Psihologia Resurselor Umane, **22** (2024), 76–89

https://doi.org/10.24837/pru.v22i2.563

RESEARCH ARTICLE

Distinguishing Gratitude and Feedback at Work: Implications for Employees' Burnout and Physical Symptoms

ELENA GABRIELA NICUȚĂ*
Department of Psychology, Faculty of Psychology and Education Sciences, Alexandru Ioan Cuza University of Iasi, Romania

TICU CONSTANTIN
Department of Psychology, Faculty of Psychology and Education Sciences, Alexandru Ioan Cuza University of Iasi, Romania

Abstract

Few studies examined the effects of receiving gratitude in organizational contexts. Moreover, no studies determined whether the effects of received gratitude at work are distinct from those of feedback. In this study, we tested whether received gratitude protects employees from burnout and physical symptoms. Moreover, we argued that received gratitude and feedback are qualitatively different types of job resources that should interact with different types of job demands in predicting employees' strain. Specifically, we hypothesized that received gratitude would interact with emotional demands, whereas feedback would interact with role ambiguity. A sample of 550 Romanian employees participated in the research. Only gratitude was a significant predictor of exhaustion and physical symptoms. Both received gratitude and feedback negatively predicted disengagement. No significant interaction effects with job demands were found. Taken together, the results suggest that received gratitude is distinct from feedback and that it may more strongly relate to employees' health.

Keywords

received gratitude, feedback, job demands, burnout, physical symptoms

Prior research suggests that gratitude plays a significant role in enhancing both well-being and performance within workplace settings. Most studies focused on the positive outcomes of *being* or *feeling* grateful and found that employees who were higher in trait and state gratitude reported a number of positive outcomes, such as increased levels of job satisfaction and work engagement, lower levels of burnout and depression, as well as more organizational citizenship behaviors (e.g., Cain et al., 2019; Guan & Jepsen, 2020; Spence et al., 2014). Fewer studies investigated the effects of *receiving* gratitude in the workplace (i.e., being the target of another person's expressed gratitude). However, the existing findings suggest that receiving gratitude at work (from the

* Correspondence concerning this article should be addressed to Elena Gabriela Nicuță, Department of Psychology, Faculty of Psychology and Education Sciences, Alexandru Ioan Cuza University of Iasi, Romania, gabriela.nicuta@uaic.ro.

supervisor, colleagues, or beneficiaries/ clients) is linked to higher levels of motivation, work engagement and performance, as well as positive spillover to employees' family lives (Lee et al., 2018; Ni et al., 2022; Nicuță et al., 2024; Tang et al., 2022). Therefore, although expressions of gratitude were given relatively little attention by researchers in work and organizational psychology, there is promise in exploring their association with various employee outcomes.

To contribute to the literature on received gratitude in the workplace, the aim of the present study was three-fold. First, we built on the job demands-resources (JD-R) model (Demerouti et al., 2001) and sought to test whether received gratitude, which we conceptualized as a job resource, could potentially prevent or reduce burnout and the physical symptoms which are often associated with burnout. Despite the extensive research on burnout, investigating the factors that help protect against it remains essential, as employees experiencing burnout are known to have heightened levels of anxiety and depression (Koutsimani et al., 2019), an increased risk of developing serious health conditions, such as cardiovascular disease (John et al., 2024), and greater susceptibility to accidents and injuries (Nahrgang et al., 2011). Additionally, burnout negatively impacts job performance, is linked to increased absenteeism, and contributes to higher turnover rates (Swider & Zimmerman, 2010), resulting in significant costs for companies (e.g., Han et al., 2019). To our knowledge, while some studies suggest that receiving gratitude may protect employees from burnout and the health problems that accompany it, the existing findings are inconsistent (e.g., Converso et al., 2015; Starkey et al., 2019). Therefore, further research is needed to clarify the role of received gratitude in mitigating burnout. The second aim of this study was to isolate the effects of received gratitude from the effects of feedback. Although there is some degree of overlap between these concepts, no previous study attempted to determine whether received gratitude relates to employee ill-being, over and above the effects of feedback. Finally, a third objective of the study was to determine whether received gratitude might reduce the negative impact of high job demands on employees' strain. Building on the demand-induced strain compensation (DISC) model (de Jonge & Dormann, 2003), we argued that one notable distinction between received gratitude and feedback might be that they are different types of job resources, which interact with different types of job demands in predicting employees' burnout and physical symptoms. In the following sections, we provide an overview of the theoretical models and empirical evidence that underpinned our hypotheses.

1.1 Received Gratitude as a Protective Job Resource – Associations with Burnout and Health Problems

According to the JD-R model (Demerouti et al., 2001), work environment characteristics, although very diverse across different types of occupations, can be classified as either job demands or job resources. Job resources are valued aspects of the job that help employees fulfill their work-related goals, as well as promote their personal development (Demerouti et al., 2001; Schaufeli & Taris, 2014). Consequently, job resources have beneficial outcomes. They help employees develop more personal resources and lead to increased work engagement and organizational commitment, as well as improved job performance (Bakker et al., 2014). Although job resources were theorized to be more closely linked to positive outcomes, they were also shown to protect against burnout. Meta-analytic work suggests that employees who have access to more job resources (such as autonomy, social support, opportunities for development, etc.) are less likely to develop burnout (Crawford et al., 2010; Lesener et al., 2019). This seems due to the fact that job resources help fulfill employees' basic needs for autonomy, competence, and relatedness, thus slowing down the energy depleting process that leads to the emergence of burnout (Van den Broeck et al., 2008).

In this study, we argue that received gratitude could also be conceptualized as a job

resource and should, therefore, mitigate employee burnout, as well as the physical health complaints that accompany it. A number of previous studies provide direct and indirect evidence for the relationship between receiving expressions of gratitude and employee burnout. First, receiving gratitude at work was shown to have an energizing effect on employees. Two studies conducted by Tang et al. (2022) found that receiving gratitude from patients creates personal resources for nurses and doctors, in the form of increased relational energy. Otherwise put, in days when employees received more appreciation from their patients, they reported feeling invigorated by the interaction with the beneficiaries of their work. Zhan et al. (2023) also found that received gratitude from patients protects nurses from ego depletion. Further, previous evidence suggests that, in a similar manner to other job resources, received gratitude promotes the satisfaction of employees' basic psychological needs (Nicuță et al., 2024). Employees themselves seem to acknowledge the benefits of receiving gratitude in the workplace. A survey conducted on palliative care professionals indicated that a majority of them considered that receiving gratitude from patients and their relatives is a source of support in difficult times, that it reduces burnout and protects against compassion fatigue (Aparicio, Centeno, Juliá, & Arantzamendi, 2022).

Insofar as we are aware, to date, only Converso et al. (2015) have made an attempt to explicitly investigate the effect of received gratitude at work on burnout. The results of their research indicated that received gratitude was negatively related to emotional exhaustion and depersonalization in some participants (i.e., oncology nurses), but not in others (i.e., emergency nurses). These inconsistent findings suggest that there is a need for more research regarding the effect of received gratitude on employees' burnout. In this study, we sought to test whether the protective effect of gratitude at work would also extend to other categories of employees. In line with the JD-R model (Bakker et al., 2014; Demerouti et al., 2001) and the empirical evidence presented above, we hypothesized that received gratitude would be negatively related to burnout (H1).

Previous studies grounded in the JD-R model also showed that, in addition to preventing burnout, job resources predict fewer health problems in employees (e.g., Martinussen et al., 2007; Mayerl et al., 2016; Schaufeli & Bakker, 2004). In this study, we sought to investigate whether received gratitude could play a similar protective role in relation to employees' health. Two previous studies tested whether receiving gratitude at work could be related to employees' health complaints. One study found that nurses who felt that they were more appreciated at work also reported lower back pain intensity and less impairment related to lower back pain (Elfering et al., 2017). Further, in a weekly diary study conducted on acute care nurses, Starkey et al. (2019) investigated the effect of receiving gratitude expressions on sleep quality and adequacy, headaches, and healthy eating. The results showed that, at the week level, there was a positive, yet small correlation between received gratitude and sleep quality. However, received gratitude at work was indirectly related to the other health measures through satisfaction with quality care. In weeks when nurses received more gratitude, they evaluated the results of their work more positively, which in turn resulted in improved sleep adequacy, less frequent headaches, and more attempts to eat healthily.

Much like the research investigating the effect of received gratitude on burnout, these studies were conducted on a very specific category of employees (nurses) and reported mixed results (i.e., received gratitude was significantly associated with some symptoms but only indirectly associated with others). Moreover, these studies did not include a comprehensive measure of health complaints and focused on very specific symptoms (e.g., lower back pain, headaches). Therefore, in our study, we aimed to add to the literature by investigating how receiving gratitude relates to employees' physical symptoms in a diverse sample of employees. Drawing on past research that highlighted the health-protective nature of job resources for employees, we expected that received gratitude at work would be negatively related to employees' heath symptoms (H2).

1.2 Disentangling the Effects of Received Gratitude from the Effects of Feedback

When investigating the effects of expressions of gratitude in the workplace, it is worth examining whether they are different from those of feedback. Previous studies indicate that feedback is a valuable job resource. Consistent evidence suggests that employees who received more feedback in their workplace were at a lower risk of experiencing burnout (e.g., Bakker et al., 2005; Gong et al., 2017; Kozak et al., 2013; Schaufeli et al., 2009; Xanthopoulou et al., 2007) and reported better general health (Kozak et al., 2013; Schaufeli & Bakker, 2004). Most of these studies did not differentiate between positive and negative feedback and defined feedback as the quantity and quality of information employees received about their performance (from the job itself, from the supervisor or coworkers etc.). However, it is important to note that feedback consisting solely of unfavorable comments can be associated with increased burnout (van Emmerik et al., 2004; Xing et al., 2021). In this paper, we refer to feedback as highlighting both positive and negative aspects of one's performance.

Expressions of gratitude might be considered a sub-type of feedback, seeing that they inherently communicate to the employees that others evaluated their performance favorably. In fact, a study using focus groups found that employees sometimes used the terms "gratitude" and "feedback" interchangeably (Beck, 2016). Therefore, one could ask – is received gratitude old wine in new bottles? Are "received gratitude" and "feedback" alternative terms that describe the same situations? The same study seems to offer a tentative answer to this question. Participants in Beck's research acknowledged that while feedback places a greater emphasis on assessment, receiving gratitude indicates that the manager "went out of their way to let [the employees] know [their] efforts were appreciated" (p. 343). When asked about the significance of gratitude relative to feedback, the majority of the participants in Beck's survey answered that they were equally important. These results seem to suggest that showing gratitude in the workplace alongside feedback serves a distinct purpose and is not redundant. Therefore, in this study, we expected that received gratitude would have a significant effect on employees' burnout and physical health, even after controlling for the effect of feedback.

1.3 The Moderating Effect of Received Gratitude and Feedback on the Relationship between Job Demands and Employees' Burnout

The JD-R theory (Bakker et al., 2014) argues that job demands initiate a health impairment process. In order to cope with job demands, employees need to exert significant physical and mental effort, which ultimately drains their energy. Previous literature consistently indicated that high levels of job demands (e.g., role ambiguity, role conflict, or emotional demands) predicted burnout (see Alarcon, 2011; Lesener et al., 2019 for meta-analyses). Moreover, employees who have to deal with significant job demands for extended periods of time are more at risk of developing physical symptoms (e.g., Bakker et al., 2010; Chen & Kao, 2012; Moreno-Jiménez et al., 2012; Roelen et al., 2008).

However, in a work environment were job demands are accompanied by abundant job resources, the psychological and physical costs of job demands might be diminished. According to the JD-R theory (Bakker et al., 2014), job resources are expected to moderate the negative impact of job demands on burnout. Nonetheless, empirical evidence regarding the buffering role of job resources in the relationship between job demands and burnout is mixed. In line with the theoretical model, a number of studies reported that job demands had a weaker effect on employees' burnout when job resources were high (e.g., Bakker et al., 2005; Fadare et al., 2022; Xanthopoulou et al., 2007). In contrast, some research reported non-significant interaction effects (e.g., Hartwig et al., 2020; Martinez et al., 2023), whereas other studies reported evidence for a reverse buffering effect. For instance, in a meta-analysis conducted by Mathieu et al. (2019), the authors found that

emotional support buffered the effect of stressors on strain in about half of the studies that were included in the analysis, whereas an exacerbating effect was reported by the rest of the studies.

The DISC model (de Jonge & Dormann, 2003; de Jonge et al., 2008) might shed some light on these conflicting results. According to the de Jonge & Dormann, when employees are confronted with a job demand, they will first rely on their internal resources in order to manage this situation. If this attempt is not successful (i.e., the internal resources are depleted), the employees will turn to matching external resources as a way to compensate for the negative impact of the job demand. Only when such matching job resources do not exist will the employees resort to non-matching job resources. For example, according to the model, the effect of emotional job stressors on employees' burnout is more likely to be attenuated by emotional, rather than cognitive, job resources. This situation is called "a double-match of common kind". In addition, the triple match principle posits that interaction effects between job demands and job resources are more likely to occur when the outcome variable is qualitatively similar to the demands and resources that were taken into consideration (e.g., the interaction between *emotional* job demands and *emotional* job resources in predicting *emotional* exhaustion).

As outlined in the introduction, in this study we aimed to test whether received gratitude might buffer the impact of job demands on employees' burnout and physical symptoms. Previously, Converso et al. (2015) found that received gratitude did not significantly interact with psychological demands in predicting either emotional exhaustion or depersonalization. However, the relatively small number of participants in Converso et al.'s study increases the probability of a false negative error. Therefore, research conducted on larger samples is needed regarding the possible moderating effect of received gratitude in the relationship between job demands and burnout. Moreover, the non-significant interaction reported by Converso et al. could be due to the fact that there was no match between the job demands that the authors evaluated and received gratitude, as a job resource. Defined as the mental effort employees require in order to fulfill their duties, psychological demands seem to be a cognitive stressor, which might be less likely to be buffered by gratitude.

In this study, we drew on the DISC model (de Jonge et al., 2008) and argued that another distinction between received gratitude and feedback might lie in the fact that they are qualitatively different types of job resources which buffer the adverse impact of different types of job demands. Specifically, because feedback provides employees with information about their performance, as well as how they could improve their work in the future, it could be regarded as a cognitive resource and should protect against the negative impact of high cognitive demands. A number of cognitive job demands were previously described in the literature, such as time pressure, role conflict, role ambiguity, complex problem solving, or vigilance (e.g., Abbasi & Bordia, 2019). In this paper, we specifically tested the interaction between feedback and role ambiguity. Unlike other cognitive job demands (e.g., complex problem solving), role ambiguity can arise in virtually any profession—from entry-level positions to managerial roles—whenever there is a lack of clarity in the duties that need to be fulfilled by an employee. We also chose role ambiguity as a cognitive demand in this study because we believe that there is a better match between feedback and role ambiguity than between feedback and other job demands (e.g., vigilence). This is because feedback addresses employees' uncertainties, providing them with guidance on how to perform their tasks and/ or information about expected results.

Compared to feedback, gratitude expressions appear to place less emphasis on analysing past performance and providing recommendations for the future. Previous literature indicates that expressions of gratitude are linked to perceptions of interpersonal warmth and serve as a means to strengthen social bonds (e.g., Williams & Bartlett, 2015). Consequently, we propose that expressions of gratitude act as an emotional resource that interacts with emotional demands rather than with cognitive demands. For example, managing a class of unruly

students may imply both emotional and cognitive demands for teachers. When parents express appreciation for a teacher's patience and dedication, they do not offer advice on managing student behavior (which would help alleviate the cognitive demands). Instead, parents' gratitude highlights the value of the teacher's efforts, helping them feel understood and more connected to their beneficiaries. This connection may provide the teacher with the resources needed to better navigate the emotional demands of their role.

To summarize, given the differences between feedback and gratitude, in this study we expected that received gratitude would alleviate the negative impact of emotional job demands (rather than cognitive demands) on employee burnout and physical symptoms, whereas feedback should diminish the negative effects of high cognitive job demands (i.e., role ambiguity) (H3).

2. Method

2.1 Participants and Procedure

The sample consisted of 550 Romanian employees (75.1 % female), aged between 20 and 73 years (M = 37.51, SD = 10.71). In terms of education, 1.6% had completed lower secondary education, 23.3% had a high school diploma, 1.6% had pursued tertiary non-university education, 35.1% had a Bachelor's degree, and 38.4% had a Master's degree (or higher). Participants had an average tenure in their current organizations of 8.22 years (SD = 8.52). They were employed in a variety of professions (e.g., in healthcare, education, hospitality, finance, engineering, retail, etc.) and were working for both state institutions (34.7%) and private organizations (65.3%). Most participants reported having full-time jobs (94%) and reported holding non-management roles (78.9%).

Undergraduate psychology students enrolled in a Work Psychology course helped recruit the participants. Students were asked to contact one or two people within their social network who might have been willing to participate in a psychological study that investigated employee health. The only requirements for participation in the study were being at least 18 years of age and having been employed for at least 6 months at the time of the research. Written informed consent was obtained from those interested in taking part in the study. The questionnaires were then completed online. Participant anonymity was guaranteed. Students were provided course credit as compensation for their assistance in recruiting participants.

2.2 Instruments

Unless otherwise specified, for all questionnaires, items were rated on a scale from 1 = *completely disagree* to 5 = *completely agree*.

Received Gratitude

Received gratitude was measured using a scale adapted from Tang et al. (2022). The scale consists of 3 items, asking participants to indicate the extent to which they receive appreciation in their workplace from their colleagues, supervisor, or beneficiaries (e.g., "My beneficiaries are grateful to me."). The items were added up into a total score (α = .93).

Feedback

The extent to which participants received feedback regarding their work was measured using the Feedback from Others subscale from the Work Design Questionnaire (Morgeson & Humphrey, 2005). The scale consists of 3 items (e.g., "I receive a great deal of information from my manager and coworkers about my job performance"), which were summed up to form a total score (α = .81).

Job Demands

Two job demands were measured in this study. We used scales from the Copenhagen Psychosocial Questionnaire, third version (Burr et al., 2019) to evaluate emotional demands (3 items; e.g., "Do you have to deal with other people's personal problems as part of your work?"; α = .84) and role ambiguity (by reverse coding 3 items that measured role clarity; e.g., "Do you know exactly which areas are your responsibility?"; α = .84). The scales had good internal consistency (α = .84 for both scales).

Burnout

Burnout was measured using the Oldenburg Burnout Inventory (Halbesleben & Demerouti, 2005). The 16-item questionnaire assesses employees' levels of exhaustion (e.g., "There are days when I feel tired before I arrive at work.") and disengagement (e.g., "Lately, I tend to think less at work and do my job almost mechanically.") (α = .81 for disengagement; .83 for exhaustion).

Physical symptoms

Physical symptoms were assessed with a shortened version of the Physical Symptoms Inventory (PSI; Spector & Jex, 1998). The scale comprises 12 items, which represent various physical symptoms (e.g., "headache", "tiredness or fatigue"). Participants are asked to indicate how often they experienced each of these symptoms during the last 30 days, using a scale from 1 = *not at all* to 5 = *every day*. A total score was computed by summing up all items (α = .86).

2.3 Overview of the Analyses

Preliminary analyses were run to determine whether participants' socio-demographic and work-related factors (i.e., age/ tenure, gender, type of employer, type of position) were related to the main variables of the study. Zero-order correlations among the study variables were then computed. Hierarchical regression analyses were used to test the main effects of received gratitude, feedback, and the two job demands on employees' exhaustion, disengagement, and physical symptoms, as well as the interactions between job resources and job demands in predicting these criteria.

3. Results

3.1 Preliminary Analyses

Correlation analyses revealed that employees' tenure was negatively related to exhaustion (r = -.137) and disengagement (r = - .208), all ps < .001. Moreover, men reported less exhaustion than women – $M(SD)_{men}$ = 20.21 (6.22) *vs* $M(SD)_{women}$ = 22.23 (6.12), $t(548)$ = - 3.31, p = .001. Male participants also reported less physical symptoms compared with female participants – $M(SD)_{men}$ = 23.44(8.39) *vs* $M(SD)_{women}$ = 27.07(8.71), $t(548)$ = - 4.26, p < .001. Employees who worked for private companies reported more exhaustion than employees working for state institutions – $M(SD)_{private}$ = 22.44(6.34) *vs* $M(SD)_{state}$ = 20.38(5.71), $t(548)$ = 3.74, p < .001. They also reported more disengagement – $M(SD)_{private}$ = 22.09(6.67) *vs* $M(SD)_{state}$ = 18.08 (5.53), $t(453.52)$ = 7.52, p < .001 and more physical symptoms – M (SD) = 26.84(9.02) *vs* $M(SD)$ = 24.91(8.14), $t(423.20)$ = 2.54, p = .01, compared with employees working in state institutions. No other relationships were significant. Given the results of the preliminary analyses, we controlled for employees' gender, tenure and type of employer in the regression analyses.

3.2 Correlations among Job Resources, Job Demands, Burnout and Physical Symptoms

Descriptive statistics and zero-order correlations among the main study variables are displayed in Table 1. There was a positive association between received gratitude and feedback. Both received gratitude and feedback were negatively associated with exhaustion, disengagement, and physical symptoms. Job demands (emotional demands and role ambiguity) were positively associated with the dimensions of burnout, as well as physical symptoms.

3.2 Regression Analyses

In order to test the hypotheses, three hierarchical regression models were run (one for each dependent variable). In the first step, socio-demographic and work-related variables were entered in the model. In the second step, we entered received gratitude, feedback, and job demands. Finally, in the third step, the interaction terms were added. The variables were mean-centered before computing the cross-product terms.

The full results of these analyses are presented in Table 2. Participants' gender (β = .15, b = 2.21, p < .001), tenure (β = - .10, b = - .06, p = .01), and type of employer (β =.13, b = .17, p < .001) accounted for 5% of the variation in exhaustion. Adding received gratitude, feedback, emotional demands and role ambiguity to the model explained an

Table 1. *Means, Standard Deviations, and Correlations among the Main Variables of the Study*

Variable	*M*	*SD*	1	2	3	4	5
1. Received gratitude	14.64	4.02					
2. Feedback	9.74	3.19	.603***				
3. Emotional demands	8.82	3.72	-.095*	.025			
4. Role ambiguity	5.05	2.45	-.381***	-.269***	.146***		
5. Exhaustion	21.72	6.20	-.414***	-.221***	.351***	.381***	
6. Disengagement	20.70	6.57	-.491***	-.360***	.173***	.430***	.671***
7. Physical symptoms	26.17	8.77	-.241***	-.118**	.270***	.286***	.564***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

additional 30% of the variation in exhaustion. Received gratitude was the most important predictor of employees' exhaustion (β = -.33, *b* = - .51, *p* < .001). Emotional demands (β = .30, *b* = .51, *p* < .001) and role ambiguity (β = .18, *b* = .45, *p* < .001) were positive predictors in this model. Feedback was not a significant predictor of exhaustion (β = .03, *b* =.08, *p* = .53). Introducing the interaction terms to the model in the third step did not explain more of the variation in employees' exhaustion. Therefore, we found no evidence for the moderating role of received gratitude/ feedback in the relation between job demands and exhaustion.

The socio-demographic variables explained 9% of the variation in disengagement, with tenure (β = - .13, *b* = -.08, *p* = .001) and the type of employer (β = .25, *b* = .346, *p* < .001) (but not gender) being significant predictors. Job resources and job demands accounted for an additional 28%. The results were similar to those obtained in the case of exhaustion. Specifically, received gratitude was the most important predictor of disengagement (β = -.32, B = - .53, *p* < .001). Feedback was a marginally significant and negative predictor (β = -.07, *b* =- .15, *p* = .07), whereas role ambiguity (β = .19, *b* = .53, *p* < .001) and emotional job demands (β = .15, *b* = .27, *p* < .001) were positive predictors of disengagement. Entering the interaction terms to the model did not result in an improvement of the model. None of the interaction terms were significant predictors of disengagement.

The socio-demographic variables accounted for 4% of the variation in physical symptoms. Gender (β = .18, *b* = 3.81, *p* < .001) and the type of employer (β = .10, *b* = 1.83, *p* = .02) were the significant predictors in this first step of the model. Adding job demands and job resources to the model explained an additional 14% of the variation in physical symptoms. Emotional demands (β = .23, *b* = .54, *p* < .001) were the most important predictor, followed by received gratitude (β = -.17, *b* = .38, *p* < .001) and role ambiguity (β = .16, *b* = .60, *p* < .001). Feedback was not a significant predictor of physical symptoms (β = .03, *b* = .08, *p* = .53). Entering the interaction terms in the third step of the model did not account for additional variation in the criterion variable.

Table 2. *Results of the Hierarchical Regression Analyses Testing the Hypotheses*

	Exhaustion			Disengagement			Physical symptoms		
Predictor	Controlled variables	Main effects model	Moderation model	Controlled variables	Main effects model	Moderation model	Controlled variables	Main effects model	Moderation model
Gender	.15***	.15***	.15***	-.02	-.00	-.00	.18***	.18***	.18***
Tenure	-.10*	-.08*	-.09*	-.13**	-.10**	-.10**	-.05	-.04	-.04
Employer	.13**	.13**	.13**	.25***	.20***	.20***	.10*	.09*	.09*
Received gratitude		-.33***	-.33***		-.32***	-.32***		-.17***	-.16**
Feedback		.03	.03		-.07	-.07		.03	.03
Emotional demands		.30***	.30***		.15***	.15***		.23***	.23***
Role ambiguity		.18***	.17***		.19***	.20***		.16***	.18***
Received gratitude x emotional demands			-.01			-.03			- .09
Received gratitude x role ambiguity			-.03			-.00			.01
Feedback x emotional demands			.02			.01			.07
Feedback x role ambiguity			.02			.03			.04
adjusted R^2	.05	.35	.35	.09	.37	.37	.04	.18	.18
ΔR^2		.30	.00		.28	.00		.14	.00
F change		64.57***	.26		62.07***	.43		24.91***	1.14

Note. The values represent unstandardized coefficients. * $p < .05$, ** $p < .01$, *** $p < .01$

Discussion

Even though some progress has been made in recent years regarding the study of gratitude in the workplace, this area of research is still underexplored. To advance the literature, the present study aimed to investigate how receiving gratitude relates to employees' burnout and physical symptoms, as well as whether received gratitude might moderate the impact of job demands on employees' strain. While seeking to provide answers to these research questions, we also explored a) whether the effects of receiving gratitude are significant after accounting for feedback and b) whether gratitude and feedback might be distinguished from one another by the way they interact with different types of job stressors.

In line with our hypotheses (H1 & H2), correlation analyses indicated that received gratitude was negatively linked to both burnout dimensions, as well as to the physical symptoms reported by the participants. These results suggest that received gratitude is comparable to other job resources investigated under the JD-R framework (Bakker et al., 2014), which were consistently shown to prevent and reduce employee strain (Crawford et al., 2010; Lesener et al., 2019). Moreover, these findings support and extend previous empirical work (Converso et al., 2015; Elfering et al., 2017; Starkey et al., 2019), by showing that the protective effects of receiving gratitude are applicable to a wider range of employees, not just to those whose jobs are in healthcare. Future studies might investigate possible moderators in these relationships. For example, Tang et al. (2022) found that occupational identity amplified the effect of received gratitude from patients on employees' relational energy. In a similar manner, it could be that the positive effect of received gratitude on burnout is stronger for employees who define themselves based on their professional group.

Correlation analyses showed that feedback was also negatively related to exhaustion, disengagement, and physical symptoms, a result which was previously reported by other studies (e.g., Kozak et al., 2013; Schaufeli et al., 2009). However, when both received gratitude and feedback were entered in the regression analyses, only received gratitude remained a significant predictor of exhaustion and physical symptoms. Both received gratitude and feedback negatively predicted employee disengagement, although the effect of feedback was only marginally significant. These results suggest that, when ill-being is considered as an outcome, employees might derive more benefit from receiving gratitude than from receiving feedback. Compared with received gratitude, feedback might be less strongly associated with exhaustion and physical symptoms because of its dual nature. On the one hand, feedback replenishes employees' energy resources because it provides a sense of validation by conveying to the employees that they are competent and valued. On the other hand, feedback also includes details about what needs to be improved; thus, further effort is required from the employees to address those issues (which might actually contribute to their exhaustion). Moreover, it is possible that feedback has a reduced impact compared with gratitude because it is a standard practice in most organizations and it is something that employees are entitled to receive. In contrast, employees do not typically expect gratitude from supervisors and colleagues, which may enhance its effect. Supporting this notion, previous qualitative research indicates that the element of surprise in expressions of gratitude can make them more impactful and memorable. In their study on palliative care professionals, Aparicio, Centeno, Robinson, & Arantzamendi (2022) found that unexpected expressions of gratitude, which seemed undeserved in relation to the work the employees believed they had contributed, held special significance for the participants and left a lasting impression. More work is needed in order to determine what factors might explain the differential impact of gratitude and feedback on employees' burnout and health.

Contrary to our hypothesis, we did not find support for the moderating role of either received gratitude or feedback in the relation between job demands and burnout/ physical symptoms. Both matching (e.g., received gratitude x emotional demands) and non-matching (e.g, received gratitude x role ambiguity) interaction terms were non-

significant in the regression analyses, suggesting that feedback and received gratitude do not buffer the impact of job stressors, regardless of whether they are qualitatively similar or not. These results diverge from the interaction effects that are proposed within the JD-R model (Demerouti et al., 2001), but align with a growing number of empirical studies reporting job resources did not mitigate the adverse effects of job demands (e.g., Converso et al., 2015; Hartwig et al., 2020; Martinez et al., 2023). Future research could consider conducting a more in-depth analysis of the relationship between gratitude, job demands, and employees' strain. First, according to the DISC model (de Jonge et al., 2008), the chances of finding significant interactions would have been higher if the outcomes had also matched the demands and the resources (i.e., the triple matching effect). In this paper, we tested a double-match of common kind, i.e., the interaction between similar types of job demands and job resources, without considering the match with the outcome (e.g., the scale used to measure exhaustion includes items which refer to emotional, cognitive, and physical exhaustion, aligning with a broader conceptualization of this dimension of burnout as proposed within the JD-R model). Had moderation emerged under these conditions, it would have been a notable finding, suggesting a particularly robust interaction effect even without isolating emotional exhaustion or fully matching the outcome to the investigated resources and demands. Future studies might however employ measures of emotional exhaustion when testing the interaction between received gratitude and emotional demands. Second, it is worth pointing out that this study assessed a limited number of job demands. Future research might investigate whether received gratitude interacts with other job characteristics in predicting employees' strain. For example, one could wonder whether receiving gratitude from one's beneficiaries/ clients could buffer against the negative effects of a lack of formal recognition. Third, future studies might test whether the moderating effect of received gratitude in the relationship between job demands and burnout depends on the characteristics of the employee. It might be that received gratitude has a buffering effect for some employees, but not for others. For example, using a large sample of faculty members, Xu & Payne (2020) found that task discretion (as a job resource) had a buffering effect in the relationship between task ambiguity (as a job demand) and employee well-being only for employees who were low in self-efficacy. Similarly, employees who are low in self-efficacy could derive greater benefit from receiving appreciation in the workplace, seeing that such recognition would serve to reaffirm their competencies.

This study has a number of theoretical and practical implications. From a theoretical standpoint, the present research represents the first attempt to disentangle the effect of received gratitude from those of feedback. The results advance our understanding of received gratitude in the workplace, by showing that it is distinct from feedback and that it might be have stronger effects against burnout and physical symptoms than feedback. From a practical perspective, the results of this study suggest that an organizational culture which promotes gratitude might result in important benefits for employees, as well as for the organization as a whole. By protecting employees from exhaustion and disengagement, expressions of appreciation could help prevent the costs associated with burnout, translating into improved mental health and job performance, decreased levels of absenteeism, increased job satisfaction, and better employee retention (Alarcon, 2011; Koutsimani et al., 2019; Swider & Zimmerman, 2010). Consequently, efforts directed at making expressions of gratitude more frequent within organizations could be one inexpensive way to improve employees' well-being. To date, most interventions were developed with the aim of increasing employees' own *felt* gratitude (e.g., Adair et al., 2018; Komase et al., 2019; Locklear et al., 2021). However, the existent interventions could be easily adapted so that they also target *received* gratitude. For example, gratitude letters were shown to decrease burnout in those employees who wrote them (Adair et al., 2018). This intervention could be modified to also include a second part, where the letter is actually sent to its intended recipient. It could be expected that receiving such gratitude letters would also positively

impact employees' burnout. In addition to highlighting the benefits of cultivating gratitude, these findings suggest that organizations looking to reduce employee burnout should consider lowering demands, as simply providing more resources may not be a sufficient buffer to protect employees from the adverse effects of high job demands.

This research is not without limitations. First, the study used a cross-sectional design that does not allow causal inferences. Consequently, longitudinal and experimental studies are needed to establish whether received gratitude is a determinant of employees' burnout. Secondly, the use of self-report measures might artificially increase the associations among the variables. Future studies might consider including objective measures of employees' health status and test whether they are linked to received gratitude. Third, another potential limitation of this study is linked to the recruitment of participants via undergraduate psychology students, which may have negatively affected the diversity of the sample. Although the sample included employees with diverse professional backgrounds, most participants had relatively high levels of education and held positions that required specialized knowledge and skills. Therefore, the results should be generalized with caution to other categories of employees. This homogeneity may be attributed to the fact that the sample was primarily drawn from the students' friends and family networks. Future studies should consider using other recruitment strategies and testing these hypothesis on samples with different characteristics (e.g., unskilled and part-time workers).

To conclude, the results of the present study suggest that gratitude in the workplace is a resource that could play an important role in protecting employees' health. Expressions of gratitude are more than conventional etiquette: they signal that the employees' contributions are important and appreciated, thus preventing depletion and disengagement, as well as the physical symptoms that accompany them. New interventions might be developed based on these findings in order to take advantage of the positive effects of received gratitude in organizational settings.

References

Abbasi, A. A., & Bordia, P. (2019). Thinking, young and old: Cognitive job demands and strain across the lifespan. *Work, Aging and Retirement*, *5*(1), 91–113. https://doi.org/10.1093/workar/way013

Adair, K. C., Rodriguez-Homs, L. G., Masoud, S., Mosca, P. J., & Sexton, J. B. (2020). Gratitude at work: prospective cohort study of a web-based, single-exposure well-being intervention for health care workers. *Journal of Medical Internet Research*, *22*(5), e15562. https://doi.org/10.2196/15562

Alarcon, G. M. (2011). A meta-analysis of burnout with job demands, resources, and attitudes. *Journal of Vocational Behavior*, *79*(2), 549–562. https://doi.org/10.1016/j.jvb.2011.03.007

Aparicio, M., Centeno, C., Juliá, G., & Arantzamendi, M. (2022). Gratitude from patients and relatives in palliative care—characteristics and impact: a national survey. *BMJ Supportive & Palliative Care*, *12*(e4), e562–e569. http://dx.doi.org/10.1136/bmjspcare-2019-001858

Aparicio, M., Centeno, C., Robinson, C. A., & Arantzamendi, M. (2022). Palliative professionals' experiences of receiving gratitude: a transformative and protective resource. *Qualitative Health Research*, *32*(7), 1126–1138. https://doi.org/10.1177/10497323221097247

Bakker, A. B., Boyd, C. M., Dollard, M., Gillespie, N., Winefield, A. H., & Stough, C. (2010). The role of personality in the job demands-resources model: A study of Australian academic staff. *The Career Development International*, *15*(7), 622–636. https://doi.org/10.1108/13620431011094050

Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job Resources Buffer the Impact of Job Demands on Burnout. *Journal of Occupational Health Psychology*, *10*(2), 170–180. https://doi.org/10.1037/1076-8998.10.2.170

Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. I. (2014). Burnout and work engagement: The JD–R approach. *Annual Review of Organizational Psychology and Organizational Behavior*, *1*, 389–411. https://doi.org/10.1146/annurev-orgpsych-031413-091235

Beck, C. W. (2016). Perceptions of thanks in the workplace: Use, effectiveness, and dark sides of managerial gratitude. *Corporate Communications: An International Journal*, *21*(3), 333–351. https://doi.org/10.1108/CCIJ-07-2014-0048

Burr, H., Berthelsen, H., Moncada, S., Nübling, M., Dupret, E., Demiral, Y., ... & Pohrt, A. (2019). The third version of the Copenhagen psychosocial questionnaire. *Safety and Health at Work*, *10*(4), 482–503. https://doi.org/10.1016/j.shaw.2019.10.002

Cain, I. H., Cairo, A., Duffy, M., Meli, L., Rye, M. S., & Worthington Jr, E. L. (2019). Measuring gratitude at work. *The Journal of Positive Psychology*, *14*(4), 440–451. https://doi.org/10.1080/17439760.2018.1484936

Chen, C. F., & Kao, Y. L. (2012). Investigating the antecedents and consequences of burnout and isolation among flight attendants. *Tourism Management*, *33*(4), 868–874. https://doi.org/10.1016/j.tourman.2011.09.008

Converso, D., Loera, B., Viotti, S., & Martini, M. (2015). Do positive relations with patients play a protective role for healthcare employees? Effects of patients' gratitude and support on nurses' burnout. *Frontiers in Psychology*, *6*, 470. https://doi.org/10.3389/fpsyg.2015.00470

Crawford, E. R., LePine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: A theoretical extension and meta-analytic test. *Journal of Applied Psychology*, *95*(5), 834–848. https://doi.org/10.1037/a0019364

de Jonge, J., & Dormann, C. (2003). The DISC Model: demand-induced strain compensation mechanisms in job stress. In: M. F. Dollard, A. H. Winefield, & H.R. Winefield (Eds.), *Occupational Stress in the Service Professions* (pp. 43–74), Taylor & Francis, London

de Jonge, J., Dormann, C., & Tooren, M. v. d. (2008). The Demand-Induced Strain Compensation model: Renewed theoretical considerations and empirical evidence. In K. Näswall, J. Hellgren, & M. Sverke (Eds.), *The Individual in the Changing Working Life* (pp. 67–87). Cambridge University Press. https://doi.org/10.1017/CBO9780511490064.004

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*(3), 499–512. https://doi.org/10.1037/0021-9010.86.3.499

Elfering, A., Häfliger, E., Celik, Z., & Grebner, S. (2018). Lower back pain in nurses working in home care: Linked to work–family conflict, emotional dissonance, and appreciation*? Psychology, Health & Medicine*, *23*(6), 733–740. https://doi.org/10.1080/13548506.2017.1417614

Fadare, O. O., Doucette, W. R., Gaither, C. A., Schommer, J. C., Arya, V., Bakken, B. K., ... & Witry, M. J. (2022). Exploring the moderating role of job resources in how job demands influence burnout and professional fulfillment among US pharmacists. *Research in Social and Administrative Pharmacy*, *18*(10), 3821–3830. https://doi.org/10.1016/j.sapharm.2022.04.003

Gong, Z., Zhang, J., Zhao, Y., & Yin, L. (2017). The relationship between feedback environment, feedback orientation, psychological empowerment and burnout among police in China. *Policing: An International Journal of Police Strategies & Management*, *40*(2), 336–350. https://doi.org/10.1177/2158244020983305

Guan, B., & Jepsen, D. M. (2020). Burnout from emotion regulation at work: The moderating role of gratitude. *Personality and Individual Differences*, *156*, 109703. https://doi.org/10.1016/j.paid.2019.109703

Halbesleben, J. R., & Demerouti, E. (2005). The construct validity of an alternative measure of burnout: Investigating the English translation of the Oldenburg Burnout Inventory. *Work & Stress*, *19*(3), 208–220. https://doi.org/10.1080/02678370500340728

Han, S., Shanafelt, T. D., Sinsky, C. A., Awad, K. M., Dyrbye, L. N., Fiscus, L. C., Trockel, M., & Goh, J. (2019). Estimating the Attributable Cost of Physician Burnout in the United States. *Annals of Internal Medicine*, *170*(11), 784–790. https://doi.org/10.7326/M18-1422

Hartwig, M., Wirth, M., & Bonin, D. (2020). Insights about mental health aspects at intralogistics workplaces–A field study. *International Journal of Industrial Ergonomics*, *76*, 102944. https://doi.org/10.1016/j.ergon.2020.102944

John, A., Bouillon-Minois, J. B., Bagheri, R., Pélissier, C., Charbotel, B., Llorca, P. M., ... & Dutheil, F. (2024). The influence of burnout on cardiovascular disease: a systematic review and meta-analysis. *Frontiers in Psychiatry*, *15*, Article 1326745. https://doi.org/10.3389/fpsyt.2024.1326745

Komase, Y., Watanabe, K., Imamura, K., & Kawakami, N. (2019). Effects of a newly developed gratitude intervention program on work engagement among Japanese workers: A pre-and posttest study. *Journal of Occupational and Environmental Medicine*, *61*(9), e378–e383. https://doi.org/10.1097/JOM.0000000000001661

Koutsimani, P., Montgomery, A., & Georganta, K. (2019). The relationship between burnout, depression, and anxiety: A systematic review and meta-analysis. *Frontiers in Psychology*, *10*, Article 284. https://doi.org/10.3389/fpsyg.2019.00284

Kozak, A., Kersten, M., Schillmöller, Z., & Nienhaus, A. (2013). Psychosocial work-related predictors and consequences of personal burnout among staff working with people with intellectual disabilities. *Research in Developmental Disabilities*, *34*(1), 102–115. https://doi.org/10.1016/j.ridd.2012.07.021

Lee, H. W., Bradburn, J., Johnson, R. E., Lin, S.-H. (J.), & Chang, C.-H. (D.). (2019). The benefits of receiving gratitude for helpers: A daily investigation of proactive and reactive helping at work. *Journal of Applied Psychology*, *104*(2), 197–213. https://doi.org/10.1037/apl0000346

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

Locklear, L. R., Taylor, S. G., & Ambrose, M. L. (2021). How a gratitude intervention influences workplace mistreatment: A multiple mediation model. *Journal of Applied Psychology*, *106*(9), 1314–1331. https://doi.org/10.1037/apl0000825

Martinez, R. N., Bryant-Lees, K. B., Mulhearn, T. J., Goodman, T., Ounpraseuth, S., Thompson, W., & Chappelle, W. L. (2023). Assessing work role strain, burnout, and job satisfaction among remotely piloted aircraft operators: the moderating role of unit social support. *Psychology, Health & Medicine*, *28*(3), 785–798. https://doi.org/10.1080/13548506.2022.2075019

Martinussen, M., Richardsen, A. M., & Burke, R. J. (2007). Job demands, job resources, and burnout among police officers. *Journal of Criminal Justice*, *35*(3), 239–249. https://doi.org/10.1016/j.jcrimjus.2007.03.001

Mathieu, M., Eschleman, K. J., & Cheng, D. (2019). Meta-analytic and multiwave comparison of emotional support and instrumental support in the workplace. *Journal of Occupational Health Psychology*, *24*(3), 387–409. https://doi.org/10.1037/ocp0000135

Mayerl, H., Stolz, E., Waxenegger, A., Rásky, É., & Freidl, W. (2016). The role of personal and job resources in the relationship between psychosocial job demands, mental strain, and health problems. *Frontiers in Psychology*, 7, 1214. https://doi.org/10.3389/fpsyg.2016.01214

Moreno-Jiménez, B., Rodríguez-Muñoz, A., Sanz-Vergel, A. I., & Garrosa, E. (2012). Elucidating the role of recovery experiences in the job demands-resources model. *The Spanish Journal of Psychology*, *15*(2), 659–669. https://doi.org/10.5209/rev_SJOP.2012.v15.n2.38877

Morgeson, F. P., & Humphrey, S. E. (2006). The Work Design Questionnaire (WDQ): Developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology*, *91*(6), 1321–1339. https://doi.org/10.1037/0021-9010.91.6.1321

Nahrgang, J. D., Morgeson, F. P., & Hofmann, D. A. (2011). Safety at work: A meta-analytic investigation of the link between job demands, job resources, burnout, engagement, and safety outcomes. *Journal of Applied Psychology*, *96*(1), 71–94. https://doi.org/10.1037/a0021484

Ni, D., Song, L. J., Zheng, X., Zhu, J., Zhang, M., & Xu, L. (2022). Extending a helping hand: How receiving gratitude makes a difference in employee performance during a crisis. *Journal of Business Research*, *149*, 967–982. https://doi.org/10.1016/j.jbusres.2022.05.055

Nicuță, E. G., Diaconu-Gherasim, L. R., & Constantin, T. (2024). "Thank You for Your Good Work": the Impact of Received Gratitude on Employees' Work Motivation. *The Journal of Psychology*, *158*(2), 161–178. https://doi.org/10.1080/00223980.2023.2271637

Roelen, C. A., Schreuder, K. J., Koopmans, P. C., & Groothoff, J. W. (2008). Perceived job demands relate to self-reported health complaints. *Occupational Medicine*, *58*(1), 58–63. https://doi.org/10.1093/occmed/kqm134

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, *25*(3), 293–315. https://doi.org/10.1002/job.248

Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, *30*(7), 893–917. https://doi.org/10.1002/job.595

Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the job demands-resources model: Implications for improving work and health. In G. F. Bauer & O. Hämmig (Eds.), *Bridging occupational, organizational and public health: A transdisciplinary approach* (pp. 43–68). Springer Science + Business Media. https://doi.org/10.1007/978-94-007-5640-3_4

Spector, P. E., & Jex, S. M. (1998). Development of four self-report measures of job stressors and strain: Interpersonal Conflict at Work Scale, Organizational Constraints Scale, Quantitative Workload Inventory, and Physical Symptoms Inventory. *Journal of Occupational Health Psychology*, *3*(4), 356–367. https://doi.org/10.1037/1076-8998.3.4.356

Spence, J. R., Brown, D. J., Keeping, L. M., & Lian, H. (2014). Helpful today, but not tomorrow? Feeling grateful as a predictor of daily organizational citizenship behaviors. *Personnel Psychology*, *67*(3), 705–738. https://doi.org/10.1111/peps.12051

Starkey, A. R., Mohr, C. D., Cadiz, D. M., & Sinclair, R. R. (2019). Gratitude reception and physical health: Examining the mediating role of satisfaction with patient care in a sample of acute care nurses. *The Journal of Positive Psychology*, *14*(6), 779–788. https://doi.org/10.1080/17439760.2019.1579353

Swider, B. W., & Zimmerman, R. D. (2010). Born to burnout: A meta-analytic path model of personality, job burnout, and work outcomes. *Journal of Vocational Behavior*, *76*(3), 487–506. https://doi.org/10.1016/j.jvb.2010.01.003

Tang, P. M., Ilies, R., Aw, S. S. Y., Lin, K. J., Lee, R., & Trombini, C. (2022). How and when service beneficiaries' gratitude enriches employees' daily lives. *Journal of Applied Psychology*, *107*(6), 987–1008. https://doi.org/10.1037/apl0000975

Van den Broeck, A., Vansteenkiste, M., De Witte, H., & Lens, W. (2008). Explaining the relationships between job characteristics, burnout, and engagement: The role of basic psychological need satisfaction. *Work & Stress*, *22*(3), 277–294. https://doi.org/10.1080/02678370802393672

van Emmerik, I. J. H., Bakker, A. B., & Euwema, M. (2004). What happens after the assessment center? Employees reactions to unfavorable performance feedback. *The Journal of Management Development*, *27*(5), 513–527. https://doi.org/10.1108/02621710810871826

Williams, L. A., & Bartlett, M. Y. (2015). Warm thanks: Gratitude expression facilitates social affiliation in new relationships via perceived warmth. *Emotion*, *15*(1), 1–5. https://doi.org/10.1037/emo0000017

Xanthopoulou, D., Bakker, A. B., Dollard, M. F., Demerouti, E., Schaufeli, W. B., Taris, T. W., & Schreurs, P. J. (2007). When do job demands particularly predict burnout? The moderating role of job resources. *Journal of Managerial Psychology*, *22*(8), 766–786. https://doi.org/10.1108/02683940710837714

Xing, L., Sun, J.-m. (J.), & Jepsen, D. (2021). Feeling shame in the workplace: Examining negative feedback as an antecedent and performance and well-being as consequences. *Journal of Organizational Behavior*, *42*(9), 1244–1260. https://doi.org/10.1002/job.2553

Xu, X., & Payne, S. C. (2020). When do job resources buffer the effect of job demands? *International Journal of Stress Management*, *27*(3), 226–240. https://doi.org/10.1037/str0000146

Zhan, X., Yang, W., Guo, Y., & Luo, W. (2023). Can patient gratitude compensate for depletion from family-to-work conflict in nurses? An experience sampling study. *Personnel Review*, *52*(9), 2153–2171. https://doi.org/10.1108/PR-12-2020-0891