



Do Job Demands affect Teachers' Well-Being? A Meta-Analytical Review

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ABSTRACT

The association between job demands and teachers' well-being was examined in a meta-analysis. We can accurately assess these relationships' magnitude by conducting a meta-analysis of these relationships. Following Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), a systematic review was done, and data were gathered by recording research from multiple internet sources. From 2007 until 2022, these articles were released in UN Language. The essay, published in journals indexed in EBSCO and Emerald database, analyzes qualitatively, presents the data in sample size, standard deviation, and average, and addresses the relationship between job demands and teachers' well-being. For computing the average aggregate difference, creating a forest plot, and accounting for publication bias, the analysis employed JASP software. The findings showed a significant relationship ($SE=0.23$) between indicators of job demands and teachers' well-being. To increase the distinctive variance among the many tools used to evaluate job needs, we advise revisiting them.

Keywords: Job demands, Teacher's well-being, Meta-Analytical Review

INTRODUCTION

The job demands-resources (JD-R) model (Demerouti, Bakker, Nachreiner, and Schaufeli, 2001) has become a crucial paradigm for research on job characteristics and worker well-being in the twenty-first century (Schaufeli & Taris, 2014). The model proposes two processes: a health impairment process leading to burnout and a motivational process leading to work engagement to predict employee well-being. The model specifies two categories of job characteristics (job demands and job resources) and provides two job characteristics. Hundreds of empirical studies in a range of fields, including nursing, dentistry, home care, and contact centers, have used the JD-R model as their conceptual foundation to date (e.g., Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003; Boyd et al., 2011; Hakanen, Schaufeli, & Ahola, 2008). Evaluations have recently cited strong evidence to back up the model's claims (Bakker & Demerouti, 2017; Schaufeli & Taris, 2014).

Job demands have been linked to stress as a severe side effect (Demerouti et al., 2001). Studies of teacher well-being have frequently looked into the impact of teaching because it is widely acknowledged to be a stressful profession (Chaplain, 2008). This paper will introduce a new idea of an entrepreneurial education framework that will introduce young children to entrepreneurship. In the past, job stress experts have started to focus more on the function of emotions as signs of stress and wellness at work (Van Katwyk et al., 2000). The Job-Related Affective Well-Being Scale, sometimes known as JAWS were used in several research such as (Warr, 1990) (Deckard and Present, 1989)(Tetrick and Larocco, 1987) (Gamst et al., 2017), The JAWS was created to evaluate both favorable and unfavorable emotional responses to the workplace. Identification of people or

groups who are exhibiting high amounts of negative emotions or low levels of positive emotions may be possible using it as a diagnostic tool. (Van Katwyk et al., 2000) In contrast, the present approach of measuring well-being included both physical and psychological elements. Emotional weariness, psychosomatic illnesses, and physical health made up the physical dimension. Relationship components, job satisfaction or working circumstances, and happiness made up the psychological dimension. (Gallego-Nicholls et al., 2022).

The literature is now exploring several angles from which to define the dimension of employee wellbeing. While some researches have revealed physical dimensions ((Hussain et al., 2022, Iqbal et al., 2022, Al Kahtani & M. M, 2022, Xu & Jia, 2022, Alcover et al., 2022) others have proposed not only physical dimensions but also psychological elements ((Toma, Rubie-Davies and Le Fevre, 2022, Chaudhary et al., 2022, Aboobaker, Edward and K.A, 2019) (Kamboj and Garg, 2021, Mehta and Sharma, 2021). Consequently, while research is being done to create a complete foundation for employee wellbeing This paper's structure consists of an introduction, a methodological section, and a discussion of how teachers wellbeing research has evolved. Finally, the report might provide a summary of the conclusions, ramifications, and points to take into account for the forthcoming study program.

The job demands-resources (JD-R) model is one of the most popular models of work-related stress (Bakker & Demerouti, 2017; Demerouti et al., 2001). There are two distinct categories of work characteristics according to the JD-R model. Workplace stress may be caused by demands made by the employer, which are harmful psychosocial or organizational conditions. On the other hand, job resources are the advantages of

the job that might make it easier for employees to handle the responsibilities. People attempt to deploy their resources by the conservation of resources (COR) theory (Hobfoll, 1989). However, strain reactions are expected when resources are lost owing to surpassing demands. High demands, therefore, appear to exhaust resources and harm mental and physical health, known as the health-impairment.

The assumption that working conditions can be considered in terms of demands and resources is central to this theory. Job resources comprise physical, social, psychological, and organizational aspects that enable employees to achieve their goals. Comparatively, job demands are the physical, social, psychological, and managerial aspects of work that require considerable mental or physical effort and are therefore associated with high costs (Bakker and Demerouti, 2017; see also Mazzola and Disselhorst, 2019). Whereas job resources enable employees to experience engagement and well-being, Riley (2019) established that the JD-R theory could help understand the stress and psychological risk among school Teachers.

RESEARCH METHOD

This research was a meta-analysis that summarized similar studies' results and concluded with a global conclusion. The theme of this research was the effect of job demands on teachers' well-being. Thus, the data population in this article is a study of all studies that compare the results of a teacher's well-being by utilizing or integrating all job demands indicators in school. The papers analyzed were published in English in the journal from 2007 to 2022. The article collection technique uses EBSCO and the Emerald database as search engines linked to various journal portals and indexing agencies. This strategy is used to collect as widely as possible to obtain a lot of data

so that it can comprehensively represent global conditions and avoid bias.

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method (Liberati et al., 2009) was used, as applicable, to trace and report progress on the systematic search for studies examining the correlation of Job demands to teacher's well-being. Citations were managed using Mendeley Desktop. The systematic search process is summarized in Figure 2.

The inclusion criteria in this study based on articles published from 2007 to 2022 were: i) Articles published in the United Nations Language; ii) The article discusses the influence of Job demands on teacher's well-being; iii) Articles are analyzed quantitatively; iv) The article describes the data in the form of sample size, effect size or coefficient correlation; v) Articles are published in journals indexed in EBSCO and Emerald database.

Articles that did not meet the six inclusion criteria would be included in the reports that fall under the exclusion criteria. The meta-analysis process would not include papers that fall within the exclusion criteria. Finally, the researchers collected 352 articles with relevant themes to the research focus from both EBSCO and Emerald databases. However, only 203 articles wrote data on the research results' sample size, effect size or coefficient correlation. These three data are primary in finding global conclusions. If the three data were not written entirely, a search would be carried out on the final page to find the raw data from the research results, which could then be used to identify data on the number of samples, the effect size or the coefficient correlation of the research results. If these data were unavailable, the article would be eliminated from the set of samples to be analyzed. In the final collection of research results, 42 results from 30 papers would be analyzed using meta-analysis.

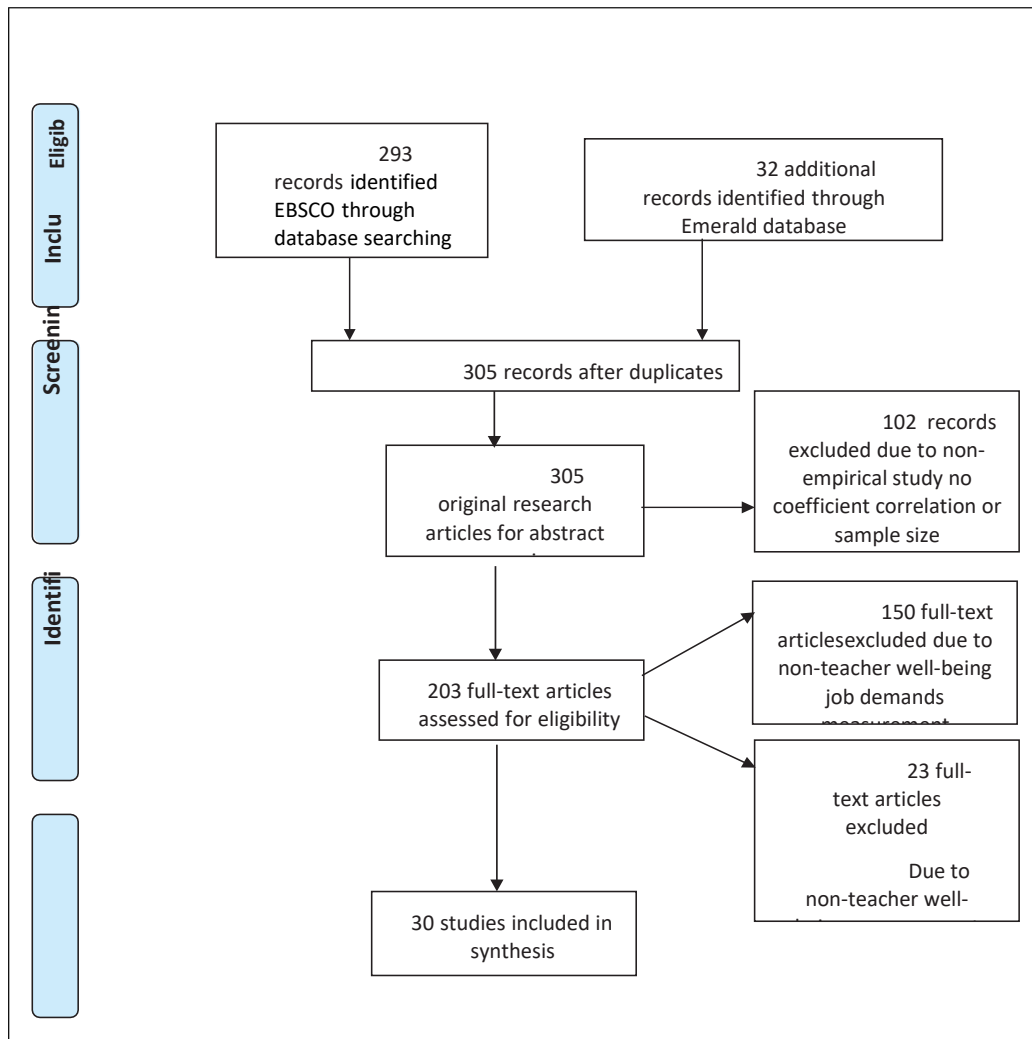


Figure 1. Flowchart of the literature search process

This study used a coefficient correlation from several studies that report a correlation between two continuous variables, then the correlation coefficient between the two variables is the effect size (r). To convert the value r to z we get use the following equation.

$$z = Y_i = 0,5 \times \ln \frac{1 + r}{1 - r}$$

z or Y_i is the effect size that has been transformed. In some other literature, the effect size is also denoted by ES . Next, the variance of z is calculated using the following equation.

$$Vz = VY_i = 1/n$$

The standard error of z is the root of the variance, so Mathematically can be expressed in the following equation.

$$SEz = SEY_i = \sqrt{Vz}$$

Then, the analysis process is carried out using JASP software. The data entered were g as the effect size and SEz to produce a forest plot in which there were a value interval and standard error for each

study and its conclusions. In addition, JASP also helped in the calculation of heterogeneity and publication bias (funnel

plot). Thus, the effect of Job demands on teachers' well-being could be concluded.

RESULT AND DISCUSSIONS

In this study, 42 research findings from 30 articles were examined. Several studies have yielded numerous research findings. The impact of job pressures on teachers' well-being was shared by several studies (Baka, 2015; Huk & Terjesen; 2019, Hsieh et al.; 2022) using the burnout scale. The demands of teachers' jobs have an impact on their well-being through work satisfaction, according to Collie et al., 2020 and Chakravorty & Singh, 2022. The teachers' daily well-being at work was observed by Tadi et al. (2015), who also evaluated how much they engaged in their job that day and how much they experienced positive emotional states. By measuring emotional tiredness, Simbula, 2010, Feuerhahn et al., 2013, and Schmid & Thomas, 2020 examine the everyday well-being of the instructors at work.

impacted by the demands of their jobs in schools. The term "teachers' well-being" in this study refers to how the term "well-being" has been defined differently by different theoretical viewpoints, making it more individualized. Beginning with the selection of a pool of items from the literature, the instrument to measure employee well-being was then confirmed in focus groups with academic and business experts. To reflect the experiences that did not appear in the literature but were suggested by the experts, a few components were added to the overall measure of employee well-being. Researchers can generate the effect size and standard error shown in Table 1 based on the data sample size and coefficient correlation. A heterogeneity test will be run using the information in Table 1 to demonstrate the model's compatibility with the information. Table 1 displays the outcomes of the heterogeneity test.

According to the studies that was chosen, teachers' wellbeing is generally

No	Author's/Year	r	n	z	Vz	Sez
1	(Amirian, 2022)	0,563	602	0,637	0,002	0,041
2	(Jansen & Wal, 2020)	-0,14	678	-0,141	0,001	0,038
3	(Jonasson, Lauring and Selmer, 2017)	0,32	124	0,332	0,008	0,091
4	(Baka, 2015)	0,4	632	0,424	0,002	0,040
5	(Huk and Terjesen, 2019)	0,26	79	0,266	0,013	0,115
6	(Collie, Granziera and Martin, 2020)	-0,14	5,951	-0,141	0,339	0,582
7	(Simbula, 2010)	-0,49	61	-0,536	0,017	0,131
8	(Feuerhahn, Bellingrath and ..., 2013)	0,21	177	0,213	0,006	0,076
9	(Schmid and Thomas, 2020)	0,26	101	0,266	0,010	0,101
10	(Hsieh, Liang and Li, 2022)	0,74	665	0,950	0,002	0,039
11	(Guglielmi <i>et al.</i> , 2012)	0,08	224	0,080	0,005	0,067
	(Zhang and Chen, 2017)	-0,08	397	-0,080	0,003	0,050
	(Zhang and Chen, 2017)	0,38	397	0,400	0,003	0,050
12	(Zhang and Chen, 2017)	0,48	397	0,523	0,003	0,050
13	(Kabito and Wami, 2020)	-0,38	500	-0,400	0,002	0,045
14	(Huyghebaert <i>et al.</i> , 2018)	0,48	884	0,523	0,001	0,034

15	(Bradley, 2007)	0,54	422	0,604	0,002	0,049
	(de Bruin and Buchner, 2010)	0,52	164	0,576	0,006	0,079
16	(de Bruin and Buchner, 2010)	0,46	189	0,497	0,005	0,073
17	(Martini <i>et al.</i> , 2019)	0,415	550	0,442	0,002	0,043
	(Brouwers, Tomic and Boluijt, 2011)	0,64	311	0,758	0,003	0,057
18	(Brouwers, Tomic and Boluijt, 2011)	0,36	311	0,377	0,003	0,057
	(Tadić, Bakker and Oerlemans, 2015)	0,12	158	0,121	0,006	0,080
19	(Tadić, Bakker and Oerlemans, 2015)	0,15	158	0,151	0,006	0,080
20	(Denham, Bassett and Miller, 2017)	-0,254	127	-0,260	0,008	0,090
21	(Guidetti <i>et al.</i> , 2019)	-0,18	605	-0,182	0,002	0,041
22	(Hunter and Rodriguez, 2021)	0,007	4249	0,007	0,000	0,015
23	(Adil, Kamal and Shujja, 2019)	0,2	500	0,203	0,002	0,045
24	(Pérez-Nebra, Queiroga, 2020)	0,22	2282	0,224	0,000	0,021
25	(Salanova <i>et al.</i> , 2008)	0,34	274	0,354	0,004	0,061
26	(Collie, Granziera and Martin, 2018)	-0,15	165	-0,151	0,006	0,079
27	(Bottiani <i>et al.</i> , 2019)	-0,04	255	-0,040	0,004	0,063
	(Bottiani <i>et al.</i> , 2019)	-0,02	255	-0,020	0,004	0,063
	(Bottiani <i>et al.</i> , 2019)	0,16	255	0,161	0,004	0,063
	(Bottiani <i>et al.</i> , 2019)	0,14	255	0,141	0,004	0,063
28	(Li & Castaño, 2019)	0,37	489	0,388	0,002	0,045
29	(Maele & Houtte, 2015)	0,19	673	0,192	0,001	0,039
	(Maele & Houtte, 2015)	0,19	673	0,192	0,001	0,039
	(Maele & Houtte, 2015)	0,09	673	0,090	0,001	0,039
	(Maele & Houtte, 2015)	0,12	673	0,121	0,001	0,039
30	(Feuerhahn <i>et al.</i> , 2013)	0,36	177	0,377	0,006	0,076
	(Feuerhahn <i>et al.</i> , 2013)	0,54	177	0,604	0,006	0,076

Tabel 1. Summary of reserch data

The data must adhere to the assumption of heterogeneity because the study uses a random effect model. One technique for evaluating heterogeneity is I^2 . On a scale from 0% to 100%, I^2 shows the percentage of the size fluctuation of the summary effect. The data gathered for this investigation, which are displayed in Table 1, produce $I^2=97.71% >25%$, indicating that there is heterogeneity, making the choice of a random effect model adequate for the requirement. The forest plot in Figure 1 can then be used to deduce the total effect.

According to the data in the forest plot, the overall effect is 0,23. According to one interpretation, the impact of job demands

on teachers' well-being is 23%. The current meta-findings analysis's support earlier research and show that there is no significant relationship between environmental identification and closeness to nature. In social psychology, the average effect size for a correlation is only .21, with effects larger than .50 being extremely rare (Cooper & Findley, 1982), contrary to the conventional wisdom that a correlation coefficient higher than .50 indicates a strong effect (Richard, Bond, & Stokes-Zoota, 2003).

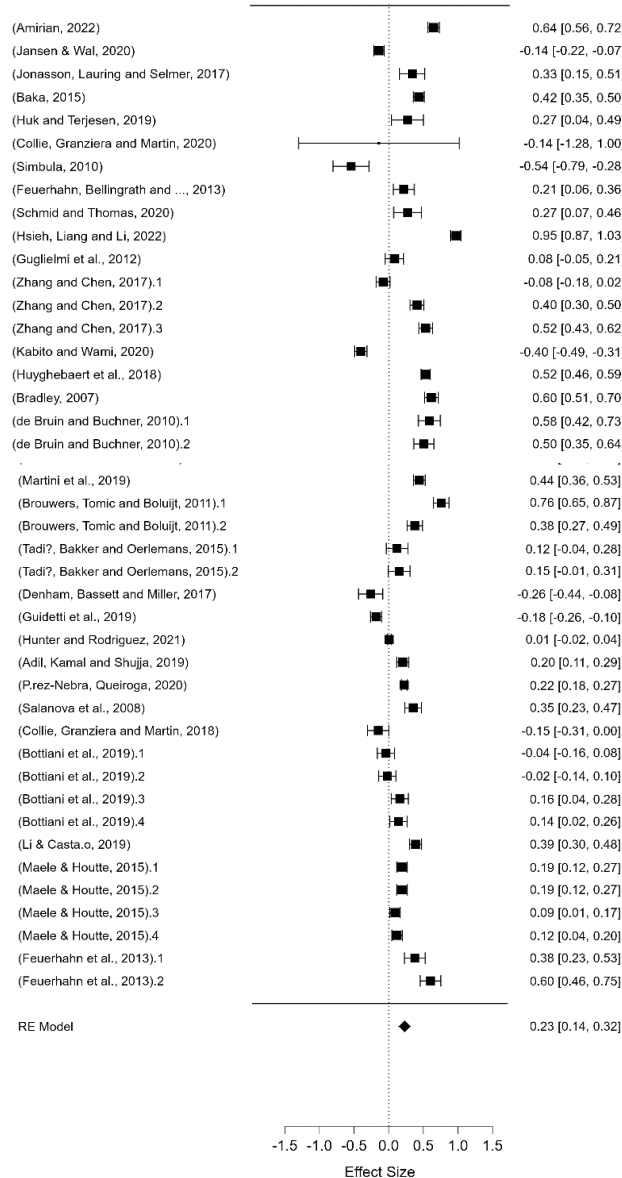


Figure 2. Initial forest plot

The Trim and Fill approach can be applied in this meta-analysis to identify publication bias. According to earlier research (Arlinwibowo et al., 2022), the Trim and Fill approach recalculates the modified effect size, reduces the effect variance, and generates a tighter confidence interval after removing the most extreme small studies from the positive side of the funnel plot. As a result, when unpublished research is taken into account in the analysis, researchers can observe a change in impact size (Arlinwibowo et al., 2022).Figure 3

displays the Trim and Fill data findings produced by JASP program.

The funnel plot with random effect models in Figure 3 does not have any open points. The display indicates that there is either no or no unpublished (missing) research. To detect publication bias in this meta-analysis, use the Trim and Fill method. According to past research [73], the Trim and Fill strategy, after removing the most extreme small studies from the positive side of the funnel plot, recalculates the adjusted effect size, reduces the effect variance, and produces a tighter confidence interval. Researchers

can therefore detect a change in impact size when unpublished research is taken into account in the study [73]. The Trim and Fill data findings provided by the JASP algorithm are shown in Figure 3. It discovered As a result, there are no potential biases in the conclusion that Job demands on teachers' well-being. The outcomes of the initial forest plot Figure 2 and the forest plot created using the Trim and Fill method will be compared in order to support this claim.

The forest plot analysis utilizing the trim and fill method yielded data that exactly matched the appearance of Figure 2. The initial forest plot image and the forest plot image created using the trim and fill method are identical in each chosen sample data interval. Thus, the comparison supports the earlier claim that

there is no evidence of bias in the meta-analysis. Therefore, it is valid to draw the conclusion that Job demands significantly effect teachers' well-being.

Separate studies have been conducted in different locations and times. Therefore, it is insufficient to support the application of the research's findings across a broad spectrum. This study ends several studies, which results in findings with a broad scope. This meta-conclusion analysis's a general conclusion. It is also a finding that, in general, job demands can have a negative impact on teachers' well-being and lead to pressure that causes stress. With regular settings and situations, of course, this conclusion can be utilized to examine the urgency of Job demands in various parts of the world.

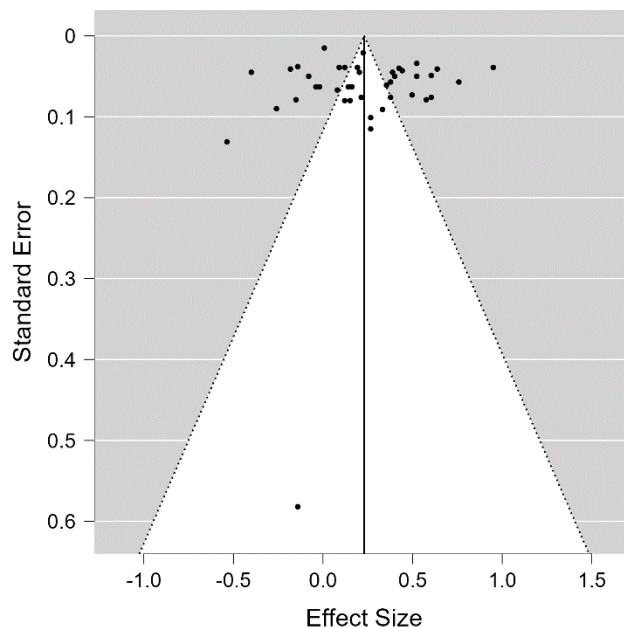


Figure 2. Funnel plot of Trim and Fill method

Job demands are features of a job that require physical, psychological, social, or organizational effort on the part of the employee and may also have costs in terms of physical, psychological, or cognitive functioning. Even while these

requirements aren't always bad, they turn into stressors at work when they demand work or particular expenses that have detrimental impacts like melancholy, anxiety, or burnout (Schaufeli & Bakker, 2004). According to Hunter and

Rodriguez's findings from 2021, there is conflicting support for using the JD-R theory. Contrary to JD-R theory, higher job demands in the form of increased observation loads had no impact on turnover or strain as stated by school administrators. Job expectations, job and personal resources, and engagement in the intended direction are all major predictors of burnout and disengagement, according to Salanova et al. (2008).

The study by Tadi et al. (2015) found that there are significant individual differences in challenge and hindrance demands. The challenges or expectations that employees occasionally experience are greater than they are on other days. These results are important because it has rarely been empirically explored how challenge and hindrance work demands vary at the within-individual level and because it is difficult to provide specific reasons for these differences without using situational, commonplace characteristics. The results of Tadi et al. (2015), however, showed that daily personal resources also play a significant role in the interplay between job demands, job

resources, and work-related well-being. This finding totally supported our hypothesis. To be more precise, daily employment resources served as a buffer against the negative impact of daily responsibilities on daily well-being (i.e., daily positive affect and daily work engagement). Moreover, the daily correlations between challenge demands and well-being were significantly and favorably enhanced by daily job resources.

According to the research (Maele & Houtte, 2015), elementary school teachers' views of exhaustion are mitigated by trust. Burnout levels were lower among teachers who felt their principal, peers, or pupils were trustworthy. The degree of teacher burnout was shown to be independently influenced by a lack of trust in each of these trust referents. Compared to the effects of trust in the principal and coworkers, trust in students had the greatest impact on burnout. This is consistent with the claim that the primary cause of burnout is students' disruptive behavior, which is probably going to result in decreased levels of trust in students (Chang, 2009, p. 202).

CONCLUSION

Teachers sometimes experience difficulties mentally disengaging from their jobs, which has ramifications for educational systems and public health. It has been demonstrated that instructors who suffer from psychiatric disorders and/or poor mental health are more likely to consider leaving their jobs (Varol et al., 2021) Interventions are needed to optimize teachers' job demands and contextual resources or to teach them coping mechanisms for work-related

stress in order to protect them from potential related risks of health impairment and sickness absence, which also, from a macro perspective, negatively affect the educational system.

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