RESEARCH   **Open Access**

Does mindfulness matter on employee outcomes? Exploring its effects via perceived stress

Ilgin Sentin[1] , Selin Metin Camgoz[1]* , Pinar Bayhan Karapinar[1] , Eren Miski Aydin[1] and Ozge Tayfur Ekmekci[1]

Abstract

Background This study investigates the relationships between mindfulness, employees' well-being, and intentions to quit their jobs and further examines the mediating role of perceived stress in these relationships. Drawing on the Job Demand-Resources model, we aim to contribute to understanding how mindfulness can impact employee well-being and turnover intentions in a non-Western organizational setting.

Methods A cross-sectional survey study was conducted with 205 full-time white-collar employees. The study used an online questionnaire consisting of the Perceived Stress Scale, the Mindful Attention Awareness Scale, the Intention to Quit Scale, and the Employee Well-Being Scale. The data were analyzed using a full-latent model with structural equation modeling to investigate the relationships between the variables.

Results The findings indicate that mindfulness is crucial in influencing employees' turnover intentions and well-being through perceived stress levels. Mindfulness is associated with lower levels of perceived stress, which in turn is positively linked to employee well-being and negatively linked to turnover intentions.

Conclusions This study underscores the significance of mindfulness in the workplace, particularly in non-western organizational settings. By promoting mindfulness, organizations can potentially enhance employee well-being and reduce turnover intentions, fostering a more positive and productive work environment. The implications of these findings suggest that mindfulness interventions could be beneficial for organizations aiming to improve employee mental health and retention.

Keywords Mindfulness, Workplace mindfulness, Employee Well-being, Employee turnover, Stress mediation

*Correspondence:
Selin Metin Camgoz
selinm@hacettepe.edu.tr
[1]Department of Business Administration, Hacettepe University,
Beytepe, Ankara 06800, Turkey

In today's fast-paced and dynamic workplace, the interplay between employee well-being and organizational outcomes has gained significant attention from researchers and practitioners alike. Amid rising levels of perceived stress and turnover intentions, organizations increasingly seek strategies to foster resilience, employee well-being, and mental health. This is evidenced by the results of the American Psychological Association (APA) 2022 Work and Well-being Survey, which reveals that a majority of employees value and seek out workplace mental health support (https://www.apa.org/pubs/reports/ work-well-being/2022- mental health support). According to the same survey, 81% of employees believe that how businesses support mental health, and well-being will be essential to their future employment decisions. This trend also reflects broader recognition among EU institutions, policymakers, and organizations.

To address challenges related to workplace well-being, the current study focuses on mindfulness and, adopts the Job Demands-Resources (JD-R) model [1] as its primary theoretical framework. The JD-R model posits that employee well-being and organizational outcomes arise from the striking balance between job demands (e.g., stressors) and job resources (e.g., personal resources, support). Mindfulness, defined as "the situation of being attentive to and aware of what is taking place in the present with a nonjudging stance" [2] is positioned as a critical personal resource that enables employees to manage and cope with the job demands effectively, thereby enhancing well-being and reducing turnover intentions. Mindfulness practices could significantly contribute to creating a healthier and more sustainable community by cultivating awareness and fostering the skills necessary to address various challenges [3].

Previous literature recognized the prevalence and importance of mindfulness in various contexts including both clinical and nonclinical samples [4–7]. In occupational settings, recent meta-analyses [8] and integrative reviews [9, 10] have provided some evidence on linking mindfulness to enhance employee resilience [11], employee relationships, job satisfaction [12], employee engagement [13]; reduced turnover intentions [14] and stress [8, 15]. Despite these findings, there is still a gap in understanding the mechanism of how mindfulness influences employees' well-being and turnover intentions through workplace stress mechanisms [8, 14, 16–18].

The current study aims to contribute to the role of mindfulness in the workplace and to provide a theoretical and empirical examination of its effects on employee outcomes. We explore the intricate relationship between mindfulness, perceived stress, employee wellbeing, and turnover intention, shedding light on how cultivating mindfulness can serve as a shielding factor against the detrimental consequences of stress while promoting a healthier, more committed workforce. Employee well-being and turnover intention were selected as workplace outcomes due to their centrality to organizational sustainability [19]. Well-being- encompassing emotional, mental, and physical health [20] reflects employees' holistic functioning at work [21], while turnover intention is a critical predictor of organizational costs and productivity loss [22]. Within the JD-R model, we posit mindfulness as a personal resource that plays a crucial role in helping employees navigate job demands and mitigate stress, thereby improving well-being and reducing turnover intentions. Given that stress is a key driver of both employee well-being and intention to quit, understanding how mindfulness mitigates stress as a job demand and improves these outcomes is essential for developing effective workplace interventions.

The motivation for this study stems from two gaps in existing research. First, while the literature provides evidence regarding the studies examining the impact of mindfulness on mental health [23] and job attitudes [24, 25], they have not sufficiently examined the mechanisms based on the premises of the JD-R framework. Thus, we address this gap by investigating how mindfulness, as a personal resource, reduces perceived stress—a key mediator—to improve well-being and lower turnover intentions as important employee outcomes. By unpacking those associations, this study can guide practitioners about how mindfulness as a personal resource could mitigate the adverse effects of work stress and improve employee well-being.

Second, while mindfulness has been extensively studied in Western contexts [14], its applicability to non-Western populations remains underexplored. This study is conducted in a non-Western setting including a sample of Turkish employees working in various jobs. Given Turkiye's high-stress work environment, job insecurity and economic fluctuations, employee turnover rates [26, 27], long working hours, and work-life imbalances [28], mindfulness could serve as a valuable tool to enhance employee well-being and retention. Even though we do not explicitly adopt a cultural comparison perspective, this study provides insights into mindfulness in a non-Western work environment, broadening the application of the JD-R model across a different socio-cultural setting.

Theoretical framework and hypotheses development
Mindfulness and Well-being
Mindfulness, a concept rooted in ancient Buddhist traditions, has garnered significant attention in contemporary psychological research and practice. Broadly, the concept refers to the practice of deliberately focusing on the present moment with an attitude of openness, curiosity, and

acceptance [29] and without judgment [30]. In a more detailed definition, Glomb et al. [6] specify mindfulness as "*the process of paying attention to what is happening at the moment – both internal (thoughts, bodily sensations) and external stimuli (physical and social environment) – and observing those stimuli without judgment or evaluation, and without assigning meaning to them*".

Based on their historical roots, there are generally two methods for elaborating mindfulness: *Western* and *Eastern* [31, 32], and these two approaches complement each other. Eastern mindfulness, which has Buddhist roots, emphasizes the interconnectedness of the individual with their environment as well as the importance of present-moment awareness, acceptance, and nonjudgment [29]. On the other hand, Western mindfulness tends to be more individualistic and intrapersonal in focus and is concerned primarily with cognitive processes such as attention regulation, metacognition, and emotional control [2, 33]. Nevertheless, despite these differences, both Eastern and Western conceptualizations emphasize the importance of present-moment attention, a nonjudgmental and accepting stance toward one's experiences [32].

With mindfulness gaining popularity in Western psychology, empirical research to elucidate its mechanisms, applications, and integration into interventions is continuously growing [34, 35]. Writings on mindfulness in contemplative traditions have long maintained that there are several advantages of living completely in the present, one of which is improved well-being [31]. Moreover, mindfulness is seen both as a trait that varies in strength, across situations and persons [6, 12], and as a psychological state that differs from moment to moment within individuals [12, 36, 37]. Those characteristics make mindfulness researchers particularly interested in well-being due to mindfulness practices and why it has become so important in work settings.

As our outcome variable, well-being refers to the "*individuals' subjective and global judgment of whether they experience the relative presence of positive emotions, the relative absence of negative emotions, and satisfaction with their lives*" [20]. Scholars have evaluated well-being with two fundamental philosophical tenets: *subjective* (hedonism) and *psychological* (eudaimonia). While *subjective well-being* refers to the subjective assessment of one's own life in which positive and negative affect coexist [20], *psychological well-being* refers to positive psychological functionality [38] with an emphasis on knowing and accepting one's limits, having a life purpose, positive relationships with others, and a desire to improve oneself [39]. This study focuses on employee well-being based on the theoretical framework of Page and Vella-Brodrick's [40] model, which comprises subjective, psychological, and workplace well-being. Accordingly, employee well-being refers to "*the overall quality of an employee's experience and functioning at work*" [21, 41].

Concerning the effect of mindfulness on employee well-being, studies generally suggest that mindfulness has a range of beneficial effects on individuals and fosters a healthier and more productive work environment, directly contributing to employee well-being [2, 5, 15, 42]. For example, positive measures of employee well-being, such as job satisfaction [12, 43] and physical and psychological health [6], are positively correlated with employee mindfulness. Similarly, a negative association between employee mindfulness and unfavorable measures of employee well-being, such as emotional exhaustion [12] has been reported. Those studies argue that mindfulness reduces the duration of emotional reactions, which speeds up the process of recovering from unpleasant emotions [44]. Research also suggests that mindfulness interventions can reduce workplace stress and burnout [45], and improve job satisfaction and work engagement [13. A review by Allen et al. [46] revealed that mindfulness-based interventions lead to various positive outcomes, such as enhanced well-being, reduced stress, and increased subjective happiness. Similarly, in a recent meta-analysis by Lomas et al. [10], mindfulness was found to be associated with different measures of positive well-being, including job satisfaction [12, 43], professional quality of life [47], and subjective well-being [48]. Within the JD-R framework, we posit mindfulness serving as a resource that enables employees to reframe demanding situations at work, thereby preserving well-being. Based on the previous findings, we propose that:

H1 Mindfulness positively relates to employee well-being.

Mindfulness—Perceived stress—Employee well-being

One promising mediating mechanism that links mindfulness to employee well-being is perceived stress. Perceived stress refers to the degree to which situations in one's life are appraised as stressful. It is a subjective measure of stress considering an individual's perceptions and coping abilities [49]. It particularly arises when the individual appraises the situation as unpredictable, uncontrollable, and insufficient resources are available to cope with the problem [49–51].

Perceived stress is crucial because it affects how stressors impact an individual's mental and physical health. Empirical evidence has consistently revealed a negative association between self-reported mindfulness and perceived stress [52–55]. Studies on mindfulness have shown that it reduces stress and anxiety [44, 56] and improves emotion regulation [7].

The JD-R framework theoretically explains the connection between mindfulness and perceived stress [1]. JD-R, as a stressor−strain model [57], suggests that stress is a

reaction to an imbalance between demands on the individual and a person's available resources. Individuals' resources, such as personal values, personality traits, and other individual characteristics, can enhance their ability to cope with stress and mitigate the negative effects of job demands [58, 59]. Accordingly, mindfulness can be treated as a personal resource offering sufficient resources to employees [60–63] to manage job demands effectively. Thus, mindfulness can enable individuals to regulate their emotions, enhance their resilience, and increase their ability to recover from stressful situations more effectively. In studies including working employees, mindfulness and mindfulness-based practices have been associated with lower levels of stress [64, 65], burnout [66], and a decrease in negative mood states [67]. According to their experimental study, Axelsen et al. [68] showed that employees' reported stress levels significantly decreased when they used a daily 10-minute mindfulness application. Baer [34] also noted that mindfulness practices are inversely related to perceived stress, suggesting that mindfulness helps individuals appraise stressful situations less negatively. Thus, we propose the following:

H2 Mindfulness negatively relates to perceived stress.

Stress is a result of the interaction between an individual and their environment, and it is mediated by the individual's appraisal of the situation and their coping mechanisms. In this regard, mindfulness can be viewed as an effective coping mechanism that alters the appraisal process, reducing perceived stress and thus enhancing well-being. We propose that mindfulness reduces stress by altering cognitive appraisals in a way that mindful employees are less likely to perceive demands as threats and more likely to deploy adaptive coping strategies [55, 69]. This aligns with the JD-R model's emphasis on resources mitigating demand-related strain.

Several studies have explicitly examined the mediating role of perceived stress. For instance, Sharma and Rush [69] investigated the effects of a mindfulness intervention on employee stress and well-being. They reported that reductions in perceived stress significantly mediated the relationship between mindfulness and improvements in well-being. Some studies have revealed that mindfulness-based practices can promote psychological well-being by lessening distracting thoughts and behaviors [70] and relieving emotional disorders [71]. Similarly, the research of Weinstein et al. [55], which included four studies, demonstrated that mindful individuals have more non-threatening stress appraisals and report less use of avoidant coping strategies. In sum, those studies suggest that mindfulness alleviates perceived stress, which in turn enhances well-being. Thus, we propose the following:

H3 Mindfulness increases employee well-being via perceived stress.

Mindfulness and turnover intention

Turnover intention refers to an employee's willingness to quit their organization [22]. The literature shows that mindful employees, who can self-regulate their emotions and behaviors, tend to have lower turnover intentions [72, 73]. Theoretically, the JD-R model posits that insufficient resources exacerbate turnover intentions. As a resource, mindfulness equips employees to manage demands, thereby reducing stress-driven turnover [14].

The negative relationship between mindfulness and turnover intentions is found to be significant in studies conducted among call-center employees [14], service employees and managers [73], physical educators [62], civil servants [74], nurses [75], teachers [76] and in blue-collar workers in monotonous jobs [25]. Given the nonjudgmental nature of mindful individuals, scholars argue that mindful individuals are less likely to turnover since they can effectively manage stressful demands at work [73]. This is most likely because mindfulness helps individuals control their emotions and thoughts more effectively, improves self-awareness, and allows calmer responses to challenges [62, 77]. Thus, we propose the following:

H4 Mindfulness negatively relates to employees' turnover intentions.

Mindfulness, perceived stress, and turnover intention

Despite increasing evidence indicating the importance of mindfulness in the workplace and turnover intentions [17, 78], few studies have focused on the mediating mechanisms underlying the mindfulness-turnover intention relationship. This paper proposes that mindfulness affects employees' turnover intentions through its influence on perceived stress. Perceived stress is well recognized as an essential element determining employees' turnover intentions in various jobs [79, 80]. For instance, Gardulf et al. [79] reported that one-third of nurses, intending to leave their positions, identified psychological stress and demanding aspects of their work as the main reasons. Likewise, Tetteh et al. [80] revealed a negative relationship between perceived stress and turnover intentions in a sample of mining sector employees. When employees experience high levels of stress and perceive their work environment as excessively demanding, they are more inclined to quit their jobs.

Consistent with the abovementioned research, perceived stress is expected to mediate the relationship between mindfulness and turnover intentions such that mindfulness primarily affects perceived stress, mitigating employees' turnover intentions. The proposed

mechanism aligns with the stress and coping theory and job demands-resources (JD-R) model. Accordingly, individuals' appraisal of stressors and their ability to cope with them play crucial roles in determining their behavioral outcomes, such as turnover intentions. As a personal resource, mindfulness alters the appraisal process and, in turn, reduces perceived stress. In particular, individuals with higher levels of mindfulness may observe situations and evaluate cues in a nonjudgmental, nonreactive manner [56], leading to a more balanced appraisal of social situations. Similarly, in work settings, employees can cultivate resilience by decreasing emotional and physiological reactivity through mindfulness [74], which may mitigate the tendency to perceive ambiguous or challenging situations as inherently stressful. The JD-R model suggests that stress mediates the relationship between resources and behavioral outcomes. By reducing perceived stress, mindfulness diminishes employees' motivation to leave their jobs [79]. Hence, it is reasonable to expect that mindfulness might alleviate perceived stress and, thus, may result in lower levels of turnover intentions due to stress-related factors. So:

H5 Mindfulness decreases turnover intentions via perceived stress.

Method
Participants and procedure
The study data were collected from 205 full-time white-collar employees working in various organizations located in Türkiye. The vast majority of the participants were employed in the education, healthcare, and information technology sectors. The participants were approached using both convenience and snowball sampling methods. Accordingly, we first reached out to our professional network via email and, then requested them to further disseminate the survey link among their counterparts. The survey link contained a brief introduction about the study, the anonymity and confidentiality of the responses, and the information that the data will only be used for research purposes. Among the 295 participants who consented to complete the online survey, 205 valid responses were recorded after the incomplete responses were eliminated. Among those 205 participants, 56.6% were women, 63.1% were married, and the mean age of the participants was 34.51 years (SD = 10.4). The average tenure of the employee with their current employer was 5.46 years (SD = 7.59).

Measures
The questionnaire used in the present study included an online questionnaire to collect data comprising the variables of mindfulness, perceived stress, employee well-being, intention to quit, and demographics (gender, age,

education, working status, marital status). All the measures were based on existing scales. The scale of Intention to quit was translated into Turkish and back-translated into English, in line with the procedure of Brislin [81]. The translation and back translation were conducted by two Turkish bilingual academics. Before data collection, ethical approval was gathered from the Ethical Commission Board of Hacettepe University (Number: 35853172/ 433–2311), and all participants provided signed an online informed consent form before inclusion in the study.

Mindful attention awareness scale (MAAS)
Brown and Ryan [2] developed the 15-item self-report measure to assess the overall score for mindfulness. This scale is a brief, well-validated measurement tool with strong psychometric qualities and it has been widely used in previous studies with both clinical and non-clinical groups [82]. The sample items include "*I find myself pre-occupied with the future or the past*" and "*I find myself doing things without paying attention*". The response format was a 6-point Likert scale (1-Almost always to 6-Almost never) and aggregated through summing. Higher scores denote higher levels of mindfulness. The MAAS was adapted into Turkish by Özyeşil et al. [83]. The Cronbach's alpha reliability for this scale was 0.88.

Perceived stress scale (PSS)
The PSS, a self-report measure developed by Cohen et al. [49], assesses whether individuals perceive their lives as stressful and overwhelming. The scale includes two factors: perceived distress and perceived coping. The sample items include "*In the last month, how often have you felt that you were unable to control important things in your life?*", "*In the last month, how often have you felt nervous and stressed?*" and "*In the last month, how often have you felt that you were unable to control important things in your life?*". The response format was a 5-point Likert scale ranging from 0-never to 4-fairly often. Higher scores represent higher levels of perceived stress. The Turkish translation and the adaptation of the instrument were conducted by Çelik Örücü and Demir [84]. In the current study, the Cronbach's alpha was 0.82.

Intention to quit
We used Landau and Hammer's [85] Intention to Quit scale to assess employees' turnover intentions. This scale includes 3 items (e.g., "I *am seriouslythinking about quitting my job*", *and "As soon as I can find a better job, I will leave this company"*). The response format was a 5-point Likert scale (1- always to 5-never*)*. Higher scores represent not quitting the organization. The Cronbach's alpha reliability for this scale in the current sample was reported as 0.89.

Employee Well-Being scale (EWB)

We used Zheng et al.'s [41] 18-item Employee Well-being Scale to assess participants' well-being. The scale consists of three dimensions: life well-being (e.g., *"Most of the time, I do feel real happiness")*, workplace well-being (e.g., *"In general, I feel fairly satisfied with my present job")*, and psychological well-being (e.g., *"I generally feel good about myself, and I'm confident")*. The scale can be used as a single factor indicating employee well-being [41]. The response format was a 5-point Likert scale (1-completely disagree, 7-completely agree). Higher scores represent higher levels of well-being. The Turkish translation and adaptation of the instrument were conducted by Bayhan Karapinar et al. [86]. The Cronbach's alpha reliability for the scale was 0.96.

Data analysis

Preliminary analyses

The data were initially screened for the inspection of missing values, outliers, and normality. There were no outliers, and no missing values were reported. Univariate normality was assessed with skewness and kurtosis values. All the values were found to be less than 3.29 (in absolute terms), as Tabachnick & Fidell [87] suggested, indicating that the data distribution was normal.

Harman's one-way test was conducted to check for common method bias. The examination of the unrotated factor analysis revealed 9 factors with a variance of 28.3% extracted by the first factor, which is less than the acceptable limit of 50% [88]. As a result, no general factor was apparent. In addition to the Harman test, confirmatory factor analyses (CFA's) were conducted to evaluate the measurement model which, included both substantive latent factors and a method factor to account for common method variance. The method factor was specified to load onto all observed items to capture variance attributable to the self-report method. To further evaluate the necessity of the method factor, a nested model without the method factor was tested. The fit indices of the four-factor full-latent measurement model and the alternative model with an additional Method Factor were compared to assess the impact of common method variance. As a result, the fit indices of this alternative model were significantly worse, $(\Delta\chi^2 (2) = 11.99; p < .05)$, again refuting the existence of common method variance in the study.

As discussed previously, we conducted a confirmatory factor analysis (CFAs) to examine the factorial structure of the measurement items, in which all scale items were specified to load on their respective constructs (i.e. mindfulness, perceived stress, employee well-being, and intention to quit). The goodness-of-fit index (GFI), chi-square/df, comparative fit index (CFI), Tucker–Lewis index (TLI), and root-mean-square error of approximation (RMSEA), statistics by Kline [89] were scrutinized

to assess the adequacy of the measurement model. The second-order factors were specified for employee well-being and perceived stress scales, which were composed of three and two sub-factors respectively. Initial results indicated a relatively poor fit to data (X^2/df = 2.20; GFI = 0.68; CFI = 0.83; TLI = 0.82; RMSEA = 0.08). Factor loadings of two mindfulness items were below the 0.40 threshold, suggested by Tabachnick and Fidell [87]. When two items were removed, the model improved substantially (X^2/df = 1.92; GFI = 0.89; CFI = 0.90; TLI = 0.87; RMSEA = 0.06). All factor loadings were found to be significant and above the threshold level of 0.40. As for the well-being scale, life well-being ($\beta = 0.84$; $p < .05$), workplace well-being ($\beta = 0.85$; $p < .05$), and psychological well-being subscales ($\beta = 0.94$; $p < .05$) loaded significantly on the higher order factor which is employee wellbeing. As for the perceived stress scale, perceived distress ($\beta = 0.52$; $p < .05$) and perceived coping ($\beta = 0.90$; $p < .05$) loaded significantly on the perceived stress higher order factor. Therefore, composite scores for mindfulness (13 items), perceived stress scale (10 items), intention to quit (3 items), and employee-wellbeing (18 items) were calculated by taking the average of the items measuring the relevant construct. The factor loadings of the measurement items can be seen in Table 1.

The descriptive statistics, Cronbach's alpha reliability coefficients, and intercorrelations among the variables are shown in Table 2. As shown in Table 2, employee well-being is positively correlated with mindfulness ($r = .45$, $p = .001$) and intention (not) to quit ($r = .54$, $p = .001$) and negatively correlated with PSS ($r = -.43$, $p = .001$). The intention (not) to quit is positively correlated with mindfulness ($r = .22$, $p = .001$) and negatively correlated with PSS ($r = -.26$, $p = .001$). These correlations provided initial support for the proposed hypotheses.

Hypothesis testing

The relationships between the variables were analyzed via a full-latent model with structural equation modeling (SEM), where perceived stress mediated mindfulness and employee outcomes of employee well-being and the intention (not) to quit. The model simultaneously tested the mediating role of perceived stress in the mindfulness–employee well-being linkage and mindfulness-intention (not) to quit linkage (see Fig. 1). Accordingly, the model fit the data adequately, and the fit indices of the model were satisfactory (X^2/df = 1.92; GFI = 0.91; CFI = 0.88; TLI = 0.87; RMSEA = 0.07 and SRMR = 0.06).

Regarding our model, the total, direct, and indirect effects of the model are presented in Table 3. As shown in Table 3, in terms of direct effects, the path from mindfulness to employee well-being was significant (b = 0.79; $\beta = 0.39$, $p < .01$), rendering H1 supported. Moreover, the paths from mindfulness to perceived stress (b = – 0.61; β

Table 1 Factor loadings of the measurement items

	B	Standard Error (b)	(β)	P
Perceived Distress				
PD1	1.00	--	0.63	<0.001
PD2	1.24	0.16	0.71	<0.001
PD3	1.12	0.15	0.64	<0.001
PD4	1.33	0.17	0.68	<0.001
PD5	1.08	0.16	0.56	<0.001
PD6	1.31	0.17	0.65	
Perceived Coping				
PC1	1.00	--	0.60	<0.001
PC2	1.04	0.13	0.72	<0.001
PC3	1.07	0.14	0.72	<0.001
PC4	1.27	0.16	0.74	<0.001
PSS				
P. Distress	0.54	0.13	0.52	<0.001
P. Coping	1.00	--	0.90	<0.001
Mindfulness				
M1	1.00	--	0.50	<0.001
M2	1.49	0.27	0.53	<0.001
M3	1.70	0.29	0.71	<0.001
M4	1.28	0.27	0.50	<0.001
M5	1.25	0.25	0.50	<0.001
M7	1.62	0.29	0.63	<0.001
M8	1.68	0.29	0.67	<0.001
M9	1.38	0.27	0.50	<0.001
M10	1.65	0.29	0.64	<0.001
M12	1.65	0.29	0.66	<0.001
M13	1.80	0.31	0.66	<0.001
M14	1.89	0.31	0.75	<0.001
M15	1.85	0.32	0.67	
WWB				
WWB1	1.00	--	0.79	<0.001
WWB2	1.13	0.07	0.91	<0.001
WWB3	1.10	0.07	0.89	<0.001
WWB4	1.19	0.08	0.84	<0.001
WWB5	1.20	0.08	0.87	<0.001
WWB6	1.14	0.07	0.89	<0.001
LWB				
LWB1	1.00	--	0.87	<0.001
LWB2	0.93	0.05	0.88	<0.001
LWB3	0.97	0.05	0.89	<0.001
LWB4	0.96	0.04	0.92	<0.001
LWB5	0.94	0.05	0.89	<0.001
LWB6	0.87	0.07	0.68	<0.001
PWB				
PWB1	1.00	--	0.67	<0.001
PWB2	1.18	0.11	0.80	<0.001
PWB3	1.15	0.09	0.78	<0.001
PWB4	1.33	0.11	0.88	<0.001
PWB5	1.29	0.11	0.90	<0.001
PWB6	1.28	0.11	0.90	<0.001
EWB				
WWB	1.16	0.13	0.85	<0.001
LWB	1.24	0.13	0.84	<0.001

Table 1 (continued)

	B	Standard Error (b)	(β)	P
PWB	1.00	--	0.94	< 0.001
Int (not) to Quit				
Intq1	1.00	--	0.82	< 0.001
Intq2	0.93	0.06	0.83	< 0.001
Intq3	1.12	0.07	0.93	< 0.001

Note PSS = Perceived Stress Scale; P. Distress = Perceived Distress; P. Coping: Perceived Coping; EWB = Employee Well-being; LWB = Life Well-being, PWB = Psychological Well-being, Int. (not) quit = Intention (not) to quit. b: Unstandardized regression coefficient, β = Standardized regression coefficient

Table 2 Descriptive analysis and Zero-Order correlations among the study variables

	M (SD)	1	2	3	4	5	6	7
1. Mindfulness	4.25 (0.9)	(0.88)						
2. PSS	2.79(0.6)	− 0.43**	(0.96)					
3.Int.(not) quit	3.94(1.1)	0.22**	− 0.26**	(0.89)				
4. EWB	5.02(1.3)	0.45**	− 0.43**	0.54**	(0.82)			
5. Gender	-	0.08	-29*	− 0.05	− 0.01	--		
6. Marital	-	− 0.26**	0.17*	− 0.31**	− 0.21*	− 0.08	--	
7. Tenure	5.46 (4.2)	0.05	0.01	0.02	0.03	0.18*	− 0.28	–

Note PSS = Perceived Stress Scale; EWB = Employee Well-being; Int. (not) quit = Intention not to quit *p <.05, **p <.01. The numbers on the diagonal represent Cronbach's alpha values. Gender: 1 = Women, 2 = Men; Marital: 1 = Married, 2 = Single, Intention (not) Quit: 1 = Always, 5 = Never
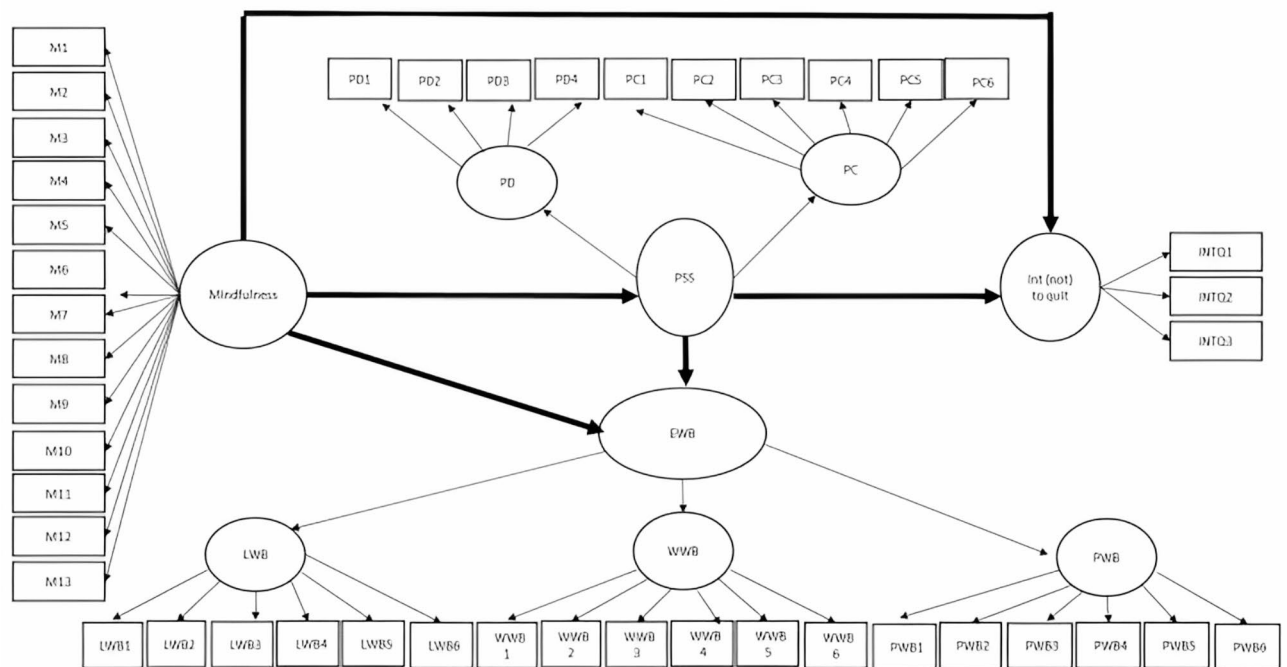

Fig. 1 The Hypothesized Mediation Model. *Note*. PSS: Perceived Stress Scale; EWB = Employee Well-being; Int. (not) quit = Intention not to quit, LWB = Life Well-being, PWB = Psychological Well-being

= − 0.51, $p <.01$) and from perceived stress to employee well-being (b = − 0.47; $\beta = − 0.29$, $p <.01$) were significant. Thus, the indirect effects were tested with a bias-corrected percentile bootstrapping method with confidence intervals (95% confidence intervals) based on 2000 bootstrap samples. The bootstrap results for the indirect effect were significant (as the bias-corrected percentile confidence intervals did not include zero), confirming the

findings of the path analysis (indirect effect: b = 0.28; 95% CI = [0.08, 0.20]). Thus, the findings support H3, which states that mindfulness influences employee well-being via perceived stress.

For the other outcome variable in our model, the direct path from mindfulness to intention (not) to quit was not significant (b = 0.27; $\beta = 0.13$, $p =.15$), revealing H4 unsupported. The direct path from perceived stress to intention

Sentin *et al. BMC Psychology* (2025) 13:295

Page 9 of 14

Table 3 Results of Full-Latent variable structural model

Structural Paths	b	β	p
Mindfulness -> Emp. Well-Being	0.79	0.39	p <.001
Mindfulness -> Intention (not) to Quit	0.27	0.13	p >.05
Mindfulness -> PSS	-,61	−0.51	p <.01
PSS -> Emp. Well-Being	−0.47	−0.29	p <.001
PSS -> Intention (not) to Quit	−0.45	−0.27	p <.001
Mindfulness -> Emp. Well-Being (Total Effect)	1.02	0.54	p <.001
Mindfulness -> Intention (not) to Quit (Total Effect)	0.54	0.25	p <.001
Bootstrap results for Indirect Effect			
Mindfulness -> PSS -> Emp. Wellbeing	0.28	0.15	95% CI [0.08, 0.20]
Mindfulness -> PSS -> Intention (not) to Quit	0.27	0.17	95% CI [0.08, 0.53]

Note PSS: Perceived Stress Scale; Emp Well-being = Employee Well-being, b: Unstandardized regression coefficient, β = Standardized regression coefficient, 95% *CI*: denotes bootstrap unstandardized regression estimates. Numbers in the brackets represent lower and upper bound estimates calculated at 95% confidence level

(not) to quit turned out to be significant (b = -0,45; β = -0.27, p <.01), In terms of indirect effect, the indirect effect of mindfulness to intention (not) to quit via perceived stress was significant (indirect effect: b = 0.27% *CI* = [0.08, 0.53]). In summary, these findings confirmed H2 and H5 but failed to support H4.

Discussion

While research on mindfulness has predominantly highlighted its positive effects on individuals [2, 9, 17, 56], the underlying mechanisms linking mindfulness to well-being and turnover intentions remain relatively unclear in work settings. Given that employee well-being and turnover intentions are crucial factors in predicting the long-term success of organizations [14, 90, 91], gaining deeper insights into the underlying mechanisms of how mindfulness influences these organizational and employee outcomes becomes essential. Thus, the present study addresses this gap and contributes to the extant literature by examining the mediating role of perceived stress in the relationships between mindfulness, employee well-being, and turnover intentions in a non-Western organizational setting based on the premises of the JD-R model. By unraveling these connections, this study provides insights for organizations striving to create supportive and sustainable work environments.

We discuss the role of mindfulness with respect to two organizational outcomes. Pertaining to well-being outcome, the findings provide evidence for linking mindfulness to employee well-being directly and indirectly. Consistent with our prior assumptions, the results suggest that mindfulness acts, as a resource, helping employees maintain balance, reduce stress, and improve prioritization skills [92]. This direct link between mindfulness and well-being aligns with the findings of previous studies [5, 17, 42, 93–96]. This also aligns with a recent study that found that resilience and mindfulness increase life satisfaction in the Turkish adult population [97].

Our proposition regarding the mediating role of perceived stress in the linkage between mindfulness and well-being has also gained support. Mindfulness was found to negatively influence perceived stress, which in turn is associated with greater employee well-being. Consistent with the JD-R model, mindfulness, as a resource, offers employees breathing room from psychological distress by enabling them to concentrate on the current moment [43], serving their ability to alleviate negative emotional states [2]. It indicates that mindfulness is a significant factor in managing stress levels and thereby impacts the well-being of employees. In other words, mindfulness increases awareness of thoughts and emotions in stressful circumstances, enabling employees to handle stressors effectively [98, 99]. This mediating effect is consistent with previous findings showing that mindfulness decreases employees' perceived stress levels and manifests itself in higher levels of well-being [93] and work engagement [100]. Additionally, in the Turkish sample, Irak et al. [101] showed that mindfulness predicts psychological well-being by influencing uncertainty tolerance during COVID-19 lockdowns. They found that employees with higher mindfulness levels see their situation as less dangerous, which lowers their stress, anxiety, and burnout.

Concerning the turnover intention outcome, the empirical findings support the indirect effect of mindfulness on turnover intention through perceived stress, which aligns with the findings of Reb et al. [14]. Accordingly, mindful individuals tend to remain attentive to present experiences and approach them with acceptance rather than judgment [102]. Thus, high levels of mindfulness appear to promote mental health and are linked to reduced levels of perceived stress, which deters employees from searching for work outside of their company. As a result, mindful individuals can adapt more flexibly to their circumstances and are more likely to perceive stressful events at work as manageable [103], thereby reducing their intentions to quit their organization. The mediating effect of perceived stress is also consistent with earlier studies. Using 503 full-time employees, Zivnuska et al. [43] revealed that mindfulness affects turnover intention via psychological distress. Similarly, Singh et al. [104] reported that stress acts as a mediator between mindfulness-based training and turnover intentions.

While mindfulness helps employees cope with their stress, it does not directly relate to the employees'

turnover intentions, contrary to previous research [14, 62, 72, 73]. The complexity of turnover decisions, which may also be influenced by organizational, financial, and career-related factors—could explain why mindfulness does not directly affect turnover intentions. Given our circumstances, job security might outweigh other concerns due to Turkiye's economic instability and high inflation [27]. The labor market may be constrained by high unemployment rates, making it more difficult for workers to quit even if they are unhappy. Therefore, employees may remain in their existing roles out of necessity rather than choice, regardless of their capacity to manage stress through mindfulness.

Although there is a tendency to regard mindfulness and its practices as crucial for addressing work-related outcomes [6], certain studies caution against the uncritical acceptance of mindfulness [9, 105], noting that mindfulness might unintentionally lead employees to prioritize personal values or relationships over organizational objectives. Thus, it can be reasonable to argue that mindfulness's most significant effect lies in its ability to mitigate perceived stress, thereby indirectly influencing employee turnover intentions.

Theoretical and practical implications

The current study makes several notable theoretical and practical contributions by examining employee outcome variables in one integrated model. While previous studies have shown how mindfulness relates to turnover intentions [14, 73] and how it relates to well-being [2, 42], the current study expands our understanding of mindfulness by examining its effects on both employee well-being and turnover intentions in one cohesive model and highlighting perceived stress as a mediating mechanism within JD-R model. As Daniel et al. [106] highlighted the distinct and fragmented nature of mindfulness research in different schools of thought, levels, and disciplines, this paper adds to the industrial and organizational psychology literature in discussing the impact of mindfulness on a variety of employee outcomes at work life.

Employee turnover incurs significant costs related to the process of separation, replacement, and training [107], estimated to range from 1.5 to 2.5 times the annual salary of employees [108]. Mindfulness in the workplace has been recognized as an effective strategy for improving employee retention [109, 110]. Investing in mindfulness training due to its relationship with stress reduction and fostering a supportive environment for its practice can provide organizations with a strategic advantage. This study, therefore, contributes to the ongoing discussion on workplace well-being by highlighting the importance of mindfulness in reducing stress and turnover intentions, further underscoring its significance in organizational

settings. From a practical standpoint, mindfulness training offers a cost-effective and scalable intervention for enhancing employee well-being, reducing turnover, and fostering a more engaged workforce.

Research indicates that mindfulness can be cultivated through mindfulness training programs. For instance, Brown and Ryan [2] have provided evidence that even trait-based scores on the MAAS could be improved over time during an eight-week standardized mindfulness-based stress reduction program. Thus, interventions that enhance attention and attitudes can help employees develop mindfulness skills, which could yield positive outcomes for individuals and organizations [2, 100, 111]. In this regard, organizations could design and offer mindfulness-based stress reduction training programs that combine mindfulness meditation, yoga, mindful breathing, and mindful stretching to their employees to manage stress and increase employee mental health [69].

Further, leaders could play a crucial role in fostering a culture of acceptance and openness among employees by endorsing mindfulness practices and demonstrating positive attitudes toward mindfulness practices. When leaders integrate mindfulness practices into their routines, they might become role models who inspire employees to engage in similar practices. Therefore, organizations should prioritize cultivating organizational leaders and engaging them in mindfulness training programs to maximize their impact on employee well-being and organizational outcomes.

Limitations and future directions

The current study is not without certain limitations despite its strengths. First, this study employed a cross-sectional design, which could limit inferences regarding causal relationships. Thus, prospective research could employ longitudinal designs to explore the causal dynamics between mindfulness, stress, and organizational outcomes. Second, we used self-report tools to assess the study variables of perceived stress, employee well-being, and turnover intention. Although these instruments are psychometrically valid and reliable, there might be a thread of social desirability bias. Future studies could combine multiple methods for a more comprehensive understanding. For example, some alternative tools, such as physical (e.g., cortisol levels for measuring stress), behavioral (e.g., absenteeism and job search behavior for measuring turnover intention; facial expression for measuring stress), and observational (e.g., direct observation or video analysis for measuring stress and turnover intention) measures, would provide complementary information to self-report measures. Third, we measured the mindfulness levels of participants using the Mindful Attention and

Awareness Scale (MAAS). Future studies could also employ other measures of mindfulness in addition to MAAS, particularly focusing on state-based mindfulness measures. Fourth, we address the organizational outcomes of employee well-being and turnover intention. Future research could explore the influence of mindfulness on other organizational outcomes, such as job engagement, job satisfaction, actual turnover, job performance, and/or organizational citizenship behavior. Fifth, when exploring the indirect effects of mindfulness on employee outcomes, we focused only on one transmitting mechanism, perceived stress. Several other partial mediations (i.e., optimism, burnout, etc., and leader mindfulness) and/or serial mediating mechanisms, in addition to perceived stress, could offer valuable directions for future studies [14]. Among the possible mediators, Byron et al. [112] highlighted the importance of leaders' attitudes toward mindfulness interventions, emphasizing their impact on the acceptance and effectiveness of such training among employees. The last limitation is related to our non-Western sample. This study gathered data from Turkish employees, which could restrict the generalizability of our findings to our populations and thereby highlight the need for further research in more different samples.

Conclusion

This study contributes to the understanding of the underlying mechanisms of how mindfulness influences employee outcomes. Specifically, the findings suggest that mindfulness indirectly impacts employee well-being through its negative effect on perceived stress. By demonstrating the mediating role of perceived stress, the findings of this study encourage reflection on employees' levels of mindfulness, which influences their stress, well-being, and overall work performance. As a result, from a practical point of view, organizations can consider mindfulness training and support a valuable strategy for promoting a healthier and more productive workforce in sustainable organizations.

Data availability
No datasets were generated or analysed during the current study.

Declarations

References
1. Bakker AB, Demerouti E. Job demands-resources theory: taking stock and looking forward. J Occup Health Psychol. 2017;22(3):273–86. https://doi.org/10.1037/ocp0000056.
2. Brown KW, Ryan RM. The benefits of being present: mindfulness and its role in psychological well-being. J Personal Soc Psychol. 2003;84(4):822. https://doi.org/10.1037/0022-3514.84.4.822.
3. O'Brien D. (2012). Ryan takes mindfulness to inner-city schools-*The Business Journal. Retrieved from*https://archive.businessjournaldaily.com/education/ryan-takes-%E2%80%98mindfulness%E2%80%99-inner-city-schools-2012-4-13
4. Carmody J, Baer RA. Relationships between mindfulness practice and levels of mindfulness, medical and psychological symptoms and well-being in a mindfulness-based stress reduction program. J Behav Med. 2008;31:23–33. https://doi.org/10.1007/s10865-007-9130-7.
5. Chiesa A, Serretti A. A systematic review of Neurobiological and clinical features of mindfulness meditations. Psychol Med. 2010;40(8):1239–52. https://doi.org/10.1017/S0033291709991747.
6. Glomb TM, Duffy MK, Bono JE, Yang T. (2011). Mindfulness at work. In *Research in personnel and human resources management* (Vol. 30, pp. 115–157). Emerald Group Publishing Limited. https://doi.org/10.1108/S0742-7301(2011)0000030005
7. Goldin PR, Gross JJ. Effects of mindfulness-based stress reduction (MBSR) on emotion regulation in social anxiety disorder. Emotion. 2010;10(1):83. https://doi.org/10.1037/a0018441.
8. Michaelsen MM, Graser J, Onescheit M, Tuma MP, Werdecker L, Pieper D, Esch T. Mindfulness-based and mindfulness-informed interventions at the workplace: A systematic review and meta-regression analysis of RCTs. Mindfulness. 2023;14(6):1271–304. https://doi.org/10.1007/s12671-023-02130-7.
9. Choi E, Gruman JA, Leonard CM. A balanced view of mindfulness at work. Organizational Psychol Rev. 2022;12(1):35–72. https://doi.org/10.1177/20413866211036930.
10. Lomas T, Medina JC, Ivtzan I, Rupprecht S, Hart R, Eiroa-Orosa FJ. The impact of mindfulness on well-being and performance in the workplace: an inclusive systematic review of the empirical literature. Eur J Work Organizational Psychol. 2017;26:492–513. https://doi.org/10.1080/1359432X.2017.1308924.
11. Zhang J, Zheng S, Hu Z, Wang J. Effects of mindfulness on depression in college students: mediating role of psychological resilience and moderating role of gender. BMC Psychol. 2024;12(1):27. https://doi.org/10.1186/s40359-023-01468-w.
12. Hülsheger UR, Alberts HJ, Feinholdt A, Lang JW. Benefits of mindfulness at work: the role of mindfulness in emotion regulation, emotional exhaustion, and job satisfaction. J Appl Psychol. 2013;98(2):310–25. https://doi.org/10.1037/a0031313.
13. Leroy H, Anseel F, Dimitrova NG, Sels L. Mindfulness, authentic functioning, and work engagement: A growth modeling approach. J Vocat Behav. 2013;82(3):238–47. https://doi.org/10.1016/j.jvb.2013.01.012.
14. Reb J, Narayanan J, Chaturvedi S, Ekkirala S. The mediating role of emotional exhaustion in the relationship of mindfulness with turnover intentions and job performance. Mindfulness. 2017;8:707–16. https://doi.org/10.1007/s12671-016-0648-z.
15. Corthorn C, Pedrero V, Torres N, Reynaldos-Grandón, Paredes. Mindfulness, teacher mental health, and well-being in early education: a correlational

Sentin *et al. BMC Psychology*   (2025) 13:295

Page 12 of 14

study. BMC Psychol. 2024;12(428):1–11. https://doi.org/10.1186/s40359-024-01930-3.

16. Bonde EH, Mikkelsen EG, Fjorback LO, Juul L. (2024). Exploring an Organizational-Level Mindfulness-Based Intervention in Private Workplace Settings. *Mindfulness*, 1–19. https://doi.org/10.1007/s12671-024-02375-w

17. Good DJ, Lyddy CJ, Glomb TM, Bono JE, Brown KW, Duffy MK, Baer RA, Brewer JA, Lazar SW. Contemplating mindfulness at work: an integrative review. J Manag. 2016;42(1):114–42. https://doi.org/10.1177/0149206315617003.

18. Pinck AS, Sonnentag S. Leader mindfulness and employee Well-Being: the mediating role of transformational leadership. Mindfulness. 2018;9:884–96. https://doi.org/10.1007/s12671-017-0828-5.

19. Danna K, Griffin RW. Health and well-being in the workplace: A review and synthesis of the literature. J Manag. 1999;25(3):357–84. https://doi.org/10.1177/014920639902500305.

20. Diener E. Subjective well-being. Psychol Bull. 1984;95(3):542–75. https://doi.org/10.1037/0033-2909.95.3.542.

21. Grant AM, Christianson MK, Price RH. Happiness, health, or relationships? Managerial practices and employee well-being tradeoffs. Acad Manage Perspect. 2007;21(3):51–63. https://doi.org/10.5465/amp.2007.26421238.

22. Mobley WH, Horner SO, Hollingsworth AT. An evaluation of precursors of hospital employee turnover. J Appl Psychol. 1978;63(4):408–14. https://doi.org/10.1037/0021-9010.63.4.408.

23. Guidetti G, Viotti S, Badagliacca R, Colombo L, Converso D. Can mindfulness mitigate the energy-depleting process and increase job resources to prevent burnout? A study on the mindfulness trait in the school context. PLoS ONE. 2019;14(4):e0214935. https://doi.org/10.1371/journal.pone.0214935.

24. Gajda D, Zbierowski P. Exploring the consequences of mindfulness at work: the impact of mindful organizing on employee attitudes and behavior toward work and organization. Personnel Rev. 2023;52(9):2342–62. https://doi.org/10.1108/PR-05-2020-0385.

25. Wihler A, Hülsheger UR, Reb J, Menges JI. It's so boring–or is it? Examining the role of mindfulness for work performance and attitudes in monotonous jobs. J Occup Organizational Psychol. 2022;95(1):131–54. https://doi.org/10.1111/joop.12370.

26. Erat S, Kitapci H, Çömez P. The effect of organizational loads on work stress, emotional commitment, and turnover intention. Int J Organizational Leadersh. 2017;6:221–31. https://doi.org/10.33844/ijol.2017.60304.

27. Koseoglu G, Wasti SA, Terzi H. Employee turnover in Turkey. In: Allen DG, Vardaman JM, editors. Global talent retention: Understanding employee turnover around the world (Talent Management). Leeds: Emerald Publishing Limited; 2021. pp. 167–89.

28. Erdem AT. Mesleki Özdeşleşmenin Tükenmişliğe Etkisinde iş Yükü Algısının Aracılık Rolü: Hemşirelere Yönelik Bir Araştırma. Gümüşhane Üniversitesi Sosyal Bilimler Dergisi. 2020;11(Oct):89–103. https://doi.org/10.36362/gumus.821979.

29. Kabat-Zinn J. (1994). Wherever you go there you are. *Hyperion: New York*:.

30. Creswell JD. Mindfulness interventions. Ann Rev Psychol. 2017;68(1):491–516. https://doi.org/10.1146/annurev-psych-042716-051139.

31. Reb J, Narayanan J, Chaturvedi S. Leading mindfully: two studies on the influence of supervisor trait mindfulness on employee well-being and performance. Mindfulness. 2014;5:36–45. https://doi.org/10.1007/s12671-012-0144-z.

32. Vogus TJ, Sutcliffe KM. Organizational mindfulness and mindful organizing: A reconciliation and path forward. Acad Manage Learn Educ. 2012;11(4):722–35. https://doi.org/10.5465/amle.2011.0002c.

33. Shapiro SL, Carlson LE, Astin JA, Freedman B. Mechanisms of mindfulness. J Clin Psychol. 2006;62(3):373–86. https://doi.org/10.1002/jclp.20237.

34. Baer RA. Mindfulness training as a clinical intervention: a conceptual and empirical review. Clin Psychol Sci Pract. 2003;10(2):125–43. https://doi.org/10.1093/clipsy.bpg015.

35. Teasdale JD, Segal ZV, Williams JMG, Ridgeway VA, Soulsby JM, Lau MA. Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. J Consult Clin Psychol. 2000;68(4):615–23. https://doi.org/10.1037/0022-006X.68.4.615.

36. Bishop SR, Lau M, Shapiro S, Carlson L, Anderson ND, Carmody J, Segal ZV, Speca S, Velting M, Devins DG. Mindfulness: A proposed operational definition. Clin Psychol Sci Pract. 2004;11(3):230. https://doi.org/10.1093/clipsy.bph077.

37. Brown KW, Ryan RM, Creswell JD. Mindfulness: theoretical foundations and evidence for its salutary effects. Psychol Inq. 2007;18(4):211–37. https://doi.org/10.1080/10478400701598298.

38. Ryff CD. Psychological well-being in adult life. Curr Dir Psychol Sci. 1995;4(4):99–104. https://doi.org/10.1111/1467-8721.ep10772395.

39. Huppert FA. Psychological well-being: evidence regarding its causes and consequences. Appl Psychology: Health Well-being. 2009;1(2):137–64. https://doi.org/10.1111/j.1758-0854.2009.01008.x.

40. Page KM, Vella-Brodrick DA. The 'what', 'why' and 'how' of employee well-being: A new model. Soc Indic Res. 2009;90:441–58. https://doi.org/10.1007/s11205-008-9270-3.

41. Zheng X, Zhu W, Zhao H, Zhang C. Employee wellbeing in organizations: theoretical model, scale development, and cross-cultural validation. J Organizational Behav. 2015;36:621–44. https://doi.org/10.1002/job.1990.

42. Sedlmeier P, Eberth J, Schwarz M, Zimmermann D, Haarig F, Jaeger S, Kunze S. The psychological effects of meditation: a meta-analysis. Psychol Bull. 2012;138(6):1139–71. https://doi.org/10.1037/a0028168.

43. Zivnuska S, Kacmar KM, Ferguson M, Carlson DS. Mindfulness at work: resource accumulation, well-being, and attitudes. Career Dev Int. 2016;21(2):106–24. https://doi.org/10.1108/CDI-06-2015-0086.

44. Keng SL, Smoski MJ, Robins CJ. Effects of mindfulness on psychological health: A review of empirical studies. Clin Psychol Rev. 2011;31(6):1041–56. https://doi.org/10.1016/j.cpr.2011.04.006.

45. Janssen M, Heerkens Y, Kuijer W, Van Der Heijden B, Engels J. Effects of Mindfulness-Based stress reduction on employees' mental health: A systematic review. PLoS ONE. 2018;13(1):e0191332. https://doi.org/10.1371/journal.pone.0191332.

46. Allen JG, Romate J, Rajkumar E. Mindfulness-based positive psychology interventions: a systematic review. BMC Psychol. 2021;9(116):1–18. https://doi.org/10.1186/s40359-021-00618-2.

47. Duchemin AM, Steinberg BA, Marks DR, Vanover K, Klatt M. A small randomized pilot study of a workplace mindfulness-based intervention for surgical intensive care unit personnel: effects on salivary α-amylase levels. J Occup Environ Med. 2015;57(4):393–9. https://doi.org/10.1097/JOM.0000000000000371.

48. De Vibe M, Solhaug I, Tyssen R, Friborg O, Rosenvinge JH, Sørlie T, Bjørndal A. Mindfulness training for stress management: a randomized controlled study of medical and psychology students. BMC Med Educ. 2013;13:1–11. https://doi.org/10.1186/1472-6920-13-107.

49. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. J Health Soc Behav. 1983;24:385–96. https://doi.org/10.2307/2136404.

50. Baik C, Larcombe W, Brooker A. How universities can enhance student mental wellbeing: the student perspective. High Educ Res Dev. 2019;38(4):674–87. https://doi.org/10.1080/07294360.2019.1576596.

51. Lazarus RS. Stress, appraisal, and coping. Volume 464. Springer; 1984.

52. Bao X, Xue S, Kong F. Dispositional mindfulness and perceived stress: the role of emotional intelligence. Pers Indiv Differ. 2015;78:48–52. https://doi.org/10.1016/j.paid.2015.01.007.

53. Bränström R, Duncan LG, Moskowitz JT. The association between dispositional mindfulness, psychological well-being, and perceived health in a Swedish population-based sample. Br J Health Psychol. 2011;16(2):300–16. https://doi.org/10.1348/135910710X501683.

54. Gard T, Brach N, Hölzel BK, Noggle JJ, Conboy LA, Lazar SW. Effects of a yoga-based intervention for young adults on quality of life and perceived stress: the potential mediating roles of mindfulness and self-compassion. J Posit Psychol. 2012;7(3):165–75. https://doi.org/10.1080/17439760.2012.667144.

55. Weinstein N, Brown KW, Ryan RM. A multi-method examination of the effects of mindfulness on stress attribution, coping, and emotional well-being. J Res Pers. 2009;43(3):374–85. https://doi.org/10.1016/j.jrp.2008.12.008.

56. Khoury B, Sharma M, Rush SE, Fournier C. Mindfulness-based stress reduction for healthy individuals: A meta-analysis. J Psychosom Res. 2015;78(6):519–28. https://doi.org/10.1016/j.jpsychores.2015.03.009.

57. Demerouti E, Bakker AB. The job demands-resources model: challenges for future research. SA J Industrial Psychol. 2011;37(2):01–9. https://doi.org/10.4102/sajip.v37i2.974.

58. Dicke T, Stebner F, Linninger C, Kunter M, Leutner D. A longitudinal study of teachers' occupational well-being: applying the job demands-resources model. J Occup Health Psychol. 2018;23(2):262. https://doi.org/10.1037/ocp0000070.

59. Lesener T, Gusy B, Wolter C. The job demands-resources model: A meta-analytic review of longitudinal studies. Work Stress. 2019;33(1):76–103. https://doi.org/10.1080/02678373.2018.1529065.

60. Bellini D, Barbieri B, Loi M, Mondo M, De Simone S. The restorative quality of the work environments: the moderation effect of environmental resources

between job demands and mindfulness. Social Sci. 2023;12(7):375. https://doi.org/10.3390/socsci12070375.

61. Kroon B, Menting C, van Woerkom M. Why mindfulness sustains performance: the role of personal and job resources. Industrial Organizational Psychol. 2015;8(4):638–42. https://doi.org/10.1017/iop.2015.92.

62. Lee YH, Richards KAR, Washburn N. Mindfulness, resilience, emotional exhaustion, and turnover intention in secondary physical education teaching. Eur Rev Appl Psychol. 2021;71(6):100625. https://doi.org/10.1016/j.erap.2021.100625.

63. Murtaza G, Roques O, Talpur QU, Khan R, Haq IU. Effects of perceived organizational politics and effort-reward imbalance on work outcomes–the moderating role of mindfulness. Personnel Rev. 2024;53(1):76–98. https://doi.org/10.1108/PR-09-2020-0706.

64. Menezes de Sousa G, Lima-Araújo GLD, Araújo DBD, Sousa MBCD. Brief mindfulness-based training and mindfulness trait attenuate psychological stress in university students: a randomized controlled trial. BMC Psychol. 2021;9:1–14. https://doi.org/10.1186/s40359-021-00520-x.

65. Roeser RW, Schonert-Reichl KA, Jha A, Cullen M, Wallace L, Wilensky R, Oberla E, Thomson K, Taylor C, Harrison J. Mindfulness training and reductions in teacher stress and burnout: results from two randomized, waitlist-control field trials. J Educ Psychol. 2013;105(3):787–805. https://doi.org/10.1037/a0032093.

66. Flook L, Goldberg SB, Pinger L, Bonus K, Davidson RJ. Mindfulness for teachers: A pilot study to assess effects on stress, burnout, and teaching efficacy. Mind Brain Educ. 2013;7(3):182–95. https://doi.org/10.1111/mbe.12026.

67. Roche M, Haar JM, Luthans F. The role of mindfulness and psychological capital on the well-being of leaders. J Occup Health Psychol. 2014;19(4):476–89. https://doi.org/10.1037/a0037183.

68. Axelsen JL, Meline JSJ, Staiano W, Kirk U. Mindfulness and music interventions in the workplace: assessment of sustained attention and working memory using a crowdsourcing approach. BMC Psychol. 2022;10(1):108. https://doi.org/10.1186/s40359-022-00810-y.

69. Sharma M, Rush SE. Mindfulness-based stress reduction as a stress management intervention for healthy individuals: a systematic review. J Evidence-based Complement Altern Med. 2014;19(4):271–86. https://doi.org/10.1177/2156587214543143.

70. Jain S, Shapiro SL, Swanick S, Roesch SC, Mills PJ, Bell I, Schwartz GE. A randomized controlled trial of mindfulness meditation versus relaxation training: effects on distress, positive States of Mind, rumination, and distraction. Ann Behav Med. 2007;33:11–21. https://doi.org/10.1207/s15324796abm3301_2.

71. Aldao A, Nolen-Hoeksema S, Schweizer S. Emotion-regulation strategies across psychopathology: A meta-analytic review. Clin Psychol Rev. 2010;30(2):217–37. https://doi.org/10.1016/j.cpr.2009.11.004.

72. Andrews MC, Michele Kacmar K, Kacmar C. The mediational effect of regulatory focus on the relationships between mindfulness and job satisfaction and turnover intentions. Career Dev Int. 2014;19(5):494–507. https://doi.org/10.1108/CDI-02-2014-0018.

73. Dane E, Brummel BJ. Examining workplace mindfulness and its relations to job performance and turnover intention. Hum Relat. 2014;67(1):105–28. https://doi.org/10.1177/0018726713487753.

74. Lin CY, Huang CK, Li HX, Chang TW, Hsu YC. Will they stay or leave? Interplay of organizational learning culture and workplace mindfulness on job satisfaction and turnover intentions. Public Personnel Manage. 2022;51(1):24–47. https://doi.org/10.1177/0091026021991581.

75. Raza B, Ali M, Naseem K, Moeed A, Ahmed J, Hamid M. Impact of trait mindfulness on job satisfaction and turnover intentions: mediating role of work-family balance and moderating role of work-family conflict. Cogent Bus Manage. 2018;5(1):1542943. https://doi.org/10.1080/23311975.2018.1542943.

76. Li Y, Zhang H. Trait mindfulness and turnover intention of private kindergarten teachers: sequential mediation of cognitive flexibility and perceived organizational support. Social Behav Personality: Int J. 2024;52(6):e13214. https://doi.org/10.2224/sbp.13214.

77. Skinner E, Beers J. Mindfulness and teachers' coping in the classroom: A developmental model of teacher stress, coping, and everyday resilience. Handb Mindfulness Education: Integrating Theory Res into Pract. 2016;99–118. https://doi.org/10.1007/978-1-4939-3506-2_7.

78. Reb J, Atkins PW, editors. Mindfulness in organizations: foundations, research, and applications. Cambridge University Press; 2015.

79. Gardulf ANN, Söderström IL, Orton ML, Eriksson LE, Arnetz B, Nordström G. Why do nurses at a university hospital want to quit their jobs? J Nurs Adm Manag. 2005;13(4):329–37. https://doi.org/10.1111/j.1365-2934.2005.00537.x.

80. Tetteh S, Wu C, Opata CN, Agyapong A, Amoako GNY, R., Osei-Kusi F. Perceived organizational support, job stress, and turnover intention: moderating affective commitments. J Psychol Afr. 2020;30(1):9–16. https://doi.org/10.1080/14330237.2020.1722365.

81. Brislin RW. Back-translation for cross-cultural research. J Cross-Cult Psychol. 1970;1(3):185–216. https://doi.org/10.1177/135910457000100301.

82. Medvedev ON, Siegert RJ, Feng XJ, Billington DR, Jang JY, Krägeloh CU. Measuring trait mindfulness: how to improve the precision of the mindful attention awareness scale using a Rasch model. Mindfulness. 2016;7:384–95. https://doi.org/10.1007/s12671-015-0454-z.

83. Özyesil Z, Arslan C, Kesici Ş, Deniz ME. Adaptation of mindful attention and awareness scale into Turkish. Educ Sci. 2011;36(160):224–35. https://hdl.handle.net/20.500.12395/26090.

84. Çelik Örücü M, Demir A. Psychometric evaluation of perceived stress scale for Turkish university students. Stress Health: J Int Soc Invest Stress. 2009;25(1):103–9. https://doi.org/10.1002/smi.1218.

85. Landau J, Hammer TH. Clerical employees' perceptions of intraorganizational career opportunities. Acad Manag J. 1986;29(2):385–404. https://doi.org/10.5465/256194.

86. Bayhan-Karapinar P, Metin-Camgoz S, Tayfur-Ekmekci O. Employee well-being, workaholism, work-family conflict, and instrumental spousal support: A moderated mediation model. J Happiness Stud. 2020;21:2451–71. https://doi.org/10.1007/s10902-019-00191-x.

87. Tabachnick BG, Fidell LS. Using multivariate statistics. Volume 6. Boston, MA: Pearson; 2013. pp. 497–516.

88. Podsakof PM, Organ DW. Self-reports in organizational research: problems and prospects. J Manag. 1986;12(4):531–44. https://doi.org/10.1177/014920638601200408.

89. Kline RB. (2011). Principles and practice of structural equation modeling (3rd edition) New York: The Guilford Press.

90. Bretz RD Jr, Judge TA. The role of human resource systems in job applicant decision processes. J Manag. 1994;20(3):531–51. https://doi.org/10.1016/0149-2063(94)90001-9.

91. Lofquist LH, Dawis RV. (1984). Research on work adjustment and satisfaction: implications for career counseling. Handb Couns Psychol, 216–37.

92. Kumprang K, Suriyankietkaew S. Mechanisms of organizational mindfulness on employee Well-Being and engagement: A Multi-Level analysis. Administrative Sci. 2024;14(6):121. https://doi.org/10.3390/admsci14060121.

93. Atanes ACM, Andreoni S, Hirayama MS, Montero-Marin J, Barros VV, Ronzani TM, Kozasa EH, Soler J, Cebolla A, Carcia-Campayo J, Demarzo MMP. Mindfulness, perceived stress, and subjective well-being: a correlational study in primary care health professionals. BMC Complement Altern Med. 2015;15(1):303. https://doi.org/10.1186/s12906-015-0823-0.

94. Caldiroli CL, Procaccia R, Negri A, Mangiatordi A, Sarandacchi S, Antonietti A, Castiglioni M. Mindfulness and mental health: the importance of a clinical intervention to prevent the effects of a traumatic event. A pilot study. Front Psychol. 2024;15:1449629. https://doi.org/10.3389/fpsyg.2024.1449629.

95. Malinowski P, Lim HJ. Mindfulness at work: positive affect, hope, and optimism mediate the relationship between dispositional mindfulness, work engagement, and well-being. Mindfulness. 2015;6:1250–62. https://doi.org/10.1007/s12671-015-0388-5.

96. McKay T, Walker BR. Mindfulness, self-compassion and wellbeing. Pers Indiv Differ. 2021;168:110412. https://doi.org/10.1016/j.paid.2020.110412.

97. Kütük H, Hatun O, Ekşi H, Ekşi F. Investigation of the relationships between mindfulness, wisdom, resilience and life satisfaction in Turkish adult population. J Rational-Emot Cognitive-Behav Ther. 2023;41(3):536–51. https://doi.org/10.1007/s10942-022-00468-w.

98. Hur WM, Shin Y, Kim JY. Service employees' mindfulness and job crafting amid COVID-19: the roles of resilience, organizational health climate, and health-Oriented leadership. Curr Psychol. 2024;1–13. https://doi.org/10.1007/s12144-023-04714-x.

99. Vu TV, Vo-Thanh T, Chi H, Nguyen NP, Nguyen DV, Zaman M. The role of perceived workplace safety practices and mindfulness in maintaining calm in employees during times of crisis. Hum Resour Manag. 2022;61(3):315–33. https://doi.org/10.1002/hrm.22101.

100. Bartlett L, Buscot MJ, Bindoff A, Chambers R, Hassed C. Mindfulness is associated with lower stress and higher work engagement in a large sample of MOOC participants. Front Psychol. 2021;12:724126. https://doi.org/10.3389/fpsyg.2021.724126.

101. Irak DU, Dede B, Demir N. Mindfulness during the COVID-19 pandemic lockdowns: intolerance uncertainty and psychological Well-Being among

employees. SAGE Open. 2024;14(2):21582440241251478. https://doi.org/10.1177/21582440241251478.

102. Chen Y, Liu D, Wu L. How public commuting stress promotes employee turnover intention: an examination through the lens of the transactional theory of stress. Anxiety Stress Coping. 2025;38(1):102–14. https://doi.org/10.1080/10615806.2024.2331835.

103. Schultz PP, Ryan RM, Niemiec CP, Legate N, Williams GC. Mindfulness, work climate, and psychological need satisfaction in employee well-being. Mindfulness. 2015;6:971–85. https://doi.org/10.1007/s12671-014-0338-7.

104. Singh NN, Lancioni GE, Karazsia BT, Myers RE, Winton AS, Latham LL, Nugent K. Effects of training staff in MBPBS on the use of physical restraints, staff stress, and turnover, staff and peer injuries, and cost-effectiveness in developmental disabilities. Mindfulness. 2015;6:926–37. https://doi.org/10.1007/s12671-014-0369-0.

105. Walsh MM, Arnold KA. The bright and dark sides of employee mindfulness: leadership style and employee well-being. Stress Health. 2020;36(3):287–98. https://doi.org/10.1002/smi.2926.

106. Daniel C, Walsh I, Mesmer-Magnus J. Mindfulness: unpacking its three shades and illuminating integrative ways to understand the construct. Int J Manage Reviews. 2022;24(4):654–83. https://doi.org/10.1111/ijmr.12296.

107. Karsan R. Calculating the cost of turnover. Employ Relations Today. 2007;34(1):33–6. https://doi.org/10.1002/ert.20139.

108. Aksu A. Employee turnover: calculation of turnover rates and costs. Handbook of hospitality human resources management. Routledge; 2008. pp. 195–222.

109. Johnson KR, Park S, Chaudhuri S. Mindfulness training in the workplace: exploring its scope and outcomes. Eur J Train Dev. 2020;44(4/5):341–54. https://doi.org/10.1108/EJTD-09-2019-0156.

110. Shahbaz W, Parker J. Workplace mindfulness: an integrative review of antecedents, mediators, and moderators. Hum Resource Manage Rev. 2022;32(3):100849. https://doi.org/10.1016/j.hrmr.2021.100849.

111. Jobbehdar Nourafkan N, Tanova C, Gokmenoglu KK. Can mindfulness improve organizational citizenship and innovative behaviors through its impact on well-being among academics? Psychol Rep. 2023;126(4):2027–48. https://doi.org/10.1177/00332941211069517.

112. Byron G, Ziedonis DM, McGrath C, Frazier JA, deTorrijos F, Fulwiler C. Implementation of mindfulness training for mental health staff: organizational context and stakeholder perspectives. Mindfulness. 2015;6:861–72. https://doi.org/10.1007/s12671-014-0330-2.

Publisher's note