

Est.  
1841

YORK  
ST JOHN  
UNIVERSITY

Madigan, Daniel J. and Kim, Lisa E. (2021) Towards an understanding of teacher attrition: A meta-analysis of burnout, job satisfaction, and teachers' intentions to quit. *Teaching and teacher education*, 105 (103425).

Downloaded from: <https://ray.yorks.ac.uk/id/eprint/5354/>

The version presented here may differ from the published version or version of record. If you intend to cite from the work you are advised to consult the publisher's version:  
<https://doi.org/10.1016/j.tate.2021.103425>

Research at York St John (RaY) is an institutional repository. It supports the principles of open access by making the research outputs of the University available in digital form. Copyright of the items stored in RaY reside with the authors and/or other copyright owners. Users may access full text items free of charge, and may download a copy for private study or non-commercial research. For further reuse terms, see licence terms governing individual outputs. [Institutional Repositories Policy Statement](#)

# RaY

Research at the University of York St John

For more information please contact RaY at  
[ray@yorks.ac.uk](mailto:ray@yorks.ac.uk)

Madigan, D. J., & Kim, L. E. (in press). Towards an understanding of teacher attrition: A meta-analysis of burnout, job satisfaction, and teachers' intentions to quit. *Teaching and Teacher Education*.

Towards an Understanding of Teacher Attrition:  
A Meta-Analysis of Burnout, Job Satisfaction, and Teachers' Intentions to Quit

Daniel J. Madigan

York St John University, UK

&

Lisa E. Kim

University of York, UK

Author Note

Daniel J. Madigan, School of Science, Technology, and Health, York St John University, Lord Mayor's Walk, York, UK. Lisa E. Kim, Department of Education, University of York, York, UK. Correspondence concerning this article should be addressed to Daniel J. Madigan, e-mail: [d.madigan@yorks.ac.uk](mailto:d.madigan@yorks.ac.uk)

## Abstract

Teacher attrition continues to be a concern for school leaders and policymakers in many countries. To help further understand why teachers leave the profession and to inform the development of targeted interventions to reduce this phenomenon, in the present study we aimed to provide the first meta-analytic examination of (a) the relationship between burnout and teachers' intentions to quit, (b) the relationship between job satisfaction and teachers' intentions to quit, and (c) whether burnout or job satisfaction is more important in predicting teachers' intentions to quit. Random-effects meta-analyses indicated that the three dimensions of burnout showed significant positive relationships with teachers' intentions to quit (exhaustion [ $r^+ = .41$ ], depersonalization [ $r^+ = .32$ ], and reduced accomplishment [ $r^+ = .21$ ]). In addition, there was evidence that the strength of these relationships has increased over time. Job satisfaction showed a significant negative relationship with teachers' intentions to quit ( $r^+ = -.40$ ). Burnout dimensions also showed significant negative relationships with job satisfaction (exhaustion [ $r^+ = -.42$ ], depersonalization [ $r^+ = -.38$ ], and reduced accomplishment [ $r^+ = -.30$ ]). Multiple regression analyses based on these meta-analytic effects indicated that burnout and job satisfaction together explained 27% of the variance in teachers' intentions to quit. Finally, relative importance analyses indicated that burnout symptoms accounted for the majority of this explained variance. These findings suggest that burnout and job satisfaction are highly important in predicting teachers' intentions to quit, but it appears that, although they are related, burnout may confer a greater risk than job satisfaction confers protection, and this risk may be increasing over time.

*Keywords:* burnout; exhaustion; job satisfaction; teacher attrition; teacher retention; intentions to quit; turnover

## **Introduction**

To reach one of UNESCO's Sustainable Development Goals, the world needs to recruit 69 million new teachers by 2030 (UNESCO Institute for Statistics, 2016). One of the main reasons why so many new teachers need to be recruited is because of the high rates of teacher attrition. For example, some estimates suggest that almost half of new teachers leave the profession within five years (e.g., Sims & Jerrim, 2020). Replacing teachers not only has huge financial ramifications (OECD, 2020), but it also has a detrimental impact on students' academic progress (e.g., Schleicher, 2018; Sorensen & Ladd, 2020). Given this international problem, international organizations, such as the OECD, have published recommendations for countries to follow, as well as national governments implementing new strategies and incentive packages (e.g., UK DfE, 2019). In the present study, we wish to help inform these strategies by further understanding the factors that underpin why teachers leave their jobs. In this regard, we explore the extent to which two psychosocial factors — burnout and job satisfaction — contribute to teachers' intentions to quit the profession. To aid the development of targeted interventions aimed at addressing teacher attrition, we will also examine which of these factors may be most important.

### **Teachers' Intentions to Quit**

There is an abundance of evidence illustrating that attrition is a problem in almost all occupations (e.g., Ongori, 2007). The evidence also suggests that teachers may be extreme outliers in this regard, with teachers leaving the profession at alarming rates when compared to other occupations (Borman & Dowling, 2008). Research in this area has identified many ways to quantify teacher attrition (Billingsley, 1993). In particular, teachers can be divided into those who stay (remain as a teacher at the same school), those who move (continue in the teaching profession but move schools), and those who leave (leave the teaching profession; Billingsley, 2004). However, measuring behaviors, especially the number of

teachers who leave, requires complex follow-up study that can be challenging, costly, and time-intensive – a clear barrier to furthering our understanding of teacher attrition (Billingsley, 2004). As a consequence, researchers have instead examined current teachers' intentions to leave as a proxy measure of attrition (e.g., Billingsley & Cross, 1992; Gersten et al., 2001; Whitaker, 2000).

The study of intentions allows researchers to examine and understand teachers' career plans without the difficulty of finding the teachers who have left. There are theoretical and empirical reasons to support this approach. For example, within the Theory of Planned Behavior, intentions are considered the most proximal predictor of behavior (Ajzen, 1991). In addition, several studies have confirmed that intentions to quit are strongly related to attrition behavior in primary, secondary, and tertiary teachers, as well as those in special education (e.g., Boe, Barkanic, & Leow, 1999; Ducharme, Knudsen, & Roman, 2008; Michel, Stegmaier, Meiser, & Sonntag, 2009). This is the case both in the short term and over relatively long periods of time (Gersten et al., 2001). Thus, intentions to quit provide a very useful means to study teacher attrition.

Because of the many implications teacher attrition has on national educational systems and the economy (Sorensen & Ladd, 2020), as well as students (Carver-Thomas & Darling-Hammond, 2019), the past three decades have seen an increased focus on studying the predictors of teachers' intentions to quit. This body of work has indicated that the predictors are complex. Facets of the teacher themselves (personal), their students (social), and the school (environmental) have all been implicated in attrition to some degree (e.g., Chambers et al. 2019; Klassen & Chiu, 2011; Lachman & Diamant, 1987). Research suggests that seeking help from colleagues (Tait, 2008), positive school climates (Cohen, McCabe, Michelli, & Pickeral, 2009), and role stability (Billingsley, 2004) are important factors. Moreover, psychosocial factors, such as teachers' emotional states (De Neve & Devos, 2017)

and teacher stress (Billingsley & Bettini, 2019), are particularly highlighted in this regard. As a consequence, the present study focused on two psychosocial factors that are likely especially relevant – burnout and job satisfaction. The reasons we focus on these factors are threefold. Both have been highlighted by theory (e.g., Billingsley, 1993; Vanderslice, 2010) and international organizations such as the OECD (2020) for their relevance to the emotional and physical wellbeing of teachers, they are likely enduring experiences and will therefore have possible chronic consequences (e.g., Gersten et al., 2001), but also that they may be more amenable to changes via both organizational and individual interventions (e.g., West et al., 2016).

### **Burnout**

Burnout is conceptualized as a psychosocial syndrome that develops as a reaction to chronic work stress (Maslach & Jackson, 1981). Maslach and colleagues (1986) proposed that burnout is comprised of three symptoms: emotional exhaustion (comprising feelings of being emotionally overextended and exhausted because of one's work), cynicism (a cynical and impersonal reaction toward those around you), and reduced efficacy (no longer feeling like you are competent and successful at work). Importantly, burnout appears to be a relatively common experience among teachers (Chang, 2009). Given that teachers will face numerous demands throughout their working day, this is perhaps not surprising (see McCarthy et al., 2016). The dimensions of burnout have also been contextualized to the teaching domain. In this regard, survey items are adapted so that they refer to students. As such, when adopting the contextualized approach, burnout dimensions represent emotional exhaustion because of teaching activities, the development of negative attitudes towards students, and a reduced sense of accomplishment in relation to teaching (Maslach and

Jackson, 1986).<sup>1</sup> Worryingly, burnout symptoms will have many wide-ranging consequences for teachers. For example, studies adopting both general and contextualized approaches show that burnout is associated with lower levels of job commitment and worse physical and mental health (e.g., Hakanen, Bakker, & Schaufeli, 2006), this is in addition to reduced effectiveness of classroom practices and actual absence from the classroom (e.g., Kokkinos, Panayiotou, & Davazoglou, 2005; Brunsting, Sreckovic, & Lane, 2014).

There are many theoretical reasons that explain why burnout may be linked to turnover intentions (e.g., Chang, 2009). In this regard, it is important to differentiate between the affective (emotional exhaustion and depersonalization) and cognitive (reduced accomplishment) symptoms of burnout (Leiter, 1993). This is because the affective symptoms are associated with avoidant coping mechanisms that will likely lead to behavioral withdrawal, and, *in extremis*, the desire to escape. Emotional exhaustion will cause teachers to feel drained and like they do not have the energy to spend another day in the classroom (Schwab et al., 1986). Depersonalization is also likely to increase interpersonal conflict with both members of staff and students, and the reliance on withdrawal to minimize such conflict (Leiter & Maslach, 1988). While, on the other hand, reduced accomplishment is more likely to be tied to performance evaluations (actual and perceived). It will therefore likely be linked to reduced motivation and diminished self-esteem (Beer & Beer, 1992). Consequently, burnout, exhaustion and depersonalization, in particular, may be positively associated with teachers' intentions to quit.

Many studies have examined the association between burnout and intentions to quit

---

<sup>1</sup>In the present study, to be consistent with terminology used in previous reviews (e.g., Chang, 2009), we follow the contextualized approach and refer to the burnout dimensions as exhaustion, depersonalization, and reduced accomplishment.

(e.g., Bartrum et al., 2012; Jourdain & Chênevert, 2010; Leung & Lee, 2006). In relation to work contexts in general, a meta-analysis of seven studies suggested that both emotional exhaustion and depersonalization were strongly related to turnover intentions, but reduced accomplishment was only weakly related (Lee & Ashforth, 1996). To date, however, no such systematic summary of the literature examining burnout and teachers' intentions to quit has been conducted. This is important because there are inconsistencies in the direction and size of relationships as well as the predominance of specific dimensions. For example, some studies have found that emotional exhaustion is the predominant dimension predicting teachers' intentions to quit (Jackson et al., 1986), whereas other studies have found that emotional exhaustion is a nonsignificant predictor (e.g., Houkes, Janssen, de Jonge, & Nijhuis, 2001), and others have found that depersonalization shows larger effects than exhaustion (e.g., Li et al., 2001). As a consequence, an up-to-date review of this literature is needed so as to determine which dimensions of burnout and to what extent they predict teachers' intentions to quit.

An up-to-date meta-analytic review has the further advantage of allowing for an examination of possible moderating factors of the relationship between burnout and teachers' intentions to quit. That is, an exploration of study characteristics that help explain any systematic differences in effect sizes across studies. In this regard, there are several factors that could moderate this relationship. This includes demographic factors that research suggests are important, including teaching experience, which may act to buffer the effects of burnout (e.g., Van Horn et al., 1997). Effect sizes may also differ in relation to the stage of education because of the associated differences in everyday demands and work-related tasks (e.g., Tsigilis et al., 2011). The country in which the study took place may serve as a useful proxy for the associated cultural context which, due to the many differences in teaching practices worldwide, is worth considering as a moderator (Van Horn et al., 1997). The

instrument used to measure burnout may also be relevant in this regard because the different versions vary in the degree to which they are contextualized to the teaching domain (Schaufeli et al., 1994). Finally, it is possible that due to changes to the structure of teaching and teachers' roles that the strength of the burnout–intentions to quit relationship has changed over time, exploring the moderating role of publication year would allow for an examination of this idea (see e.g., Gilboa et al., 2008).

### **Job Satisfaction**

Another psychosocial characteristic of interest to the present study is job satisfaction. Job satisfaction reflects an individual's experiences of pleasurable emotional states derived from their evaluation of their job (Locke, 1969). While there is some debate regarding the dimensionality of job satisfaction, it is commonly agreed that job satisfaction can reflect an overall (unidimensional) sense of satisfaction (Moe et al., 2010). Across a variety of professions, job satisfaction was found to be consequential to a variety of outcomes (Bowling, 2007; Faragher et al., 2005). For teachers, job satisfaction can positively influence enthusiasm and positively affect interpersonal communication with students (e.g., Weiqi, 2007). Conversely, however, a lack of satisfaction can lead to the opposite of these outcomes (lethargy and poorer interpersonal interactions; Macdonald, 1999).

There are several theoretical reasons why job satisfaction would be linked to teachers' intentions to quit. In this regard, it is important to consider the role of unmet expectations. If teachers are unable to get what they perceive as essential in their jobs, they will become increasingly dissatisfied (and vice versa; Pearson, 1995). Most problematically, this experience will lead to difficulties in directing, energizing, and regulating behaviors and cause shifts towards less self-determined forms of motivation (extrinsic and controlled; Vansteenkiste et al., 2007). Together, teachers will likely derive less enjoyment from their teaching activities. In much the same way that burnout will lead to withdrawal, a lack of

satisfaction is likely to lead to amotivation. Satisfaction, on the other hand, is likely to lead to more engagement, motivation, enjoyment, and ultimately an increased likelihood of remaining in the job (Henne & Locke, 1985).

Many studies have examined the relationship between job satisfaction and intentions to quit both in general work settings and in teaching (Billingsley et al., 1995; Gersten et al., 2001). Job satisfaction appears relevant in predicting lower turnover intentions across a variety of professions (e.g., Lee, 1988). As with burnout, however, there exists no summary of the research examining job satisfaction and teachers' intentions to quit. This is important because an examination of individual studies suggest that once again there are relatively large discrepancies in terms of the size of the effects across studies. For example, the relationship has been found to range in size from anywhere between very small ( $< .10$ ; Chughta, 2006) and large ( $> .50$ ; Høigaard, 2012). Without an aggregated summary of effects, it is currently unclear to what extent job satisfaction may protect teachers from leaving their jobs.

An examination of moderators of the job satisfaction–intentions to quit relationship may also be useful in identifying conditions under which job satisfaction is more (or less) important (or even whether its effects are universal). As with burnout, there are several possible moderators worth exploring. Demographic factors such as age may be relevant because of how it may affect a teacher's expectations of their role (e.g., Shaukat et al., 2019). As too may stage of education and country, for the same reasons as described for burnout. Likewise, it would be worthwhile exploring whether any changes in the strength of this relationship have occurred over time.

### **Burnout or Job Satisfaction?**

There is a long history of theory and research linking burnout and job satisfaction (e.g., Zedeck et al., 1988). In this regard, some researchers have argued that burnout leads to

decreases in job satisfaction (i.e., job satisfaction is an affective outcome of burnout), others have argued that the reverse may be true (Maslach & Schaufeli, 1993; Tehseen & Ul Hadi, 2015). It is very likely that the two are linked in some way. Yet, it is important to note that they are conceptually distinct. First, while for teachers both pertain to teaching and associated practice, burnout also relates to the self (e.g., appraisals of one's ability). Second, they can be considered distinct in relation to the ways in which teachers will evaluate their teaching. Specifically, a dissatisfied teacher does not like their job, while a burnt-out teacher feels incapable of performing it adequately (Randall & Scott, 1988). Finally, within the OECD's (2020) teacher wellbeing framework, job satisfaction is considered a psychological dimension, while burnout is considered a physical dimension of teacher wellbeing. What is unclear, however, is the extent to which burnout and job satisfaction are related to one another in teachers. While many studies have sought to examine this issue, due to differences in findings across studies, no consensus has been reached. A meta-analysis of the relationship between the two would help to empirically answer this question.

In terms of understanding the links that burnout and job satisfaction have with intentions to quit, an examination of the possible similar developmental pathways may be useful. In the present study, we use the Job Demands–Resources Model to do so (Demerouti et al., 2001). This model posits that in any occupation we can differentiate between two types of work-related characteristics – job demands and job resources (see also Bakker & Demerouti, 2007). Job demands reflect “the physical, psychological, social, or organizational aspects of the job that require sustained physical or mental effort” (Demerouti & Bakker, 2011, p. 2). For teachers this may include being overloaded by work, having little freedom to make decisions, and experiencing interpersonal conflict (Haydon, Leko, & Stevens, 2018). Job resources are aspects that are “functional in achieving work goals, reducing job demands (or consequences of job demands), or that stimulate personal growth and development”

(Demerouti & Bakker, 2011, p. 2). For teachers this could include positive relationships with colleagues, beliefs that teaching is a meaningful job, and perceptions of fairness (Skaalvik & Skaalvik, 2018). Satisfaction and burnout can, therefore, be seen as a product of combinations of job demands and job resources. On the one hand, job satisfaction may arise when individuals experience low demands and high resources. While on the other hand, burnout may arise because of high demands and low resources. Consequently, those teachers whose resources outweigh their demands are less likely to leave their jobs (because of satisfaction), while those whose demands outweigh their resources are increasingly likely to want to leave (because of burnout). It is also possible that very low demands may be conducive to low satisfaction too (regardless of resources). This latter point serves to illustrate again that although satisfaction and burnout share similar developmental pathways, there are important differences (see Chang, 2009 for a review of other constructs associated with burnout). Their differences notwithstanding, this theoretical perspective highlights why it is likely that burnout and job satisfaction are critical predictors of teacher attrition.

A further important question that arises, then, is whether burnout or job satisfaction is more important in predicting teachers' intentions to quit. This question is important for several reasons. First, given the availability of limited resources, policymakers can use this information to allocate these in the most effective manner. That is, the findings can be used to provide the basis for targeted interventions with the best chance of reducing teacher attrition. Second, the answer to this question will help guide future research in this area to continue to help teachers be effective, enjoy their roles, and stay in their jobs. As to which factor may be the most important, there are several points worthy of discussion. For example, it has been argued that one of the most important ways to reduce attrition is by increasing teachers' job satisfaction (Billingsley, 1993). Indeed, Gersten et al. (2001) found that satisfaction was a stronger negative predictor of intentions to leave than other factors such as

social support. To the contrary, because burnout is a chronic response to stress, in addition to being potentially more common, its effects may pervade all aspects of teaching. Therefore, burnout may have wide ranging implications, beyond those of satisfaction. To date, we are not aware of any direct comparison of burnout and job satisfaction predicting teachers' intentions to quit. Recent analytical developments (relative importance analysis) allow for the comparison of meta-analytic effects and in doing so to determine the relative importance of each factor, burnout and job satisfaction, in explaining an outcome variable, which in our case is teachers' intentions to quit (see MacCann et al., 2020 for an example of this approach).

### **The Present Study**

Against this backdrop, in the present study we aim to provide the first meta-analytic examination of (a) the relationship between burnout and teachers' intentions to quit, (b) the relationship between job satisfaction and teachers' intentions to quit, and (c) whether burnout or job satisfaction is more important in predicting teachers' intentions to quit. Based on the arguments we have articulated above, we hypothesized that all three symptoms of burnout would be positively related to intentions to quit, and, based on theory highlighting the importance of the affective components of burnout, that exhaustion and depersonalization would show the largest effects, that job satisfaction would be negatively related to intentions to quit, and that burnout would be a stronger predictor of teachers' intentions to quit than job satisfaction. Our moderation analyses were exploratory, whereby we had no specific expectations as to whether any of the factors were more important than the others.

## **Method**

### **Selection of Studies**

We started with a comprehensive computerized literature search. To do so, we used the following databases: PsychARTICLES, PsycINFO, Educational Administration Abstracts,

Education Abstracts, MEDLINE, and ProQuest Dissertations. We used these search terms within our search: “teacher” and “burnout or exhaustion or cynicism or reduced efficacy or depersonalization or reduced accomplishment or satisfaction” and “intention or attrition or dropout or turnover or quit”. We ran the search in April 2021. In total, we found 1,575 studies. In addition to conducting this standardized search, to identify other studies that may have been missed, we explored other sources (e.g., Google Scholar) and reference lists from related reviews and book chapters. Once duplicates were removed and abstracts were screened, 59 articles remained.

We included studies in the present review based on whether they: (a) measured burnout/job satisfaction and intentions to quit using quantitative scales, (b) included an effect size (i.e., correlation between burnout/satisfaction and intentions to quit), (c) were a published journal article or thesis/dissertation, (d) were published in English; and (e) examined a unique sample (e.g., not included in a thesis and journal article or multiple articles). If this was the case, the most complete sample was used. When we reviewed full texts, studies were removed because they did not measure burnout or job satisfaction ( $n = 12$ ), did not measure intentions to quit ( $n = 16$ ), or lacked sufficient information ( $n = 7$ ). As a result of this process 24 studies reporting 38 effect sizes were included: 10 studies examining the relationship between burnout and intentions to quit and 14 studies examining the relationship between job satisfaction and intentions to quit.<sup>2</sup> We have provided an overview of this process in Figure 1.

### **Coding of Studies**

---

<sup>2</sup>We also coded studies that examined the relationship between burnout and job satisfaction of which there were 29 studies. The supplementary material contains the coded information for these studies.

We reviewed the remaining studies in full and summarized these studies by extracting the following: (a) article information (the authors and year published), (b) the educational domain (primary, secondary, or tertiary), (c) the sample size ( $N$ ), (d) teachers' age, (e) the percentage of the teachers who were female, (f) teachers' experience (years), (g) country in which the study took place, and (h) bivariate correlations between burnout/job satisfaction and intentions to quit. The first and second authors double coded all data. Inter-rater reliability was high ( $Kappa = .94$ ; McHugh, 2012). The few disagreements were resolved via a consensus of authors with reference to the original material. The coded information for burnout can be found in Table 1 and for job satisfaction it can be found in Table 2.

### **Meta-Analytic Procedure**

Following relevant recommendations (e.g., Lipsey & Wilson, 2001), we used random-effects models to calculate meta-analytic effect sizes and confidence intervals, as these models provide the means to generalize beyond the studies in the review to future studies (Schmidt, Oh, & Hayes, 2009). We conducted the analyses using the Meta-Essentials software (Suurmond et al., 2017).

The standard errors of correlation coefficients can be problematic when deriving meta-analytic effects, so we based our analyses on Fisher's  $Z$  scale (Lipsey & Wilson, 2001). However, so as to support the interpretation of effects, Fisher's  $Z$  scores were translated back into correlation coefficients (denoted as  $r^+$  [weighted average correlation]). As recommended by Bosco and colleagues (2015), effect sizes were compared to typical effects found within the literature. We reported 95% confidence intervals for all effects, which are significant ( $p < .05$ ) if the confidence interval does not include zero. The reciprocal of the sampling variance was used to weight individual effect sizes (e.g., Lipsey & Wilson, 2001).

We assessed moderation by exploring the heterogeneity of the effect sizes. To do so, the total heterogeneity of the weighted mean effect sizes ( $Q^T$ ) was examined. This provides

an indication of whether the variance of the weighted mean effect size is greater than that which would be expected from sampling error. Heterogeneity was also assessed by calculating the degree of inconsistency in the observed relationship across studies ( $I^2$ ). Values of 25, 50 and 75% are indicative of low, medium, and high levels of heterogeneity (Higgins & Thompson, 2002). Where substantial heterogeneity existed, we followed two approaches. First, for categorical moderators, subgroup analyses were performed. These analyses estimate meta-analytic effects for each category. Specific differences between categories can be examined by comparing the overlap between 95% confidence intervals for effect sizes (e.g., Cumming & Finch, 2005). We conducted such analyses when there were two categories with more than one effect size (at least two effect sizes are required to calculate a meta-analytic effect; Higgins et al., 2019; Lipsey & Wilson, 2001). Second, for non-categorical moderators, meta-regression was used to test if the variable was a significant covariate within the meta-regression model.

Next, we assessed studies for publication bias. These tests help to determine whether in this area statistically significant results are more likely to be published than non-statistically significant results (Rothstein et al., 2006). We first examined Rosenthal's (1979) fail-safe number. According to Rosenthal (1979), ideally this number needs to be larger than  $5 \times$  the number of effects + 10. We also calculated Egger's regression intercept. This process regresses the effect size on the reciprocal of its standard error (Egger et al., 1997). If no publication bias is present, Egger's regression does not differ from zero.

Finally, we followed two procedures to compare the relative importance of burnout versus job satisfaction in predicting intentions to quit. First, we created a correlation matrix of meta-analytic correlations. Following MacCann et al. (2020), the correlations were drawn from (a) the present meta-analysis (burnout/intentions to quit, job satisfaction/intentions to quit, and burnout/job satisfaction) and (b) the published meta-analysis by Lee and Ashforth

(1996) for intercorrelations between burnout dimensions (which are based on 47 studies). We used this matrix to run a multiple regression analysis where all burnout dimensions and job satisfaction were entered simultaneously to predict intentions to quit. In addition, we conducted relative weights analyses using the *R* code provided by Tonidandel and LeBreton (2011). These analyses calculate the amount of explained variance attributable to each of the predictors (and are especially valuable when predictors show strong correlations with one another; Johnson & LeBreton, 2004).

## Results

We first provide a summary of the characteristics of the reviewed studies. We then report the findings of the meta-analysis, followed by the results of the regression and relative importance analysis.

### Sample Characteristics

**Burnout.** In the studies examining burnout and intentions to quit, a total of 3,842 teachers were recruited. They were on average 37.4 years old, 72.9% female, and had 10.3 years of experience. Out of the 11 samples, three samples recruited teachers from primary school settings and one sample from a tertiary setting. The remaining samples were from either mixed levels ( $k = 5$ ) or it was unclear ( $k = 2$ ). In terms of where studies took place, six studies included samples from North America (USA, Canada), five studies included samples from other areas (e.g., China, New Zealand, Belgium). Of the 10 studies (and 11 samples), two were dissertations and the rest were peer-reviewed journal articles. In terms of measures used, two samples used the original MBI, eight samples used the educator version of the MBI, and one sample used the Utrecht Burnout Scale for Teachers.

**Job Satisfaction.** In the studies examining job satisfaction and intentions to quit, a total of 6,678 teachers were recruited. They were on average 37.8 years old, 68.9% female, and had 12.1 years of experience. Out of the 14 samples, five samples recruited teachers

from secondary school settings, three samples from tertiary settings, and one sample from primary school settings. The remaining samples were from either mixed levels ( $k = 2$ ) or it was unclear ( $k = 3$ ). In terms of where studies took place, six studies included samples from North America (USA, Canada), seven studies included samples from other areas (e.g., Pakistan, Norway), and for one study it was unclear. Of the 14 studies and 14 samples, all were peer-reviewed journal articles.

### Overall Meta-Analytic Effect Sizes

**Burnout.** Meta-analytic effect sizes of the relationship between burnout and intentions to quit can be found in Table 3. In this regard, exhaustion showed a medium positive relationship with intentions to quit ( $r^+ = .41$ ; 95% CI = .32, .50;  $N = 3,842$ ).

Depersonalization showed a medium positive relationship with intentions to quit ( $r^+ = .32$ ; 95% CI = .13, .49;  $N = 2,261$ ). Reduced accomplishment showed a medium positive relationship with intentions to quit ( $r^+ = .21$ ; 95% CI = .04, .36;  $N = 2,136$ ). See Figures S1-3 in the Supplementary Material for forest plots of individual effects.

**Job Satisfaction.** The meta-analyzed effect sizes for the relationship between job satisfaction and intentions to quit are presented in Table 3. Job satisfaction showed a medium negative relationship with intentions to quit ( $r^+ = -.40$ ; 95% CI =  $-.47, -.32$ ;  $N = 6,678$ ). See Figure S4 in the Supplementary Material for a forest plot of individual effects.

### Moderator Analysis

**Burnout.** An examination of the total heterogeneity of the weighted mean effects suggested that there was substantial moderation. To explore this further, moderation analyses were conducted on age, percentage female, experience, year of publication, burnout measure, country, and domain. Meta regression suggested that age (Exhaustion:  $\beta = -.50$ ,  $p = .17$ ; Depersonalization:  $\beta = .20$ ,  $p = .71$ ; Reduced accomplishment:  $\beta = .22$ ,  $p = .73$ ), percentage female (Exhaustion:  $\beta = .21$ ,  $p = .51$ ; Depersonalization:  $\beta = -.13$ ,  $p = .74$ ; Reduced

accomplishment:  $\beta = .02, p = .97$ ), and experience (Exhaustion:  $\beta = -.01, p = .99$ ; Depersonalization:  $\beta = .31, p = .57$ ; Reduced accomplishment:  $\beta = .28, p = .65$ ) did not moderate the relationships between burnout dimensions and intentions to quit. Publication year, however, emerged as a significant moderator of the relationships between burnout dimensions and intentions to quit (Exhaustion:  $\beta = .78, p < .001$ ; Depersonalization:  $\beta = .69, p = .029$ ; Reduced accomplishment:  $\beta = .88, p < .001$ ). In this regard, the strength of this relationship seems to have increased over time. We have plotted these relationships in Figures 2, 3, and 4. Finally, based on the overlap of 95% confidence intervals, subgroup analyses suggested that effects were no different across burnout measures (Exhaustion: MBI = .30 [-.92, .98], MBI-ES = .42 [.31, .52])<sup>3</sup>, countries (Exhaustion: North America = .41 [.25, .54], Other Countries = .42 [.22, .58]; Depersonalization: North America = .22 [.02, .41], Other Countries = .45 [-.12, .80]; Reduced accomplishment: North America = .17 [-.08, .40], Other Countries = .28 [-.84, .95]), or domains (Exhaustion: Mixed = .47 [.38, .55], Primary = .47 [.17, .69]).<sup>4</sup> See Table 4 for an overview of the number of effects in each subgroup.

**Job satisfaction.** For job satisfaction, total heterogeneity suggested there was substantial moderation. We examined age, percentage female, experience, year of publication, country, and domain. Meta regression suggested that age ( $\beta = -.08, p = .81$ ), percentage female ( $\beta = -.26, p = .35$ ), experience ( $\beta = .09, p = .75$ ), and year ( $\beta = -.24, p =$

---

<sup>3</sup>There was an insufficient number of studies for comparisons for depersonalization and reduced accomplishment (only one category exceeds the required number of effects [i.e., 2]). In addition, the effect size for exhaustion using the MBI is based on only two studies (see Table 4).

<sup>4</sup>There was an insufficient number of studies for comparisons for depersonalization or reduced accomplishment.

.34) did not moderate the relationships between burnout dimensions and intentions to quit. Finally, based on the overlap of 95% confidence intervals, subgroup analyses suggested that effects were no differences across countries (North America = -.40 [-.48, -.31]; Other Countries = -.41 [-.55, -.26]) or domains (Tertiary = -.35 [-.65, .05]; Secondary = -.38 [-.50, -.25]; Mixed = -.51 [-.87, .21]). See Table 4 for an overview of the number of effects.

### **Publication bias**

**Burnout.** There was little evidence for publication bias (see Table 3). Rosenthal's fail-safe numbers surpassed the proposed threshold and Egger's regression intercept did not differ from zero.

**Job satisfaction.** There was again little evidence for publication bias (see Table 3).

### **Comparison**

As a first step to comparing the predictive utility of burnout and job satisfaction, we ran a meta-analysis of the relationship between the two. Exhaustion showed a medium-to-large negative relationship with job satisfaction ( $r^+ = -.42$ ; 95% Confidence Interval =  $-.48, -.36$ ;  $N = 14,217$ ). Depersonalization showed a medium negative relationship with job satisfaction ( $r^+ = -.33$ ; 95% Confidence Interval =  $-.38, -.28$ ;  $N = 6,340$ ). Reduced accomplishment showed a medium negative relationship with job satisfaction ( $r^+ = -.30$ ; 95% Confidence Interval =  $-.38, -.22$ ;  $N = 7,831$ ). Full details can be found in the supplementary material.

The results of the multiple regression and relative weights analyses can be found in Table 5. Overall, the model explained 27% of the variance in intentions to quit. Exhaustion and job satisfaction were the most important predictors (each accounting for approximately 37% of the explained variance). When the variance attributable to the individual burnout dimensions was combined, burnout explained 63% of the explained variance. These findings suggest that burnout is likely to be a more important predictor of teachers' intentions to quit than is job satisfaction.

## Discussion

In the present study we aimed to provide the first meta-analytic examination of (a) the relationship between burnout and teachers' intentions to quit, (b) the relationship between job satisfaction and teachers' intentions to quit, and (c) whether burnout or job satisfaction is more important in predicting teachers' intentions to quit. Aligned with our hypotheses, all three symptoms of burnout positively predicted intentions to quit and job satisfaction negatively predicted intentions to quit. In addition, burnout symptoms emerged as a relatively more important predictor of intentions to quit than job satisfaction.

### **Burnout and Intentions to Quit**

Burnout affects teachers in many ways. This includes experiences of interpersonal conflict and tiredness both inside and outside of the classroom (Ghanizadeh & Jahedizadeh, 2015), their levels of self-efficacy (Aloe, Amo, & Shanahan, 2014) and their experiences of emotional labor (Kinman et al., 2011; Näring et al., 2006). Here, for the first time from a meta-analytic perspective, we confirm that teacher burnout is linked to the extent to which teachers are likely to quit. In the present study, we show that, in comparison to effects typically found in the literature (e.g., Bosco et al., 2015), burnout has large-sized effects on teachers' intentions to quit. Given the personal and societal implications of teacher attrition, the present findings reiterate that burnout is likely key to developing an understanding of teacher turnover.

We found that all three burnout symptoms (exhaustion, depersonalization, and reduced accomplishment) were implicated in teachers' intentions to quit to some degree. In line with theory (e.g., Leiter, 1993), is not surprising that exhaustion is linked to turnover intentions. When teachers have depleted resources and drained emotions, they tend to struggle with both class preparation and actual classroom activities (Chang, 2009). Depersonalization also affects interpersonal relationships and likely creates or increases conflict with various

groups, including students, colleagues, and parents. Reduced accomplishment was also implicated in teacher attrition. It is likely that such perceptions will drive down both motivation and self-esteem. Combined, burnout symptoms mean that teachers are likely to engage in extreme avoidance behaviors and in many cases develop a need to leave their teaching jobs altogether.

When controlling for the overlap between the three burnout dimensions (and job satisfaction), exhaustion contributed the majority of variance to the prediction of intentions to quit. This is similar to research in many other areas where exhaustion has emerged as the most important predictor (e.g., Swider & Zimmerman, 2010). On the other hand, and in line with our expectations, reduced accomplishment was the least important of the three burnout dimensions, contributing only 10% to the explain variance. This was found previously in relation to general work outcomes, where Lee and Ashforth (1996) concluded that perceptions of efficacy may not be as relevant for work outcomes as the affective elements of burnout. Future work may choose to distill why it is the affective elements, exhaustion in particular, that are so important for teacher attrition.

We also explored potential moderators of the burnout and intentions to quit relationship. Of the factors that we examined, publication year was the only factor to emerge as a significant moderator, which did so for all three burnout dimensions. This finding is particularly noteworthy because it suggests that the strength of the association between burnout and intentions to quit is increasing over time. In other words, teachers who experience high levels of burnout are now more likely to intend to leave the profession than they would have been 35 years ago. This finding is even more troubling if this trend persists, especially if levels of teacher burnout continue to rise. What may explain this effect? One explanation lies in changes in the structure and function of teaching over the last thirty years (see e.g., Darling-Hammond & Bransford, 2007). In this regard, not only have teaching hours

changed but so have the demands outside the classroom (e.g., increased pastoral care). In addition, teachers today arguably have less autonomy and face more constraints in their roles (Parker, 2015). These factors likely lead teachers to feel entrapped and without viable support. So, when teachers do begin to experience burnout, quitting becomes the only viable option. These findings reiterate the necessity for policy makers and school leaders to be aware of potential sources of burnout and how to help teachers who experience it.

### **Job Satisfaction and Intentions to Quit**

Job satisfaction has been linked to increased productivity and reduced turnover in several different work contexts (Aydogdu & Asikgil, 2011; Tett & Meyer, 1993). For the first time from a meta-analytic perspective, we confirm that this is also the case in relation to teacher turnover intentions. While there are large discrepancies between individual studies in terms of the size of this effect (ranging from  $< .10$  to  $> .50$ ), when these effects were aggregated and compared to disciplinary norms, job satisfaction shows a large negative relationship with teachers' intentions to quit. That is, in line with general work setting findings (Whitaker, 2000), teachers who perceive that their jobs meet their expectations are more likely to stay in their role. This association may be attributed to the tendency that teachers who are satisfied likely derive more enjoyment from their roles, are more self-efficacious, and enthusiastic (Burić & Moè, 2020). Together, these outcomes are also likely to have positive effects for both other teachers and students. Dissatisfaction, on the other hand, is likely to leave teachers lacking motivation, deriving less enjoyment and can result in possible withdrawal from the classroom, and—as the present findings attest to— withdrawal from working as a teacher altogether. Making sure that teachers are satisfied is clearly important to protect them from wanting to leave the profession.

We also explored possible moderators of the relationship between job satisfaction and teachers' intentions to quit. In this regard, we explored several demographic, contextual, and

cultural moderators. However, we found no evidence to suggest that any of these variables acted to moderate this relationship. One possibility to explain these findings is that there are other factors that were not considered in the present study which serve as moderators (see e.g., Nyberg, 2010). It is also possible that there were too few studies for certain moderation analyses. Whereas two effect sizes are required for meta-analytic aggregation, a greater number of effect sizes will provide more accurate effect size estimates and therefore more accurate group comparisons. Because this issue in the present study was primarily the consequence of missing data, we encourage researchers to systematically report as many demographic factors as possible when conducting research in this area. Alternatively, these findings could suggest that job satisfaction may protect all teachers from leaving their roles to a similar degree, given the significant heterogeneity statistics, however, this seems unlikely. Future work should therefore seek to identify whether there are indeed other factors or conditions that affect the relationship job satisfaction has with teachers' intentions to quit.

### **Burnout or Job Satisfaction?**

Based on the Job Demands-Resources Model, the final purpose of the present study was to determine whether burnout or job satisfaction was relatively more important for teacher turnover. In doing so, for the first time, we also examined the strength of the relationship between burnout and job satisfaction in teachers. In line with theory, we found that all burnout dimensions were negatively correlated with job satisfaction. These correlations were all medium sized. Based on the size of these correlations and the associated overlap, burnout and job satisfaction, although related, should be viewed as distinct constructs and not just opposites. Burnout comprises more than a general dislike for one's work and likely extends to an appraisal of one's ability. As such, teachers who are dissatisfied are not necessarily burnt out, and those who are satisfied are not necessarily burnout free.

The results of multiple regression and relative importance analyses provide us with several noteworthy findings also. First, when burnout and job satisfaction are examined in combination, they explain over a quarter of the variance in intentions to quit — clearly a substantial and meaningful percentage in context of the consequences of teacher dropout. Providing further support for our notion that both burnout *and* satisfaction are important for teachers. Second, although job satisfaction explained a similar amount of variance as exhaustion, when burnout is considered as a whole (as in, three symptoms) it accounts for a larger proportion of the variance than does job satisfaction. It is therefore possible that burnout pervades all teachers' work-related experiences and is consequently a major determinant of their intentions to leave the profession.

### **Implications for Practice**

Teacher shortage is an international problem (UNESCO Institute of Statistics, 2016). Although increasing teacher recruitment would be one strategy to address this, the problem will remain as long as the attrition rate is so high (Sutcher et al., 2019). Our findings indicate that although increasing job satisfaction may be one method to prevent attrition, the more effective approach may be through preventing and/or alleviating burnout, particularly exhaustion. However, we note that given the links between burnout and job satisfaction, interventions reducing burnout may concurrently increase job satisfaction. This should be seen as a benefit of any potential intervention.

Interventions for burnout can be applied at both the organization and individual levels (Maslach, 2003). Organizational changes that reduce demands (e.g., reduce workloads) may be highly effective in alleviating burnout risk, as can increasing the correspondence between the required and provided resources (Panagioti et al., 2007). In addition, providing autonomy supportive environments (e.g., involving teachers in decision making) and increasing levels of social support can help protect individuals from burnout (Awa et al., 2010).

Moreover, at the individual level, resources may be most optimally directed towards teacher education programs and professional development programs that equip teachers with the ability to identify early symptoms of burnout and coping resources and strategies to combat these symptoms. This may be through offering programs, such as Cognitive Behavioral Therapy-based interventions and stress-management workshops (Cooley & Yovanoff, 1996) and mindfulness training (Roeser et al., 2013), that are offered to all or through a self-referral or referral service system. We would encourage stakeholders to consider a combination of both organizational and individual interventions, as it is highly possible this approach will be very effective (see e.g., West et al., 2016).

### **Limitations and Suggestions for Future Research**

The present meta-analysis is based on studies adopting cross-sectional designs. Consequently, the findings need to be interpreted bearing in mind that they provide limited evidence in regard to causation. There are some examples of longitudinal studies in this area, but these are few and far between (e.g., Kelly & Northrop, 2015). Therefore, one clear direction for further work is to adopt more longitudinal research designs when examining the associations between these three constructs. Designs that allow for within-person analyses of change over time (e.g., changes in burnout preceding changes in intentions) may be of particular interest.

For the present meta-analysis, we relied on intentions as a proxy for teacher attrition. We alluded to the benefits of this approach in the introduction. This approach was supported by the fact that our literature search found very few studies that had measured actual attrition. This is not surprising given the complexity of such studies (see also Billingsley et al., 2004). As such, we call for large multi-center studies that provide the means to systematically examine attrition with more complex designs and measurement processes.

Although our final model explained a large proportion of the variance in teachers'

intentions to quit, a substantial proportion was still unaccounted for. There is a growing body of literature outlining possible predictors and correlates of attrition (e.g., Nguyen et al., 2020). Such factors that could therefore help to account for these differences include help seeking, school climates, role stability, and emotional regulation (e.g., Billingsley & Bettini, 2019). These are some other examples that research and policy need to think about, and future work may benefit from further examination of these factors in combination with those of the present study.

Finally, we know little about the dynamics as to how teacher burnout may affect the experiences of others in school. For example, teachers' symptoms of burnout may become emotional contagions via interpersonal transmission that may affect or even amplify other staff's symptoms of burnout. The possible emotional contagion effect would then certainly be of concern to school leaders (e.g., Bakker & Schaufeli, 2000). The contagious effect of teacher burnout is also of concern for students, given that there is evidence that teacher burnout is associated with worse student performance and lower student motivation (Klusmann, Richter, & Lüdtke, 2016; Shen et al., 2015). Therefore, future studies examining how and why teacher burnout affects students would be valuable.

## **Conclusion**

The present meta-analysis provides the most comprehensive evidence that both burnout and job satisfaction are related to teachers' intentions to quit. Importantly, the findings suggest that burnout may confer a greater risk for teacher attrition than satisfaction confers protection, and that this risk may be increasing. Accordingly, preventing burnout is likely to be central to reducing teacher attrition.

## References

References marked with an asterisk indicate studies included in the meta-analysis.

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.
- Aloe, A. M., Amo, L. C., & Shanahan, M. E. (2014). Classroom management self-efficacy and burnout: A multivariate meta-analysis. *Educational Psychology Review*, 26, 101–126.
- Awa, W. L., Plaumann, M., & Walter, U. (2010). Burnout prevention: A review of intervention programs. *Patient Education and Counseling*, 78, 184-190.
- Aydogdu, S., & Asikgil, B. (2011). An empirical study of the relationship among job satisfaction, organizational commitment and turnover intention. *International Review of Management and Marketing*, 1, 43-53.
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, 22, 309-328.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. Macmillan.
- Bartram, T., Casimir, G., Djurkovic, N., Leggat, S. G., & Stanton, P. (2012). Do perceived high performance work systems influence the relationship between emotional labour, burnout and intention to leave? A study of Australian nurses. *Journal of Advanced Nursing*, 68, 1567-1578.
- Beer, J., & Beer, J. (1992). Burnout and stress, depression and self-esteem of teachers. *Psychological Reports*, 71, 1331-1336.
- Billingsley, B. S. (1993). Teacher retention and attrition-in special and general education: A critical review of the literature. *The Journal of Special Education*, 27, 137-174.
- Billingsley, B. S. (2004). Special education teacher retention and attrition: A critical analysis of the research literature. *The Journal of Special Education*, 38, 39-55.

- Billingsley, B., & Bettini, E. (2019). Special education teacher attrition and retention: A review of the literature. *Review of Educational Research, 89*, 697-744.
- Borman, G. D., & Dowling, N. M. (2008). Teacher attrition and retention: A meta-analytic and narrative review of the research. *Review of Educational Research, 78*, 367-409.
- Bosco, F. A., Aguinis, H., Singh, K., Field, J. G., & Pierce, C. A. (2015). Correlational effect size benchmarks. *Journal of Applied Psychology, 100*, 431-449.
- Bowling, N. A. (2007). Is the job satisfaction–job performance relationship spurious? A meta-analytic examination. *Journal of Vocational Behavior, 71*, 167–185.
- Bresó, E., Schaufeli, W. B., & Salanova, M. (2011). Can a self-efficacy-based intervention decrease burnout, increase engagement, and enhance performance? A quasi-experimental study. *Higher Education, 61*, 339-355.
- Brunsting, N. C., Sreckovic, M. A., & Lane, K. L. (2014). Special education teacher burnout: A synthesis of research from 1979 to 2013. *Education and Treatment of Children, 37*, 681-711.
- \*Bukhari, I., & Kamal, A. (2017). Perceived organizational support, its behavioral and attitudinal work outcomes: Moderating role of perceived organizational politics. *Pakistan Journal of Psychological Research, 32*, 13-26.
- Burić, I., & Moè, A. (2020). What makes teachers enthusiastic: The interplay of positive affect, self-efficacy and job satisfaction. *Teaching and Teacher Education, 89*, 103008.
- \*Carson, R. L., Baumgartner, J. J., Matthews, R. A., & Tsouloupas, C. N. (2010). Emotional exhaustion, absenteeism, and turnover intentions in childcare teachers: Examining the impact of physical activity behaviors. *Journal of Health Psychology, 15*, 905-914.
- Carver-Thomas, D., & Darling-Hammond, L. (2019). The trouble with teacher turnover: How teacher attrition affects students and schools. *Education Policy Analysis Archives, 27*, 1-32.

Chambers Mack, J., Johnson, A., Jones-Rincon, A., Tsatenawa, V., & Howard, K. (2019).

Why do teachers leave? A comprehensive occupational health study evaluating intent-to-quit in public school teachers. *Journal of Applied Biobehavioral Research*, *24*, e12160.

Chang, M. L. (2009). An appraisal perspective of teacher burnout: Examining the emotional work of teachers. *Educational Psychology Review*, *21*, 193-218.

\*Cheng, M. N. (2008). *Job stress, self-efficacy, burnout, and intention to leave among kindergarten teachers in Taiwan*. Dissertation, Lynn University.

\*Chughtai, A. A., & Zafar, S. (2006). Antecedents and consequences of organizational commitment among Pakistani university teachers. *Applied HRM Research*, *11*, 39-45.

Cohen, J., McCabe, L., Michelli, N. M., & Pickeral, T. (2009). School climate: Research, policy, practice, and teacher education. *Teachers College Record*, *111*, 180-213.

\*Conley, S., & You, S. (2009). Teacher role stress, satisfaction, commitment, and intentions to leave: A structural model. *Psychological Reports*, *105*, 771-786.

\*Conley, S., & You, S. (2014). Role stress revisited: Job structuring antecedents, work outcomes, and moderating effects of locus of control. *Educational Management Administration & Leadership*, *42*, 184-206.

\*Conley, S., & You, S. (2017). Key influences on special education teachers' intentions to leave: The effects of administrative support and teacher team efficacy in a mediational model. *Educational Management Administration & Leadership*, *45*, 521-540.

Cooley, E., & Yovanoff, P. (1996). Supporting professionals-at-risk: Evaluating interventions to reduce burnout and improve retention of special educators. *Exceptional Children*, *62*, 336-355.

\* Cross, L. H., & Billingsley, B. S. (1994). Testing a model of special educators' intent to stay in teaching. *Exceptional Children*, *60*, 411-421.

- Cumming, G., & Finch, S. (2005). Inference by eye: Confidence intervals and how to read pictures of data. *American Psychologist*, *60*, 170–180.
- Darling-Hammond, L. (2010). Recruiting and retaining teachers: Turning around the race to the bottom in high-need schools. *Journal of Curriculum and Instruction*, *4*, 16–32.
- Darling-Hammond, L., & Bransford, J. (Eds.). (2007). *Preparing teachers for a changing world: What teachers should learn and be able to do*. John Wiley & Sons.
- Department for Education. (2019). Teacher Recruitment and Retention Strategy; Supporting teachers to make a difference.  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/773930/Teacher\\_Retention\\_Strategy\\_Report.PDF.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/773930/Teacher_Retention_Strategy_Report.PDF.pdf)
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*, 499-512.
- De Neve, D., & Devos, G. (2017). Psychological states and working conditions buffer beginning teachers' intention to leave the job. *European Journal of Teacher Education*, *40*, 6-27.
- Duval, S. J., & Tweedie, R. L. (2000). A nonparametric “trim and fill” method of accounting for publication bias in meta-analysis. *Journal of the American Statistical Association*, *95*, 89– 98.
- Dyrbye, L. N., Thomas, M. R., Massie, F. S., Power, D. V., Eacker, A., Harper, W., ... & Sloan, J. A. (2008). Burnout and suicidal ideation among US medical students. *Annals of Internal Medicine*, *149*(5), 334-341.
- Egger, M., Smith, G. D., Schneider, M., & Minder, C. (1997). Bias in meta-analysis detected by a simple, graphical test. *British Medical Journal*, *315*, 629–634.
- El Ansari, W., & Stock, C. (2010). Is the health and wellbeing of university students associated with their academic performance? Cross sectional findings from the United

Kingdom. *International Journal of Environmental Research and Public Health*, 7, 509-527.

\*Eldor, L., & Shoshani, A. (2017). Are you being served? The relationship between school climate for service and teachers' engagement, satisfaction, and intention to leave: A moderated mediation model. *The Journal of Psychology*, 151, 359-378.

Fan, H., Xu, J., Cai, Z., He, J., & Fan, X. (2017). Homework and students' achievement in math and science: A 30-year meta-analysis, 1986–2015. *Educational Research Review*, 20, 35-54.

Faragher, E. B., Cass, M., & Cooper, C. L. (2005). The relationship between job satisfaction and health: A meta-analysis. *Occupational and Environmental Medicine*, 62, 105-112.

Folkman, S., Lazarus, R. S., Pimley, S., & Novacek, J. (1987). Age differences in stress and coping processes. *Psychology and Aging*, 2, 171-184.

Gersten, R., Keating, T., Yovanoff, P., & Harniss, M. K. (2001). Working in special education: Factors that enhance special educators' intent to stay. *Exceptional Children*, 67, 549-567.

Gilboa, S., Shirom, A., Fried, Y., & Cooper, C. (2008). A meta-analysis of work demand stressors and job performance: examining main and moderating effects. *Personnel Psychology*, 61, 227-271.

Groot, W., & Maassen van den Brink, H. (2007). The health effects of education. *Economics of Education Review*, 26, 186-200.

Hampel, P., & Petermann, F. (2005). Age and gender effects on coping in children and adolescents. *Journal of Youth and Adolescence*, 34, 73-83.

Haydon, T., Leko, M. M., & Stevens, D. (2018). Teacher stress: Sources, effects, and protective factors. *Journal of Special Education Leadership*, 31, 98-120.

Henne, D., & Locke, E. A. (1985). Job dissatisfaction: What are the consequences?

*International Journal of Psychology*, 20, 221-240.

Higgins, J. P., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (Eds.). (2019). *Cochrane handbook for systematic reviews of interventions*. John Wiley & Sons.

Higgins, J. P., & Thompson, S. G. (2002). Quantifying heterogeneity in a meta-analysis. *Statistics in Medicine*, 21, 1539-1558.

\*Houkes, I., Janssen, P. P., de Jonge, J., & Nijhuis, F. J. (2001). Specific relationships between work characteristics and intrinsic work motivation, burnout and turnover intention: A multi-sample analysis. *European Journal of Work and Organizational Psychology*, 10, 1-23.

\*Høigaard, R., Giske, R., & Sundslø, K. (2012). Newly qualified teachers' work engagement and teacher efficacy influences on job satisfaction, burnout, and the intention to quit. *European Journal of Teacher Education*, 35, 347-357.

Iancu, A. E., Rusu, A., Măroiu, C., Păcurar, R., & Maricuțoiu, L. P. (2018). The effectiveness of interventions aimed at reducing teacher burnout: A meta-analysis. *Educational Psychology Review*, 30, 373-396.

Ingersoll, R. M. (2003). *Is there really a teacher shortage?* Seattle: University of Washington, Center for the Study of Teaching and Policy.

IsHak, W., Nikraves, R., Lederer, S., Perry, R., Ogunyemi, D., & Bernstein, C. (2013). Burnout in medical students: a systematic review. *The Clinical Teacher*, 10, 242-245.

\*Jackson, S. E., Schwab, R. L., & Schuler, R. S. (1986). Toward an understanding of the burnout phenomenon. *Journal of Applied Psychology*, 71, 630-640.

\* Jamal, M., & Baba, V. V. (2001). Type-A behavior, job performance, and well-being in college teachers. *International Journal of Stress Management*, 8, 231-240.

Johnson, J. W., & LeBreton, J. M. (2004). History and use of relative importance indices in

- organizational research. *Organizational Research Methods*, 7, 238-257.
- Jourdain, G., & Chênevert, D. (2010). Job demands–resources, burnout and intention to leave the nursing profession: A questionnaire survey. *International Journal of Nursing Studies*, 47, 709-722.
- Kinman, G., Wray, S., & Strange, C. (2011). Emotional labour, burnout and job satisfaction in UK teachers: the role of workplace social support. *Educational Psychology Review*, 31, 843–856.
- Klassen, R. M., & Chiu, M. M. (2011). The occupational commitment and intention to quit of practicing and pre-service teachers: Influence of self-efficacy, job stress, and teaching context. *Contemporary Educational Psychology*, 36, 114-129.
- Klusmann, U., Richter, D., & Lüdtke, O. (2016). Teachers' emotional exhaustion is negatively related to students' achievement: Evidence from a large-scale assessment study. *Journal of Educational Psychology*, 108, 1193-1203.
- \*Kuntz, J. R., Näswall, K., & Bockett, A. (2013). Keep calm and carry on? An investigation of teacher burnout in a post-disaster context. *New Zealand Journal of Psychology (Online)*, 42, 57-68.
- Kyriacou, C. (1987). Teacher stress and burnout: An international review. *Educational Research*, 29, 146-152.
- Lachman, R., & Diamant, E. (1987). Withdrawal and restraining factors in teachers' turnover intentions. *Journal of Organizational Behavior*, 8, 219-232.
- \*Ladebo, O. J. (2005). Effects of work-related attitudes on the intention to leave the profession: An examination of school teachers in Nigeria. *Educational Management Administration & Leadership*, 33, 355-369.
- \* Latif, H., Majoka, M. I., & Khan, M. I. (2017). Emotional intelligence and job performance of high school female teachers. *Pakistan Journal of Psychological Research*, 32, 36-45.

- Lee, T. W. (1988). How job dissatisfaction leads to employee turnover. *Journal of Business and Psychology, 2*, 263-271.
- Lee, R. T., & Ashforth, B. E. (1996). A meta-analytic examination of the correlates of the three dimensions of job burnout. *Journal of Applied Psychology, 81*, 123-133.
- Leiter, M. P. (1993). *Burnout as a developmental process: Consideration of models*. In W. B. Schaufeli, C. Maslach, & T. Marek (Eds.), *Series in applied psychology: Social issues and questions. Professional burnout: Recent developments in theory and research* (p. 237–250). Taylor & Francis.
- Leiter, M. P., & Maslach, C. (1988). The impact of interpersonal environment on burnout and organizational commitment. *Journal of Organizational Behavior, 9*, 297-308.
- Leung, D. Y., & Lee, W. W. (2006). Predicting intention to quit among Chinese teachers: Differential predictability of the components of burnout. *Anxiety, Stress, and Coping, 19*, 129-141.
- \* Li, X. (2013). Chinese school teachers' organizational citizenship behavior (OCB): Predictors and outcomes. *PsyCh Journal, 2*, 146-159.
- \*Li, Y., Li, J., & Sun, Y. (2013). Young faculty job perceptions in the midst of Chinese higher education reform: the case of Zhejiang University. *Asia Pacific Journal of Education, 33*, 273-294.
- Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis*. Thousand Oaks, CA: Sage.
- \*Litt, M. D., & Turk, D. C. (1985). Sources of stress and dissatisfaction in experienced high school teachers. *The Journal of Educational Research, 78*, 178-185.
- Lu, H., Zhao, Y., & While, A. (2019). Job satisfaction among hospital nurses: A literature review. *International Journal of Nursing Studies, 94*, 21-31.
- MacCann, C., Jiang, Y., Brown, L. E. R., Double, K. S., Bucich, M., & Minbashian, A. (2020). Emotional intelligence predicts academic performance: A meta-analysis.

- Psychological Bulletin*, 146, 150–186.
- Macdonald, D. (1999). Teacher attrition: A review of literature. *Teaching and Teacher Education*, 15, 835-848.
- Maslach, C. (2003). Job burnout: New directions in research and intervention. *Current Directions in Psychological Science*, 12, 189-192.
- Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Organizational Behavior*, 2(2), 99-113.
- Maslach, C., Jackson, S. E., Leiter, M. P., Schaufeli, W. B., & Schwab, R. L. (1986). *Maslach burnout inventory* (Vol. 21, pp. 3463-3464). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C., & Schaufeli, W. B. (1993). *Historical and conceptual development of burnout*. In W. B. Schaufeli, C. Maslach, & T. Marek (Eds.), *Series in applied psychology: Social issues and questions. Professional burnout: Recent developments in theory and research* (p. 1–16). Taylor & Francis.
- McHugh, M. L. (2012). Interrater reliability: The Kappa statistic. *Biochemia Medica*, 22, 276-282.
- Näring, G., Briët, M., & Brouwers, A. (2006). Beyond demand–control: Emotional labour and symptoms of burnout in teachers. *Work & Stress*, 20, 303–315.
- Nguyen, T. D., Pham, L. D., Crouch, M., & Springer, M. G. (2020). The correlates of teacher turnover: An updated and expanded meta-analysis of the literature. *Educational Research Review*, 31, 100355.
- Nyberg, A. (2010). Retaining your high performers: Moderators of the performance–job satisfaction–voluntary turnover relationship. *Journal of Applied Psychology*, 95, 440-453.
- OECD. (2020). *TALIS 2018 Results (Volume II) Teachers and School Leaders as Valued*

*Professionals*. [https://www.oecd-ilibrary.org/education/annex-bmain-breakdown-variables\\_d1ba43b3-en](https://www.oecd-ilibrary.org/education/annex-bmain-breakdown-variables_d1ba43b3-en)

- \*Ogus, E. D. (2006). Burnout among professionals: Work stress, coping and gender. Dissertation: York University.
- Ongori, H. (2007), A review of the literature on employee turnover. *African Journal of Business Management*, 1, 49-54
- Panagioti, M., Panagopoulou, E., Bower, P., Lewith, G., Kontopantelis, E., Chew-Graham, C., ... & Esmail, A. (2017). Controlled interventions to reduce burnout in physicians: a systematic review and meta-analysis. *JAMA Internal Medicine*, 177, 195-205.
- Parker, G. (2015). Teachers' autonomy. *Research in Education*, 93, 19-33.
- Pearson, C. A. (1995). The turnover process in organizations: An exploration of the role of met-unmet expectations. *Human Relations*, 48, 405-420.
- Petitta, L., & Vecchione, M. (2011). Job burnout, absenteeism, and extra role behaviors. *Journal of Workplace Behavioral Health*, 26, 97-121.
- \*Proost, K., Van Ruysseveldt, J., & van Dijke, M. (2012). Coping with unmet expectations: Learning opportunities as a buffer against emotional exhaustion and turnover intentions. *European Journal of Work and Organizational Psychology*, 21, 7-27.
- Purvanova, R. K., & Muros, J. P. (2010). Gender differences in burnout: A meta-analysis. *Journal of Vocational Behavior*, 77, 168-185.
- Randall, M., & Scott, W. A. (1988). Burnout, job satisfaction, and job performance. *Australian Psychologist*, 23, 335-347.
- Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin*, 138, 353-387.
- Ridner, S. L., Newton, K. S., Staten, R. R., Crawford, T. N., & Hall, L. A. (2016). Predictors

- of well-being among college students. *Journal of American College Health*, *64*, 116-124.
- Roeser, R. W., Schonert-Reichl, K. A., Jha, A., Cullen, M., Wallace, L., Wilensky, R., Oberle, E., Thomson, K., Taylor, C., & Harrison, J. (2013). Mindfulness training and reductions in teacher stress and burnout: Results from two randomized, waitlist-control field trials. *Journal of Educational Psychology*, *105*, 787–804.
- Rosenthal, R. (1979). The “file drawer problem” and tolerance for null results. *Psychological Bulletin*, *86*, 638-641.
- Roth, P. L., & Clarke, R. L. (1998). Meta-analyzing the relation between grades and salary. *Journal of Vocational Behavior*, *53*, 386-400.
- Rothstein, H. R., Sutton, A. J., & Borenstein, M. (2006). *Publication bias in meta-analysis: Prevention, assessment and adjustments*. New York, NY: John Wiley & Sons.
- Salanova, M., Agut, S., & Peiró, J. M. (2005). Linking organizational resources and work engagement to employee performance and customer loyalty: The mediation of service climate. *Journal of Applied Psychology*, *90*, 1217-1227.
- Salmela-Aro, K., Kiuru, N., Leskinen, E., & Nurmi, J. E. (2009). School Burnout Inventory (SBI) reliability and validity. *European journal of psychological assessment*, *25*(1), 48-57.
- Schaufeli, W. B., Daamen, J., & Van Mierlo, H. (1994). Burnout among Dutch teachers: An MBI-validity study. *Educational and Psychological Measurement*, *54*, 803-812.
- Schaufeli, W. B., & Taris, T. W. (2005). The conceptualization and measurement of burnout: Common ground and worlds apart. *Work & Stress*, *19*(3), 256-262.
- Schmidt, F. L., Oh, I. S., & Hayes, T. L. (2009). Fixed-versus random-effects models in meta-analysis: Model properties and an empirical comparison of differences in results. *British Journal of Mathematical and Statistical Psychology*, *62*, 97-128.

- Schneider, M., & Preckel, F. (2017). Variables associated with achievement in higher education: A systematic review of meta-analyses. *Psychological Bulletin, 143*, 565-600.
- Schleicher, A. (2018). *Valuing our Teachers and Raising their Status: How communities can help* (International Summit on the Teaching Profession). OECD Publishing.
- Shaukat, S., Vishnumolakala, V. R., & Al Bustami, G. (2019). The impact of teachers' characteristics on their self-efficacy and job satisfaction: A perspective from teachers engaging students with disabilities. *Journal of Research in Special Educational Needs, 19*, 68-76.
- Shen, B., McCaughtry, N., Martin, J., Garn, A., Kulik, N., & Fahlman, M. (2015). The relationship between teacher burnout and student motivation. *British Journal of Educational Psychology, 85*, 519-532.
- Sims, S., & Jerrim, J. (2020). *TALIS 2018: teacher working conditions, turnover and attrition*. Department for Education.
- Skaalvik, E. M., & Skaalvik, S. (2018). Job demands and job resources as predictors of teacher motivation and well-being. *Social Psychology of Education, 21*, 1251-1275.
- Spencer, S. J., Steele, C. M., & Quinn, D. M. (1999). Stereotype threat and women's math performance. *Journal of Experimental Social Psychology, 35*, 4-28.
- Sorensen, L. C., & Ladd, H. F. (2020). The hidden costs of teacher turnover. *AERA Open, 6*, 1-24.
- Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2019). Understanding teacher shortages: An analysis of teacher supply and demand in the United States. *Education Policy Analysis Archives, 27*, 1-36.
- Suurmond, R., van Rhee, H., & Hak, T. (2017). Introduction, comparison, and validation of meta-essentials: A free and simple tool for meta-analysis. *Research Synthesis Methods, 8*, 537-553.

- 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.
- Ghanizadeh, A., & Jahedizadeh, S. (2015). Teacher burnout: A review of sources and ramifications. *Journal of Education, Society and Behavioural Science, 6*, 24-39.
- Tait, M. (2008). Resilience as a contributor to novice teacher success, commitment, and retention. *Teacher Education Quarterly, 35*, 57–75.
- Taris, T. W. (2006). Is there a relationship between burnout and objective performance? A critical review of 16 studies. *Work & Stress, 20*, 316-334.
- Tett, R. P., & Meyer, J. P. (1993). Job satisfaction, organizational commitment, turnover intention, and turnover: path analyses based on meta-analytic findings. *Personnel Psychology, 46*, 259–293.
- Thorndike, E. L. (1914). Educational psychology (Vol. I-III). *New York, NY: Teachers College.*
- Toh, S. G., Ang, E., & Devi, M. K. (2012). Systematic review on the relationship between the nursing shortage and job satisfaction, stress and burnout levels among nurses in oncology/haematology settings. *International Journal of Evidence-Based Healthcare, 10*, 126-141.
- Tsigilis, N., Zournatzi, E., & Koustelios, A. (2011). Burnout among physical education teachers in primary and secondary schools. *International Journal of Humanities and Social Science, 1*, 53-58.
- \*Tsouloupas, C. N., Carson, R. L., Matthews, R., Grawitch, M. J., & Barber, L. K. (2010). Exploring the association between teachers' perceived student misbehaviour and emotional exhaustion: The importance of teacher efficacy beliefs and emotion regulation. *Educational Psychology, 30*, 173-189.

- UNESCO Institute for Statistics. (2016). *The world needs almost 69 million new teachers to reach the 2030 education goals* (No. 39).  
<http://uis.unesco.org/sites/default/files/documents/fs39-the-world-needs-almost-69-million-new-teachers-to-reach-the-2030-education-goals-2016-en.pdf>
- Vanderslice, R. (2010). Abc's of keeping the best: Attrition, burnout, and climate. *Childhood Education, 86*, 298-301.
- Van Horn, J. E., Schaufeli, W. B., Greenglass, E. R., & Burke, R. J. (1997). A Canadian-Dutch comparison of teachers' burnout. *Psychological Reports, 81*, 371-382.
- \*Vekeman, E., Devos, G., Valcke, M., & Rosseel, Y. (2017). Do teachers leave the profession or move to another school when they don't fit? *Educational Review, 69*, 411-434.
- Vansteenkiste, M., Neyrinck, B., Niemiec, C. P., Soenens, B., De Witte, H., & Van den Broeck, A. (2007). On the relations among work value orientations, psychological need satisfaction and job outcomes: A self-determination theory approach. *Journal of Occupational and Organizational Psychology, 80*, 251-277.
- Walburg, V. (2014). Burnout among high school students: A literature review. *Children and Youth Services Review, 42*, 28-33.
- \*Wang, H., Hall, N. C., & Rahimi, S. (2015). Self-efficacy and causal attributions in teachers: Effects on burnout, job satisfaction, illness, and quitting intentions. *Teaching and Teacher Education, 47*, 120-130.
- West, C. P., Dyrbye, L. N., Erwin, P. J., & Shanafelt, T. D. (2016). Interventions to prevent and reduce physician burnout: A systematic review and meta-analysis. *The Lancet, 388*, 2272-2281.
- World Health Organization. (2018) *International classification of diseases for mortality and morbidity statistics* (11th Revision). <https://icd.who.int/browse11/l-m/en> (accessed Nov.

2019).

Zedeck, S., Maslach, C., Mosier, K., & Skitka, L. (1988). Affective response to work and quality of family life: Employee and spouse perspectives. *Journal of Social Behavior and Personality*, 3, 135-157.

Table 1.

*Characteristics of Studies Included in the Meta-Analysis of Burnout and Teachers' Intentions to Quit*

Study	Sample							Effect sizes		
	Domain	Measure	Country	N	Age	Experience	%Female	E-Int	D-Int	R-Int
Carson et al. (2010)	P	MBI-ES	USA	189	33.63	8.19	99.47	.33	–	–
Cheng (2008)	P	MBI-ES	Taiwan	508	30.63	7.56	97.44	.50	.28	.17
Houkes et al. (2001)	–	MBI	Netherlands	362	46.30	–	39.00	.16	–	–
Jackson et al. (1986)	–	MBI-ES	USA	249	37.30	11.6	74.00	.15	.09	-.06
Kuntz et al. (2013)	M	MBI-ES	New Zealand	125	44.90	8.95	75.00	.40	.39	–
Li et al. (2013)	T	MBI	China	268	37.70	12.5	51.50	.43	.64	.39 <sup>5</sup>
Ogus (2006)	M	MBI-ES	Canada	188	–	–	0.00	.48	.22	.16
	M	MBI-ES	Canada	400	–	–	100.00	.38	.18	.27
Proost et al. (2012)	P	UBST	Belgium	420	27.56	–	94.00	.55	–	–
Tsouloupas et al. (2010)	M	MBI-ES	USA	610	–	–	86.39	.51	–	–
Wang et al. (2015)	M	MBI-ES	Canada	523	41.31	12.92	85.40	.53	.38	.27 <sup>6</sup>

*Note.* P = Primary. S = Secondary. T = Tertiary. M = Mixed. E-Int = Correlation between exhaustion and teachers' intentions to quit. D-Int = Correlation between depersonalization and teachers' intentions to quit. R-Int = Correlation between reduced accomplishment and teachers' intentions to quit. MBI = Maslach Burnout Inventory (Maslach & Jackson, 1981). MBI-ES = Maslach Burnout Inventory-Educators Survey (Maslach et al., 1986). UBST = Utrecht Burnout Scale for Teachers (Schaufeli & van Dierendonck, 2000).

<sup>5,6</sup> Correlations were reversed to aid interpretation (reduced accomplishment rather than accomplishment).

Table 2.

*Characteristics of Studies Included in the Meta-Analysis of Job Satisfaction and Teachers' Intentions to Quit*

Study	Sample						Effect sizes
	Domain	Country	N	Age	Experience	%Female	Sat-Int
Bukhari & Kamal (2017)	T	Pakistan	450	35.84	–	38.22	-.42
Chughtai & Zafar (2006)	T	Pakistan	125	39.00	13.00	34.00	-.14
Conley & You (2009)	S	USA	178	–	–	–	-.25
Conley & You (2014)	S	USA	177	–	16.37	–	-.45
Conley & You (2017)	S	USA	2060	–	13.80	74.80	-.48
Cross & Billingsley (1994)	–	USA	498	–	9.48	94.10	-.33
Eldor & Shoshani (2017)	M	Israel	423	42.47	16.08	88.00	-.56
Høigaard et al. (2012)	–	Norway	191	33.70	3.30	65.60	-.57
Jamal & Baba (2001)	T	Canada	420	42.00	15.00	43.00	-.42
Ladebo (2005)	P	Nigeria	165	36.40	10.00	74.54	-.44
Latif et al. (2017)	S	–	210	35.00	–	100.00	-.28
Li (2013)	–	China	493	–	–	57.20	-.20
Litt & Turk (1985)	S	USA	291	–	–	–	-.39
Vekeman et al. (2017)	M	Belgium	997	38.16	12.29	88.60	-.47

Note. P = Primary. S = Secondary. T = Tertiary. M = Mixed. Sat-Int = Correlation between job satisfaction and teachers' intentions to quit.

Table 3.

*Meta-Analytical Relationships between Burnout, Job Satisfaction, and Teachers' Intentions to Quit*

Predictor variables	<i>k</i>	<i>N</i>	<i>r</i> <sup>+</sup>	95% CI	<i>Q</i> <sup>T</sup>	<i>I</i> <sup>2</sup>	Fail-safe N	Egger's intercept	95% CI
Burnout									
Exhaustion	11	3,842	.41	.32, .50	89.95*	88.88	2960	-5.63	-14.10, 2.85
Depersonalization	7	2,261	.32	.13, .49	77.79*	92.29	602	0.81	-14.90, 16.53
Reduced accomplishment	6	2,136	.21	.04, .36	3.82	85.22	201	-3.20	-19.09, 12.70
Job Satisfaction									
	14	6,678	-.40	-.47, -.32	95.76*	86.42	5384	2.71	-0.94, 6.36

Note. \*  $p < .05$ . *k* = number of studies. *r*<sup>+</sup> = weighted mean *r*. 95% CI = 95% Confidence Interval. *Q*<sup>T</sup> = total heterogeneity of the weighted mean effect sizes. *I*<sup>2</sup> = degree of inconsistency in the observed relationship across studies.

Table 4.

Descriptive characteristics for factors included in the moderation analyses

Study characteristic	Number of effect sizes	Number of teachers
Burnout		
Exhaustion		
Burnout measure		
MBI-ES	8	2792
MBI	2	630
Country		
North America	6	2159
Other countries	5	1683
Domain		
Primary	3	1117
Mixed	5	1846
Depersonalization		
Country		
North America	4	1360
Other countries	3	901
Reduced accomplishment		
Country		
North America	4	1360
Other countries	3	901
Job satisfaction		
Country		
North America	6	3624
Other countries	7	2844
Domain		
Secondary	5	2916
Tertiary	3	995
Mixed	2	1420

*Note.* MBI = Maslach Burnout Inventory (Maslach & Jackson, 1981). MBI-ES = Maslach Burnout Inventory-Educators Survey (Maslach et al., 1986).

Table 5.

*Burnout Dimensions and Job Satisfaction Predicting Intentions to Quit*

---

	$\beta$	Relative weight (%)
<hr/>		
Burnout		
Exhaustion	.24	36.46
Depersonalization	.10	16.60
Reduced accomplishment	.04	9.80
Job satisfaction	-.25	37.14

---

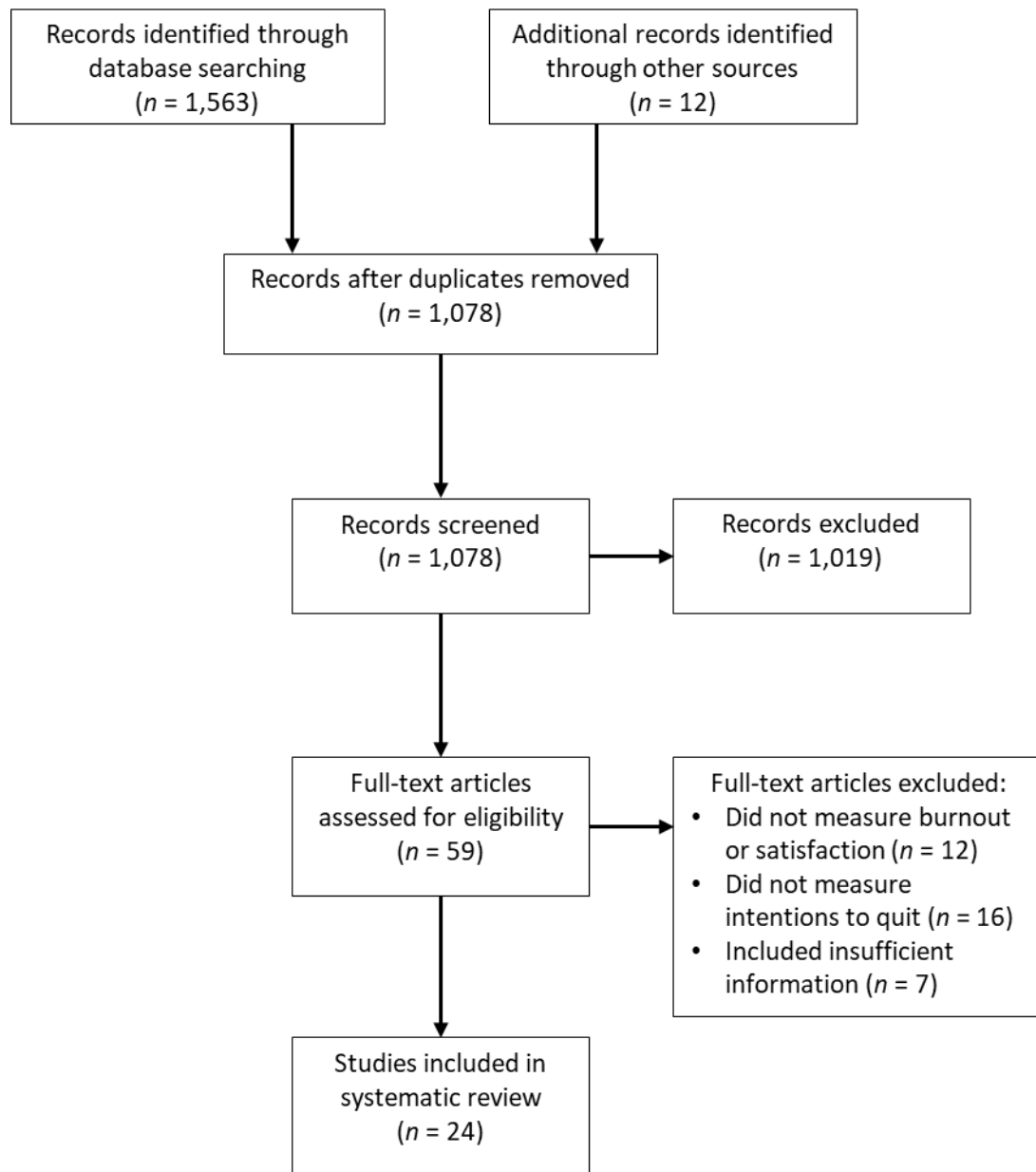


Figure 1. PRISMA diagram outlining the study selection process.

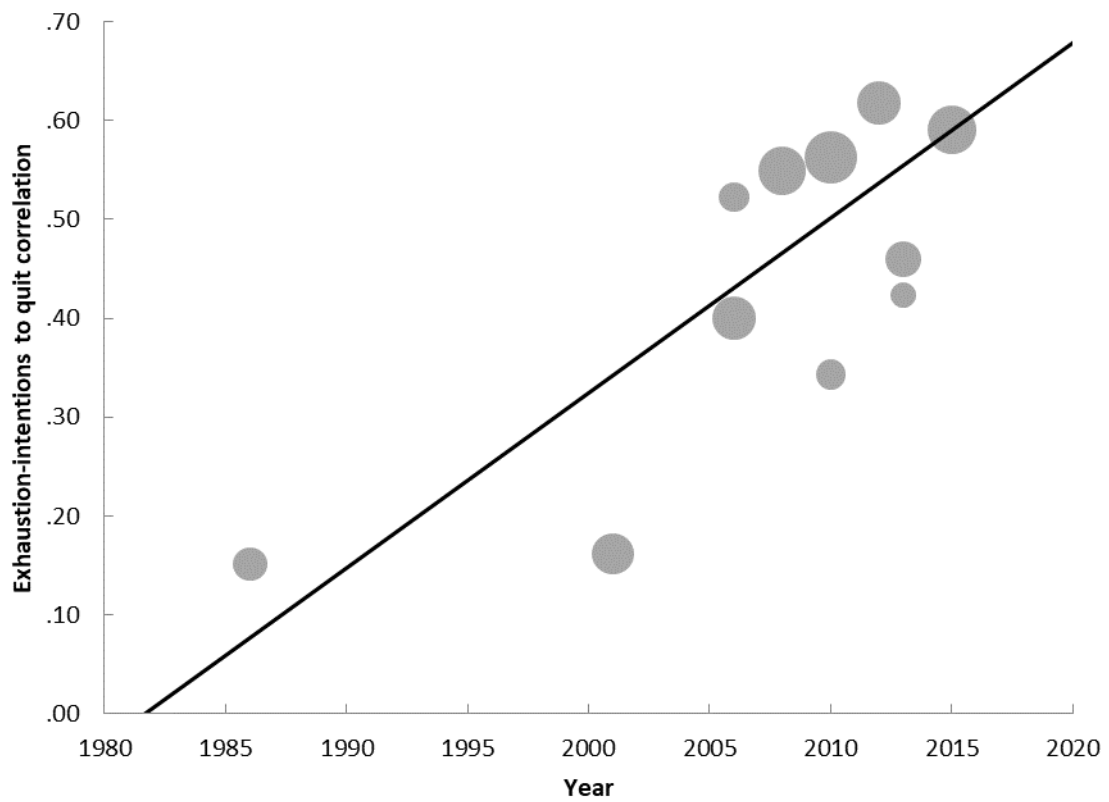
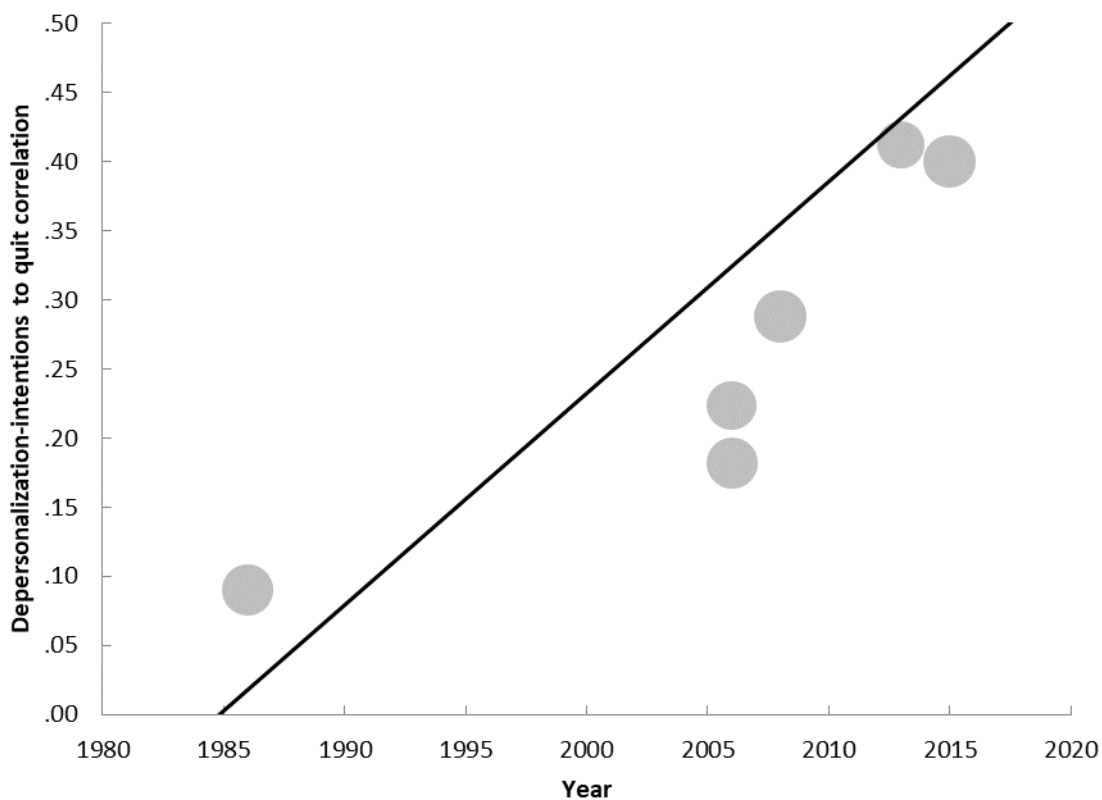


Figure 2. Meta-regression illustrating the moderating role of publication year on the relationship between exhaustion and intentions to quit. *Note.* Grey circles represent studies, with the size illustrating its contribution to the meta-analytic effect.



*Figure 3.* Meta-regression illustrating the moderating role of publication year on the relationship between depersonalization and intentions to quit. *Note.* Grey circles represent studies, with the size illustrating its contribution to the meta-analytic effect.

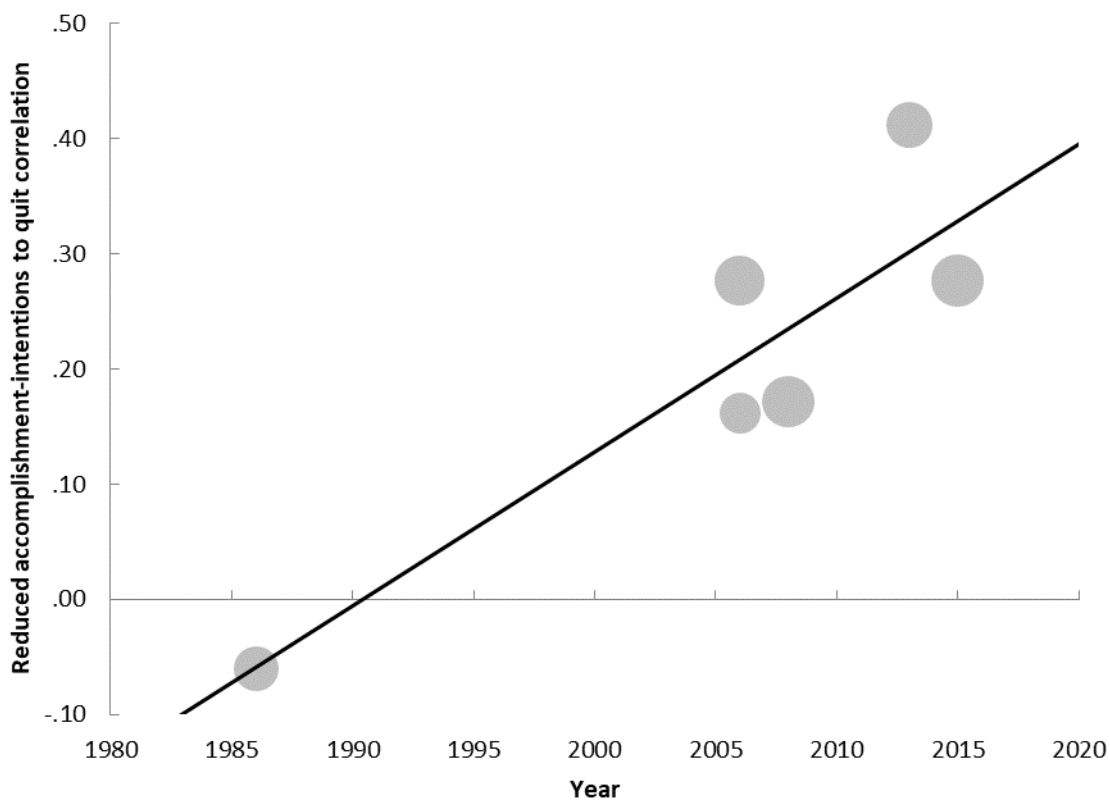


Figure 4. Meta-regression illustrating the moderating role of publication year on the relationship between reduced accomplishment and intentions to quit. Note. Grey circles represent studies, with the size illustrating its contribution to the meta-analytic effect.