed significantly ($b = -0.16$ ($SE = .07$), 95%BCa CI [-0.31, -0.05]).

Table 3. Total, Direct and Indirect Effects

	<i>b</i>	<i>SE</i>	<i>t</i>	Bootstrapping 95% BCa CI		<i>R</i> ²
				Lower	Upper	
Total Effect	-0.60	.12	-4.93***	-0.84	-0.36	.24***
Direct Effect	-0.54	.13	-4.07***	-0.80	-0.28	
Indirect Effect - Model	-0.06	.07		-0.20	0.08	
Rumination	-0.08	.03		-0.17	0.00	
Supp. of emotional Expression	0.02	.02		-0.03	0.10	
Supp. of emotional Experience	0.00	.02		-0.03	0.06	
Avoidance	-0.01	.05		-0.12	0.10	
$F(5,106) = 6.64, p < .001$						

Total, direct and indirect effects of dispositional mindfulness and maladaptive emotion regulation on Burnout

Note: *** $p < .001$

Discussion

This study examined the role of adaptive and maladaptive emotion regulation strategies and their relationship to dispositional mindfulness and burnout. In line with previous studies (Fendel et al., 2021; Luken & Sammons, 2016; Vonderlin et al., 2020) and its proposed role as a personal resource in the JD-R context, dispositional mindfulness was strongly associated with lower levels of burnout. While dispositional mindfulness was generally associated with higher levels of adaptive and lower levels of maladaptive strategies, parallel mediation models suggest that this broader shift in emotion regulation selection is not a mediating factor, instead pointing to acceptance and rumination specifically as mechanisms.

Notably, both suppression strategies (suppression of emotional expression and suppression of emotional experience) were not significantly associated with dispositional mindfulness contrary to theoretical models that propose suppression as the opposite of mindful emotion regulation (Chambers et al., 2009), implying a negative correlation.

However, these results resemble Brockman et al. (2017) which reported no relationship between the level of mindfulness and the use of suppression on any given day as part of a diary study. This inconsistency between theory and evidence could point to shortcomings in the current operationalisation of suppression, especially as implicit or habitual suppression might not reach conscious recognition (Yao & Xu, 2024) and therefore be inaccessible by self-report questionnaires.

Examining the strategies separately in simple mediation models returned insignificant effects for five of the seven emotion regulation strategies. However, results indicated that the habitual use of acceptance and, to a lesser extent, rumination played a significant role in the relationship between dispositional mindfulness and burnout. Rumination significantly mediated the association when tested as a sole mediator but added little incremental contribution to acceptance when examined in conjunction implying that both are associated with a joint mechanism.

Rumination, which is by definition always concerned with past or future events, contrasts

sharply with a central part of the definition of mindfulness: non-judgmental attention to the present moment. Acceptance, on the other hand, corresponds precisely to the non-judgmental approach to internal and external experience that mindfulness promotes. It can therefore be argued that if less weight is attached to the experienced stressors and the resulting emotions by accepting them in a non-judgmental way instead of continuously resurfacing them in the context of rumination, their effect on burnout may decrease. In terms of the JD-R framework, it is implied that mindfulness, acting as a personal resource, moderates the impact of job demands by mitigating the ongoing effects of stressors beyond their direct experience. This conception is in line with the Buddhist metaphor of the “two arrows”, which holds that individuals experiencing inevitable adverse stimuli - the “first arrow” - tend to add to their suffering through the mental processes of rumination, identification and reification - the “second arrow” (Lewis & Rozelle, 2016).

However, the substantial remaining direct effect of dispositional mindfulness on burnout indicates that other mechanisms are salient in this relationship. As emotion regulation remains the key mechanism proposed to explain the effects of mindfulness, these effects may include different aspects of emotion regulation. Two of these aspects are: emotion regulation *self-efficacy*, which is the perceived ability to achieve emotion regulation goals (Ford & Gross, 2018; Goldin et al., 2012), and emotion regulation *flexibility*, which is the ability to select and implement the right strategies dependent on the context (Barnow et al., 2020).

Implications for Practice and Future Research

The present study adds to the growing body of work associating mindfulness with positive outcomes in mental health, specifically in stress-related domains. Furthermore, the extensive associations with most of the examined emotion regulation strategies support the proposed commonalities between the two concepts.

In addition, the current study illustrates the

demand for more research into the mechanisms of mindfulness, as theory and results did not always line up. This includes focused examinations of its relationship with the implicit and explicit use of suppression strategies through experience sampling, as well as studies exploring acceptance and rumination as parallel mediators to determine if they are in fact two sides of one joint mechanism. Previous studies assessing rumination as a mediator of dispositional mindfulness often did not measure acceptance (e.g., Ciesla et al., 2012; Josefsson et al., 2017; Jury & Jose, 2019; Royuela-Colomer & Calvete, 2016). The present findings suggest that revisiting these study designs with both strategies in conjunction might present further insights. This becomes especially relevant considering the associations that acceptance and rumination have with other proposed mediators, like positive affect (Aldao & Nolen-Hoeksema, 2012b; Malinowski & Lim, 2015).

On the practical side, this study can only reiterate what so many others have already prescribed. While the mechanisms of mindfulness are the subject of discussion, the effects are not. In times of elevated stress levels and increasing job demands, developing personal resources becomes crucial to maintaining mental health, and practicing mindfulness may help realise that ruminating on workplace stressors does not aid in their handling. Instead, accepting extrinsic factors and one's associated feelings for what they are, nothing more and nothing less, can strip them of their impact.

Limitations

There were some limitations inherent to this study. First, since data were collected via self-reports, problems with this type of survey arise (see Chan, 2009). For example, intentional response behaviour and different interpretations of questions cannot be ruled out. Further, while the HFERST aims to measure habitual emotion regulation, certain items are phrased more generically (e.g., “I tried not to allow negative emotions in the first place”), potentially leading to artefacts like the observed non-

association of mindfulness and suppression.

Furthermore, the cross-sectional design did not allow for causal interpretations. However, meta-analyses of randomised control trials have found increases in dispositional mindfulness to mediate the effects of Mindfulness-Based Interventions on burnout and other outcomes (Gu et al., 2015; Vonderlin et al., 2020). It can therefore be reasonably assumed that higher dispositional mindfulness causes lower burnout and not vice versa. Still, the cross-sectional links between trait measures of mindfulness and emotion regulation in the present study could also point to conceptual overlap instead of a mediation. A longitudinal design exploring sustained changes in habitual emotion regulation following a mindfulness intervention could substantiate the conclusions. Beyond trait measures, a more granular exploration of state mindfulness in the context of the JD-R model might help understand the temporal role of mindfulness in the process, for example by applying an experience sampling framework during especially demanding job events or fundamental job resource changes (e.g., organisational change processes).

Second, analyses were conducted based on a convenience sample with $N = 112$. While gender and age distributions approximated those of the general population, the share of participants with an academic degree (47%) exceeded that of the general population (22%; Autorengruppe Bildungsberichterstattung, 2020) considerably limiting generalisability. Furthermore, the small sample size might have led to power issues which in turn cause minor existing effects to be discarded as insignificant. A replication with a larger, random sample could remedy these issues.

Lastly, recent studies have reported that some mechanisms of mindfulness differ between those with meditation experience and the general population, especially on a facet level (Bednar et al., 2020; Burzler et al., 2019). As this study did not record meditation experience, further research should aim to replicate the reported associations among populations of varying meditation experience to develop a better understanding of the way practice

changes these mechanisms.

Conclusions

This study expands on the growing body of research demonstrating the associations between dispositional mindfulness and burnout by pointing out the salience of acceptance and rumination as potential mechanisms. It illustrates the broad impact of mindfulness on habitual emotion regulation - increasing the use of adaptive and decreasing the use of maladaptive strategies - with the important exclusion of suppression strategies remaining unaffected. Results are broadly consistent with the theoretical and empirical propositions of emotion regulation as a central mechanism of mindfulness but point towards various implications for future research. These include studies investigating the relationship between rumination and acceptance in this context, the counterintuitive noncorrelation of suppression strategies and mindfulness, and further mediation studies examining other facets of emotion regulation.

Conflicts of Interest

The author has no conflicts of interest to declare.

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