META-ANALYSIS

How Strongly Is Personality Associated With Burnout Among Teachers? A Meta-analysis

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Abstract

Teachers' burnout has severe consequences for themselves and their students. The identification of factors related to burnout can provide valuable information about the relevance of interindividual differences. Beyond work-related factors, burnout is assumed to be affected by individuals' personality traits, and several empirical studies already exist that have investigated this association in teachers. However, a comprehensive meta-analytical examination is missing so far. The current meta-analysis, including 18 primary studies with 19 samples (total $N=4{,}724$), aimed to examine the relation between burnout dimensions (emotional exhaustion, depersonalization, and reduced personal accomplishment) and the Big Five personality traits (neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness) in teachers. In addition, moderating effects of teachers' professional level were investigated. In line with our expectations, neuroticism was positively related to all three burnout dimensions, with medium-sized effects found for emotional exhaustion and depersonalization and a small effect size found for reduced personal accomplishment. The other significant associations between personality traits and burnout dimensions were negative. Apart from a nonsignificant association between emotional exhaustion and openness, all associations were rated as small to medium. The moderator analyses did not show any support for moderating effects of teachers' professional level concerning the associations between burnout dimensions and personality traits.

Keyword Burnout · Personality · Teacher · Meta-analysis · Big Five

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Highlights
- The Big Five personality traits were associated with all three burnout dimensions.
- The effect sizes for the associations were small to medium.
- The only nonsignificant association was between emotional exhaustion and openness.
- No support was found for moderating effects of teachers' professional level.

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Introduction

Working as a teacher is regarded to be particularly psychologically demanding, which has been shown to result in a comparably high number of teachers suffering from burnout (Fernet et al., 2012; Kyriacou, 2001; Redín & Erro-Garcés, 2020; Rudow, 1999). Burnout is defined as a psychological syndrome that reflects a prolonged response to chronic emotional and interpersonal stressors on the job and comprises three symptoms: (1) emotional exhaustion, (2) depersonalization, and (3) reduced personal accomplishment (Maslach et al., 2001). Burnout symptoms have been found to occur in roughly 30–40% of the teaching population and have multiple severe consequences (García-Carmona et al., 2019). Burnout has been shown to cause, for example, loss of motivation, reduced work performance, and higher sickness rates among teachers (Maslach, 2003; Maslach & Leiter, 2016; Rudow, 1999; Swider & Zimmerman, 2010). Moreover, the changes in teachers' performance have also been shown to affect students' performance and motivation (Jennings & Greenberg, 2009; Klusmann et al., 2016, 2021; Maslach & Leiter, 1999; Shen et al., 2015). The identification of factors related to burnout can help researchers to find starting points for interventions and can thereby reduce its prevalence and mitigate its negative consequences for teachers and their students.

Theoretical models on the determinants of burnout emphasize the relevance of job-related stressors, such as workload, time pressure, and role conflicts, and they attribute a smaller role to individual factors (Maslach et al., 2001). In contrast, theoretical models on the development of stress state that people react differently to stressors and they thus highlight the role of individual factors, such as personality traits (Lazarus, 1999; see also Lazarus & Folkman, 1984). The present meta-analysis aimed to examine these two contrasting viewpoints through an investigation of the association between personality traits and burnout among teachers. Furthermore, it aimed to investigate study characteristics that help to explain systematic differences in the effect sizes found across studies. Therefore, we investigated teachers' professional level—indicated by the teachers' professional education (university education vs. no university education) and professional experience (years of service)—as this characteristic can be assumed to be a resource that reduces the role that personality traits play in teachers' burnout (Aldrup et al., 2017; Klusmann et al., 2012; Lazarus, 1999).

Burnout

From 2022 onwards, the ICD-11 (World Health Organization, 2019) describes burnout as a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. According to the World Health Organization (2019), burnout is an occupational phenomenon (as opposed to a personal one). In its most popular definition, burnout is characterized by three symptoms (Maslach, 2003; Maslach et al., 2001): first, *emotional exhaustion* is the principal symptom of burnout and pertains to feelings of being emotionally overextended or of lacking

energy. Second, *depersonalization* (or cynicism) is characterized by an increasingly distanced and negative attitude towards others. It can be manifested in various ways, for example, in reduced involvement, low empathy, disliking people, or developing a negative opinion about other people. Third, *reduced personal accomplishment* describes feelings of inefficiency and failure and low confidence in one's own abilities in terms of one's own work. One of the most common questionnaires that is used to measure burnout is the Maslach Burnout Inventory (MBI) (Maslach et al., 1996), which includes three subscales that represent the three symptoms of burnout. Maslach and colleagues have repeatedly stressed that it is essential to consider all three symptoms in order to be able to assess burnout. Other questionnaires cover burnout less comprehensively, focusing mostly on emotional exhaustion (e.g., Oldenburg Burnout Inventory (Demerouti et al., 2003) Copenhagen Burnout Inventory (Kristensen et al., 2005)). However, there is evidence that the dimensions correlate with each other only marginally to moderately and can thus be viewed as being independent of each other (Bakker et al., 2002; Maslach et al., 1996; Yin et al., 2019). Moreover, the three burnout dimensions have been shown to be differentially associated with external criteria, such as job performance (Bakker et al., 2008; Swider & Zimmerman, 2010).

Initially, the focus of burnout research was the occupational sector of human services and education because working intensively with other people had been shown to pose special emotional challenges (Maslach et al., 2001). Today, identifying factors that contribute to the development of burnout among teachers, in particular, is still highly relevant because of the high number of teachers suffering from burnout (García-Carmona et al., 2019). In addition, the severity of consequences of teachers' burnout for performance and well-being—both of the teachers themselves and of their students (Jennings & Greenberg, 2009; Klusmann et al., 2016; Maslach & Leiter, 2016; Shen et al., 2015; Swider & Zimmerman, 2010)—emphasizes the significance of this topic.

Maslach et al. (2001) suggested that burnout results from the prolonged experience of stress at work caused by job-related stressors. Concerning the teaching profession, the most prominent stressors in class have been shown to relate to interactions between teachers and students, which involve tasks concerning student misbehavior, lack of student motivation, or conflicting teacher–student relationships (Hakanen et al., 2006; Klusmann et al., 2008; Kunter et al., 2011). At the same time, several theoretical models emphasize that interindividual differences largely shape reactions to job-related stressors. For instance, Lazarus's transactional model of stress and coping (1999; see also Lazarus & Folkman, 1984) states that stress experience is a result of individuals' appraisals of environmental demands and individuals' resources, which are influenced by personality traits. Similarly, Kyriacou and Sutcliffe (1978) assumed that personality traits influence both the appraisal of potential stressors and the coping mechanisms that are initiated to reduce the perceived threat of stressors. Likewise, according to Hobfoll's conservation of resources theory (1989; 2001), resources such as personal characteristics are essential when coping with stressful situations, and a loss or potential loss of resources causes stress. Even the adapted version of the job demands-resources model recognizes that personal resources influence the extent to which job demands affect exhaustion. To

summarize, theoretical models agree that individual factors, such as personality traits, affect an individual's stress experience through appraisal and coping mechanisms and, thus, in the long run, they can also be expected to affect the experience of burnout.

Personality Traits

Roberts (2009, p. 140) defined personality traits as "relatively enduring patterns of thoughts, feelings, and behaviors that reflect the tendency to respond in certain ways under certain circumstances." Researchers have long been interested in the relevance of personality traits for the teaching profession. On the one hand, the focus has been on the association of personality traits with work performance, such as teachers' quality of instruction (Dodge, 1943; Duckworth et al., 2009; Klassen & Tze, 2014; Roloff et al., 2020). On the other hand, the focus has been on the recruitment and selection of individuals who show favorable entry characteristics (Auguste et al., 2010; Klassen et al., 2014; Roloff Henoch et al., 2015).

The model that is mostly used to describe and specify personality traits is the five-factor model (FFM) of personality (Costa & McCrae, 1995; McCrae, 2011; McCrae & Costa, 2008; McCrae & John, 1992). First, the *neuroticism* dimension (also often inverted and called *emotional stability*) describes differences in emotional robustness as well as emotional sensibility. People who are highly neurotic are more likely to experience, for instance, feelings of anxiety, depression, or hostility in general (McCrae & Costa, 2008; McCrae & John, 1992). Regarding the teaching profession, it can be assumed that these feelings predispose teachers to evaluate typical job-related stressors, such as classroom disruptions, interactions with students, or similar work-related situations, in a negative way, which results in stronger feelings of emotional exhaustion, depersonalization, and reduced personal accomplishment. Second, people with high values in *extraversion* are likely to appear energetic, talkative, dominant, and enthusiastic (Barrick et al., 2001; McCrae & John, 1992). They feel good in crowds of people, and they tend to like excitement and excitation (McCrae & Costa, 2008; McCrae & John, 1992). Teachers high in extraversion may perceive the working environment in school more positively and might activate more social support than teachers who are low in extraversion. Extraverted teachers might thus experience lower levels of emotional exhaustion, depersonalization, and, particularly, reduced personal accomplishment. Third, the dimension of *openness to new experiences* (referred to in the following as openness) measures the extent of one's interest in esthetics, feelings, ideas, values, and actions (McCrae & John, 1992). Teachers who are more open-minded about their environments are more likely to view struggles at work, such as challenging students, as an opportunity for personal growth (Zimmerman, 2008). This may result in lower ratings of the three burnout dimensions. Fourth, *agreeableness* explains attitudes and behavior concerning social relationships, and scoring high in agreeableness is usually associated with altruism, modesty, compliance, and tender-mindedness (Barrick et al., 2001; McCrae & John, 1992). Teachers with high scores in agreeableness are more likely to experience interpersonal relationships with students, colleagues, and parents

positively because of their tendency to feel affection and warmth. As the everyday life of teachers is characterized by a high density of interpersonal relationships, it can be assumed that teachers who score high in agreeableness experience lower levels of emotional exhaustion, depersonalization, and reduced personal accomplishment. Fifth, *conscientiousness* is concerned with organization and planning. People who reach high scores here are more likely to be competent, dutiful, achievement striving, self-disciplined, and reliable and to have a proactive nature (Barrick et al., 2001; McCrae & Costa, 2008; McCrae & John, 1992). Regarding the teaching profession, it can be assumed that teachers with high scores in conscientiousness who are exposed to stressors at work, such as high workload, may actively modify the circumstances of their working environment in order to reduce those stressors (Barrick & Mount, 1991). They can thus be assumed to report low levels of emotional exhaustion, depersonalization, and reduced personal accomplishment. Manifestations in these five dimensions can be measured, for example, with Costa and McCrae's (1992) revised NEO personality inventory (NEO-PI-R) or its short-form, the NEO five-factor inventory (NEO-FFI).

Relation Between Personality Traits and Burnout

Several meta-analyses have already aggregated the findings of empirical studies on the relation between personality traits and burnout across several professions (Alarcon et al., 2009; Swider & Zimmerman, 2010). For their meta-analysis, Alarcon et al. (2009) included studies concerning the relation between personality and burnout in employees. For emotional exhaustion, they reported especially strong relationships with emotional stability (the inversion of neuroticism; average-weighted correlation coefficient corrected for unreliability both in the predictor and the criterion: $\rho = -.50$). Except for a nonsignificant association with openness, all other personality traits were significantly negatively related to emotional exhaustion ($-.26 \leq \rho \leq -.19$). For depersonalization, the strongest relation was also found with emotional stability ($\rho = -.40$). Again, all other personality traits except for openness showed significant negative associations with depersonalization ($-.35 \leq \rho \leq -.26$). The strongest relation with personal accomplishment (the inversion of reduced personal accomplishment) was found for extraversion ($\rho = .36$). All other personality traits also showed significantly positive relations ($.22 \leq \rho \leq .29$) with personal accomplishment.

The meta-analysis of Swider and Zimmerman (2010) investigated research conducted up until 2008 on the relation between personality traits and burnout in employees. Similar to Alarcon et al. (2009), Swider and Zimmerman found the strongest associations between emotional exhaustion and neuroticism ($\rho = .52$). All other personality traits were significantly negatively related to emotional exhaustion ($-.29 \leq \rho \leq -.09$). The strongest association for depersonalization was again found with neuroticism ($\rho = .42$). All other personality traits were significantly negatively associated with depersonalization ($-.31 \leq \rho \leq -.10$). In line with Alarcon et al. (2009), the strongest association for personal accomplishment was

found with extraversion ($\rho = .41$). Neuroticism was negatively related to personal accomplishment ($\rho = -.38$), and the other personality traits were positively related ($.21 \leq \rho \leq .31$).

However, both meta-analyses included several professional groups, and it is unclear whether the conclusions also apply to the teaching profession. We suggest that the teaching profession has specific causes for burnout compared to other professions. Most of these specific causes are related to the social nature of the teaching profession, which involve tasks concerning student misbehavior or discussions with parents. This social nature of the teaching profession might require specific personality traits that are especially important for social interactions, such as low values of neuroticism or high values of extraversion and agreeableness. Teachers with low scores on these personality traits might experience higher levels of burnout, which might result in higher associations between these personality traits and burnout in the teaching profession compared to the associations found in analyses based on multiple professions. Moreover, Alarcon et al. (2009) suggested that personality might be less strongly related to burnout in high-stressor and low-stressor environments compared to medium-stressor environments. They assumed that burnout may be inevitable for all employees in high-stressor environments and that this could result in a lack of variability in burnout scores and, thus, indicate a weak association with personality. Teaching is often described as a stressful work environment with a large number of stressors, such as student misbehavior, workload, and time pressure (Abós et al., 2019; Bottiani et al., 2019; Kyriacou, 2001). Accordingly, weaker relationships between personality and burnout might be assumed, compared to the relationships found in cross-profession meta-analyses.

A first look at the teaching profession was taken in Cramer and Binder's (2015) systematic review of 21 international studies, which included studies with student teachers, lecturers at universities, and in-service teachers from elementary and secondary schools. Using a vote-counting approach, they reported positive relations for teacher neuroticism with burnout, as well as at least partially negative relations for extraversion and agreeableness with burnout (Cramer & Binder, 2015). A second look at the teaching profession was taken in the meta-analysis of Kim et al. (2019) on the effects of teacher personality on teacher effectiveness and burnout. Contrary to their expectations, Kim et al. (2019) did not find any statistically significant associations between the Big Five personality traits and burnout in the seven studies of their meta-analysis. It is important to note that Kim et al. (2019) examined burnout as a one-dimensional construct. However, due to only marginal to moderate associations between the burnout dimensions (Bakker et al., 2002; Maslach et al., 1996; Yin et al., 2019) as well as differential associations with external criteria (Bakker et al., 2008; Swider & Zimmerman, 2010), the three dimensions of burnout should be investigated separately. Differential effects—as were shown in the aforementioned cross-profession meta-analyses of Alarcon et al. (2009) and Swider and Zimmerman (2010)—have yet to be investigated for teachers.

Moreover, it is worth investigating study characteristics that help to explain systematic differences in effect sizes across studies. In this regard, teachers' professional level can be assumed to help teachers in coping with professional demands and to thus serve as a personal resource during the emergence of stress and burnout,

thereby making personality traits less relevant (Klusmann et al., 2012; Lazarus, 1999). In this study, two indicators of teachers' professional level were examined: *type of teachers' professional education*, comparing teachers with a university education to those without a university education, and *professional experience* in terms of years of service. For example, teachers' type of professional education could have buffering effects, which could reduce the strength of the association between personality and burnout. This would be a positive finding with regard to an association between neuroticism and burnout dimensions and, thus, could demonstrate the benefits of a university education for teachers. Furthermore, investigating the buffering or strengthening effects of professional experience might help to identify at what point in teachers' careers additional support may be needed. Does professional experience, for example, strengthen the association between neuroticism and emotional exhaustion and, if so, is it important to intervene specifically at a late point in teachers' careers?

Purpose of the Study and Hypotheses

The high prevalence of burnout among teachers (García-Carmona et al., 2019) and its severe negative consequences for the performance, health, and well-being, both of teachers themselves (Maslach & Leiter, 2016;) and also of their students (Arens & Morin, 2016; Klusmann et al., 2016, 2020; Shen et al., 2015), illustrate the relevance of identifying the antecedents of burnout. Theoretically, personality traits are an important impact factor for the development of burnout (e.g., Hobfoll, 2001; Kyriacou & Sutcliffe, 1978; Lazarus, 1999). The identification of personality traits related to burnout could show the relevance of interindividual differences and might help to identify teachers in need of interventions. Further, it might provide a starting point for the development of appropriate interventions. Previous meta-analyses of multiple professions have already demonstrated differential associations between personality traits in the form of the Big Five and the three burnout dimensions of emotional exhaustion, depersonalization, and reduced personal accomplishment (Alarcon et al., 2009; Swider & Zimmerman, 2010). The first meta-analysis to focus on the association between Big Five personality traits and burnout only among teachers (Kim et al., 2019) investigated burnout as a one-dimensional construct and did not address the three dimensions separately.

Thus, the purpose of this study was to examine the associations between the Big Five personality traits (neuroticism, extraversion, openness, agreeableness, and conscientiousness) and the three dimensions of burnout (emotional exhaustion, depersonalization, and reduced personal accomplishment) in teachers. We expected to find positive associations between the burnout dimensions and neuroticism and negative associations between the burnout dimensions and the other four Big Five personality traits. We expected to find the strongest association between emotional exhaustion and neuroticism as individuals with high values in neuroticism are thought to respond worse to stressors. Additionally, they are more likely to interpret ordinary situations, such as minor frustrations, as appearing hopelessly difficult. Coping with such situations may cost affective effort and thus result in the

experience of emotional exhaustion. Moreover, we expected that depersonalization would be most strongly negatively associated with agreeableness, as agreeable individuals can be described as altruistic and compliant. They are thus less likely to show low empathy for or to dislike people, even in times with chronic emotional and interpersonal stressors on the job. Furthermore, we expected that reduced personal accomplishment would be most strongly negatively associated with extraversion as individuals with low values in extraversion can be assumed to be more modest in evaluating their own performance and to be especially insecure about their effectiveness in social interactions. Additionally, we expected to find an especially strong negative association between reduced personal accomplishment and conscientiousness as conscientious individuals might be better able to meet even high demands due to their good time management and they might thus feel less inefficient.

Finally, we aimed to extend knowledge on the relation between burnout and personality traits by investigating moderating effects of teachers' professional education and professional experience as distal indicators of teachers' professional level. These analyses were exploratory as both buffering and strengthening effects of the moderators are conceivable. As student teachers are exposed to the potential stressors of the teaching profession only during internships, we focused exclusively on in-service teachers, who are exposed to the demands of the teaching profession on a daily basis.

Method

This meta-analysis was conducted and reported in accordance with the PRISMA 2009 Checklist (Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)), which aims to improve the reporting of meta-analyses and systematic reviews (Moher et al., 2009).

Selection of Studies

The search started in 2021, and in order to include primary studies as exhaustively as possible, various search terms were used. We conducted our main search in PsycInfo and Web of Science. Moreover, in order to identify potentially relevant studies, we used a backward search based on the following previous meta-analyses: Alarcon et al. (2009); Cramer and Binder (2015); Kim et al. (2019); and Swider and Zimmerman (2010). There were no restrictions to the publication dates of the studies. The titles, abstracts, and keywords of different primary studies were searched. In the process, both more general search terms such as "teacher," "burnout," or "personality" and more specific search terms such as "Big Five," "emotional exhaustion," or "neuroticism" were used (see Table S1 in the online supplement). In order to mitigate publication bias, which is a central problem when conducting meta-analyses (Card & Casper, 2013), the search explicitly addressed "gray literature" through a backward search. The results of the search are displayed in Fig. 1. The number of records identified through electronic database searching was 674 in total. These
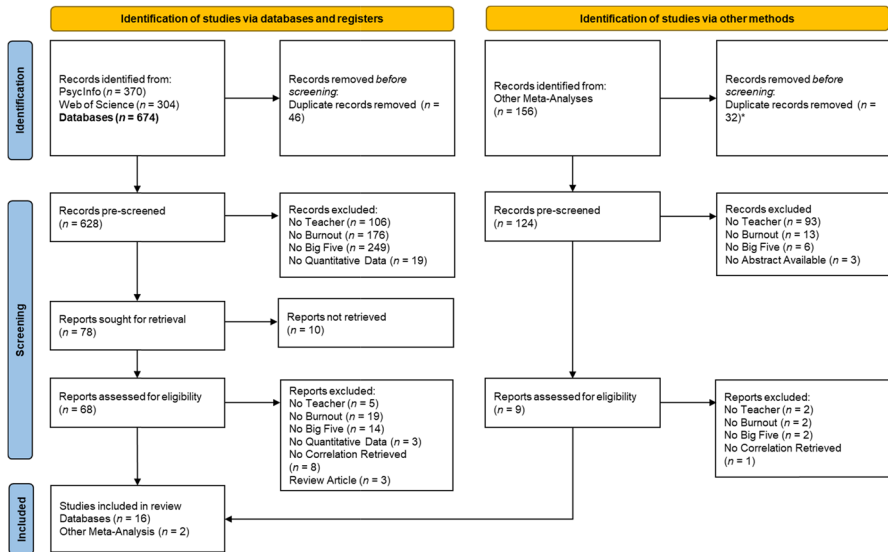
Fig. 1 PRISMA flowchart showing the inclusion and exclusion process of the literature search. Note. *=duplicates within this search and compared to the search via databases and registers

studies were published or completed between 1973 and 2021. One hundred fifty-six additional records were identified from other meta-analyses. Seven hundred fifty-two records remained after the duplicates were removed.

Following the literature search, the available studies were screened on the basis of their abstracts (Cooper, 2010). The primary inclusion criteria were the following: first, the sample had to consist exclusively of K-12 teachers who were not enrolled in university education at the time of the data collection; second, burnout in the form of at least one of its three dimensions—emotional exhaustion, depersonalization, and (reduced) personal accomplishment—had to be measured (Maslach et al., 2001); third, personality traits had to be measured with instruments that were designed to assess personality traits based on the Five-Factor model; and fourth, quantitative data had to be reported. Measurement instruments for the burnout dimensions and the Big Five were examined for their conceptual similarity to the investigated constructs in order to ensure the sufficient homogeneity of the studies (Borenstein et al., 2009). A screening based on the abstracts resulted in the exclusion of 665 studies. The remaining 87 studies were sought for retrieval. However, 10 full texts could not be retrieved. Regarding effect sizes, this study was limited to correlations, as these represent a neutral measure for describing the relationship between two variables (Cooper, 2010). For studies that reported this information only indirectly (e.g., in the form of β coefficients), the authors were contacted to obtain the correlations.

The full texts of the remaining 77 studies were screened, and 40 of them were excluded due to the inclusion criteria described above. Additionally, 14 studies were excluded because no correlations were available. Furthermore, three studies were excluded because they were reviews. Eighteen studies were included in the

quantitative meta-analysis. These studies were published or completed between 2006 and 2020. Four of them were unpublished doctoral dissertations. Out of the 18 studies included in the current meta-analysis, eight were also included in the systematic review of Cramer and Binder (2015), and two were also included in the meta-analysis of Kim et al. (2019).

Coding of Studies

We summarized the remaining studies by extracting the following information: article information (authors and year published); sample size; country in which the study took place; teachers' age; percentage of the teachers who were female; educational stage (kindergarten through fifth grade vs. sixth grade through 13th grade); teachers' professional education (university vs. other); teachers' professional experience (years); and bivariate correlations between burnout dimensions and personality traits.

To increase the validity of the assessment, all selected studies were independently coded by two evaluators (student assistants who participated in coding training approximately 5 h in advance), using a coding manual. Subsequently, the first and second codings were compared, and inconsistencies were discussed and clarified by the two coders, if necessary. Table 1 provides a detailed overview of the primary studies in terms of study and sample characteristics and extracted correlation coefficients.

Meta-analytic Procedure

Random-effects meta-analyses were conducted with the package "metafor" (Viechtbauer, 2010) in R version 3.6.3 (R Core Team, 2020). For studies with a longitudinal design including an intervention that could have had an influence on the expression of burnout symptoms, only the effect sizes of the premeasurement were included. For longitudinal studies without an intervention, the effect sizes of the latest measurement were included. As the effect sizes from the sample of one study (Poraj, 2009) could only be extracted separately for men and women, the results were pooled for the two subsamples using the method of Dunlap (1937) before calculating the overall effects. The study of Fabbro et al. (2020) included both an intervention and a control group; however, only the effect sizes of the control group were included as a pooling of both groups was not possible due to missing information on the means and standard deviations for burnout dimensions. The publication of Castillo-Gualda et al. (2019) included two independent studies that were based on different samples. These were treated as independent, and, thus, 19 samples yielding 256 effect sizes were included in the analysis.

The meta-analyses were conducted in accordance with the recommendations for a bare-bones meta-analysis in Hunter and Schmidt (2004). To this end, we analyzed the untransformed correlations, weighted the studies by their sample size, and computed the sampling variances as outlined by Hunter and Schmidt (2004; see also Field & Gillett, 2010). Although the meta-analyses of correlations can also be conducted by using Fisher's *r*-to-*z* transformation (Borenstein et al., 2009),

Table 1 Results of studies examining the relationship between burnout dimensions and personality traits

Authors (date)	Country	Mean age	% of female teachers	Mean years of service	Personality measure	Burnout measure	Burnout dimension	Big Five dimension	N	Correlation
Castillo-Gualda et al. (2019) Study 1	Spain	44.32	65.4	18.3	BFI	MBI-ES	EE	N	237	.43
								E	237	−.23
								O	237	−.05
								A	237	−.31
								C	237	−.20
							DP	N	237	.23
								E	237	−.16
								O	237	−.23
								A	237	−.43
								C	237	−.35
							PA	N	237	−.25[b]
								E	237	.32[b]
								O	237	.44[b]
								A	237	.51[b]
								C	237	.38[b]
Castillo-Gualda et al. (2019) Study 2	Spain	41.12	66.1	12.4	BFI	MBI-ES	EE	N	59	.34
								E	59	.11
								O	59	−.03
								A	59	−.24
								C	59	−.19
							DP	N	59	.28
								E	59	.03
								O	59	−.18
								A	59	.39

Table 1 (continued)

Authors (date)	Country	Mean age	% of female teachers	Mean years of service	Personality measure	Burnout measure	Burnout dimension	Big Five dimension	N	Correlation
							PA	C	59	.13
								N	59	−.40[b]
								E	59	.29[b]
								O	59	.20[b]
								A	59	.36[b]
								C	59	.21[b]
Colomeischi (2015)	Romania	38.00	65.2	15.00	FFPI	TBS	EE	ES	575	−.37[a]
								E	575	−.27
								A	575	−.23
								C	575	−.34
							DP	ES	575	−.23[a]
								E	575	−.22
								A	575	−.28
								C	575	−.25
							rPA	ES	575	−.51[a]
								E	575	−.45
								A	575	−.32
								C	575	−.38
Enwereuzor et al. (2017)	Nigeria	–	85.0	8.04	Mini-IPIP	MBI	EE	A	200	−.07
								C	200	−.15
D'Alessandro (2006)	USA	–	85.7	–	NEO-FFI	MBI-ES	EE	N	63	.45
								E	63	−.18
								O	63	.04
								A	63	−.21
								C	63	−.15

Table 1 (continued)

Authors (date)	Country	Mean age	% of female teachers	Mean years of service	Personality measure	Burnout measure	Burnout dimension	Big Five dimension	N	Correlation
							DP	N	63	.30
								E	63	–.13
								O	63	.09
								A	63	–.34
								C	63	–.31
							rPA	N	63	.50
								E	63	–.40
								O	63	.22
								A	63	–.32
								C	63	–.29
Fabbro et al. (2020)	Italy	50.15	100	–	BFI	MBI-ES	EE	N	20	.57
								E	20	–.37
								O	20	.09
								A	20	.25
								C	20	–.14
							DP	N	20	.28
								E	20	–.63
								O	20	–.30
								A	20	–.10
								C	20	–.49
							PA	N	20	–.45[b]
								E	20	.73[b]
								O	20	.51[b]
								A	20	–.01[b]
								C	20	.53[b]

Table 1 (continued)

Authors (date)	Country	Mean age	% of female teachers	Mean years of service	Personality measure	Burnout measure	Burnout dimension	Big Five dimension	N	Correlation
Foley and Murphy (2015)	Ireland	39.61	60.9	15.05	BFI	MBI-ES	EE	N	192	.50
								E	192	–.34
								O	192	.06
								A	192	–.10
								C	192	–.06
							DP	N	192	.25
								E	192	–.36
								O	192	.04
								A	192	–.23
								C	192	–.26
							PA	N	192	–.23[b]
								E	192	.40[b]
								O	192	.24[b]
								A	192	.30[b]
								C	192	.25[b]
Fuiks (2008)	USA	41.15	90.0	12.98	NEO-PI-R	MBI-ES	EE	N	240	.39
								E	240	–.19
								O	218	.06
								A	218	–.14
								C	218	–.15
							DP	N	240	.30
								E	240	–.23
								O	218	–.07
								A	218	–.25
								C	218	–.18

Table 1 (continued)

Authors (date)	Country	Mean age	% of female teachers	Mean years of service	Personality measure	Burnout measure	Burnout dimension	Big Five dimension	N	Correlation
							PA	N	240	−.34[b]
								E	240	.33[b]
								O	218	.24[b]
								A	218	.24[b]
								C	218	.17[b]
Hu (2017)	China	30.88	99.3	7.02	NEO-FFI	MBI-ES	EE	N	140	.57
								E	140	−.34
								O	140	.04
								A	140	−.40
								C	140	−.36
							DP	N	140	.50
								E	140	−.38
								O	140	−.21
								A	140	−.63
								C	140	−.44
							PA	N	140	−.39[b]
								E	140	.32[b]
								O	140	.22[b]
								A	140	.22[b]
								C	140	.32[b]
Jensen (2007)	USA	–	71.9	–	NEO-PI-R	MBI-ES	EE	N	57	.63
								E	57	−.35
								O	57	−.03
								A	57	−.23
								C	57	−.19

Table 1 (continued)

Authors (date)	Country	Mean age	% of female teachers	Mean years of service	Personality measure	Burnout measure	Burnout dimension	Big Five dimension	N	Correlation
							DP	N	57	.55
								E	57	–.35
								O	57	–.01
								A	57	–.28
								C	57	–.19
							PA	N	57	–.42[b]
								E	57	.18[b]
								O	57	–.03[b]
								A	57	.18[b]
								C	57	.05[b]
Jin et al. (2015)	Korea	36.81	23.8	10.00	Mini-markers	MBI-ES	EE	ES	345	–.35[a]
								E	345	–.27
								O	345	.08
								A	345	–.10
								C	345	–.19
							DP	ES	345	–.24[a]
								E	345	–.24
								O	345	.02
								A	345	–.24
								C	345	–.18
							rPA	ES	345	–.17[a]
								E	345	–.31
								O	345	–.32
								A	345	–.34
								C	345	–.26

Table 1 (continued)

Authors (date)	Country	Mean age	% of female teachers	Mean years of service	Personality measure	Burnout measure	Burnout dimension	Big Five dimension	N	Correlation
Klusmann et al. (2012)	Germany	27.50	66.4	–	NEO-FFI	MBI	EE	N	551	.45
								E	551	–.18
								O	551	.10
								A	551	–.07
								C	551	–.24
Kokkinos (2007)	Cyprus	33.84	79.3	11.96	NEO-FFI	MBI-ES	EE	N	447	.50
								E	447	–.23
								O	447	.06
								C	447	.13
							DP	N	447	.29
								E	447	–.22
								O	447	–.16
								C	447	–.30
							PA	N	447	–.26[b]
								E	447	.33[b]
								O	447	.15[b]
								C	447	.37[b]
Poraj (2009)	Poland	41.00	80.0	13.39	NEO-FFI	MBI	EE – female sub-sample	N	312	.47
								E	312	–.33
								O	312	–.20
								A	312	–.15
								C	312	–.16
							DP – female sub-sample	N	312	.42
								E	312	–.32
								O	312	–.14

Table 1 (continued)

Authors (date)	Country	Mean age	% of female teachers	Mean years of service	Personality measure	Burnout measure	Burnout dimension	Big Five dimension	N	Correlation
							PA – female sub-sample	A	312	–.20
								C	312	–.09
								N	312	–.37[b]
								E	312	.37[b]
								O	312	.12[b]
								A	312	.07[b]
								C	312	.31[b]
							EE – male sub-sample	N	78	.37
								E	78	–.20
								O	78	–.08
								A	78	–.02
								C	78	–.24
							DP – male sub-sample	N	78	.31
								E	78	–.23
								O	78	.01
								A	78	–.27
								C	78	–.31
							PA – male sub-sample	N	78	–.36[b]
								E	78	.33[b]
								O	78	.21[b]
								A	78	–.01[b]
								C	78	.35[b]
Tasic et al. (2020)	Serbia	38.00	100.0	11.00	Big Five Plus Two	MBI-GS	EE	N	302	.42
								E	302	–.28
								O	302	–.27

Table 1 (continued)

Authors (date)	Country	Mean age	% of female teachers	Mean years of service	Personality measure	Burnout measure	Burnout dimension	Big Five dimension	N	Correlation
							DP	C	302	-.30
								N	302	.29
								E	302	-.20
								O	302	-.17
								C	302	-.25
							PA	N	302	-.21[b]
								E	302	.27[b]
								O	302	.27[b]
								C	302	.28[b]
Tönjes et al. (2008)	Germany	45.20	61.0	18.50	NEO-FFI	MBI	EE	N	84	.66
								E	84	-.40
								O	84	.07
								A	84	-.28
								C	84	-.02
							DP	N	84	.39
								E	84	-.55
								O	84	-.15
								A	84	-.54
								C	84	-.18
							rPA	N	84	.23
								E	84	-.35
								O	84	-.03
								A	84	-.45
								C	84	-.21
Unaldi et al. (2013)	Turkey	–	73.7	–	NEO-FFI	MBI	EE	N	224	.19

Table 1 (continued)

Authors (date)	Country	Mean age	% of female teachers	Mean years of service	Personality measure	Burnout measure	Burnout dimension	Big Five dimension	N	Correlation
								E	224	–.31
								O	224	–.01
								A	224	–.12
								C	224	–.20
							DP	N	224	.24
								E	224	–.32
								O	224	–.19
								A	224	–.27
								C	224	–.40
							PA	N	224	–.20[b]
								E	224	.45[b]
								O	224	.42[b]
								A	224	.50[b]
								C	224	.44[b]
Tatalović et al. (2013)	Croatia	37.35	98.6	14.39	BFI	MBI-HSS	EE	N	295	.43
								E	295	–.26
								O	295	–.08
								A	295	–.14
								C	295	–.09
							DP	N	295	.19
								E	295	–.18
								O	295	–.08
								A	295	–.20
								C	295	–.20
							rPA	N	295	.38

Table 1 (continued)

Authors (date)	Country	Mean age	% of female teachers	Mean years of service	Personality measure	Burnout measure	Burnout dimension	Big Five dimension	N	Correlation
								E	295	–34
								O	295	–41
								A	295	–28
								C	295	–26
Yilmaz (2014)	Turkey	–	53.5	–	FFP-Scale	MBI	EE	ES	303	–41[a]
								E	303	–14
								O	303	–04
								A	303	–17
								C	303	–18
							DP	ES	303	–42[a]
								E	303	–17
								O	303	–15
								A	303	–25
								C	303	–33
							rPA	ES	303	–20[a]
								E	303	–28
								O	303	–45
								A	303	–38
								C	303	–37

Note. [a]Inverted in the analyses due to our use of neuroticism instead of emotional stability; [b]inverted in the analyses due to our use of reduced personal accomplishment instead of personal accomplishment; *EE*, emotional exhaustion; *DP*, depersonalization; *rPA*, reduced personal accomplishment; *PA*, personal accomplishment; *ES*, emotional stability; *N*, neuroticism; *E*, extraversion; *O*, openness to experience; *A*, agreeableness; *C*, conscientiousness; *FFPI*, Five-Factor Personality Inventory; *NEO-FFI*, NEO Five-Factor Inventory; *NEO-PI-R*, revised NEO personality inventory; *BFI*, Big Five Inventory; *BFI-S*, Big Five Inventory—short version; *EPI*, Eysenck's Personality Inventory; *MBI*, Maslach Burnout Inventory; *MBI-ES*, Maslach Burnout Inventory – Educators Survey; *Mini-IPIP*, 20-item Mini-International Personality Item Pool; *OCB-Scale*, Organizational Citizenship Behavior Scale; *TBS*, The Teacher Burnout Scale; *FFP-Scale*, the Five-Factor personality scale

methodological studies have recommended the use of raw values because they can provide more accurate estimates of the population effect size (Field, 2001, 2005). Fifteen overall effects were calculated (three burnout dimensions × five personality traits).

In comparison with fixed-effects meta-analyses, random-effects meta-analyses better reflect the fact that the true effect sizes underlying the studies can differ both unsystematically and as a result of differences in the study-level characteristics. To assess this heterogeneity, we estimated the between-study variance (τ^2) with the "HS" estimator in "metafor" (Viechtbauer, 2010). In addition, we used the Q test of heterogeneity (Q_H) to assess statistical significance and computed the I^2 statistic, which denotes the proportion of the total variation in the effect sizes that is due to the variation in the true effect sizes between studies (Borenstein et al., 2009; Higgins et al., 2003).

Next, we conducted meta-regressions to check for possible moderators of between-study differences. To test for moderation effects, we used the Q test of moderation (Q_M). A significant result of this test indicates a significant regression coefficient for continuous moderators and a significant difference between the subgroups of categorical moderators.

Finally, publication bias was investigated. First, for each of the 15 meta-analyses (three burnout dimensions × five personality traits), a funnel plot was investigated, where an asymmetric distribution of effect sizes is sometimes used as a visual indicator of publication bias (Borenstein et al., 2009; Cooper, 2010; Rothstein et al., 2005). Second, the two-tailed Egger's regression test for funnel plot asymmetry was conducted, according to which significant results indicate publication bias (Egger et al., 1997; Rothstein et al., 2005). Third, the precision-effect test (PET; Stanley & Doucouliagos, 2014) was conducted to adjust the meta-analytic effect sizes for small-study effects. The intercept of the PET represents the expected effect size when the standard error is zero and, thus, is an estimate of the "true" effect size that has been adjusted for publication bias and other small-study effects (Carter et al., 2019).

Results

Descriptive Statistics

The included studies were published journal articles and unpublished dissertations completed between 2006 and 2020. The total sample size was $N = 4,724$ teachers. The sample sizes of the samples included ranged from 20 to 575 with a mean sample size of 248.60 and a standard deviation of 163.17. The majority of studies were conducted in Europe ($n = 10$), followed by Asia ($n = 4$) and the USA ($n = 3$), and one was conducted in Africa. In terms of the educational stage, six studies included exclusively kindergarten through fifth grade teachers, one study included secondary school teachers, and the other 11 studies included mixed educational levels or information about the educational level was missing. Concerning the teachers' professional education ($n = 10$ missing values), only two studies included exclusively

teachers with a university degree, and six studies included teachers with and without a university degree. No study included only teachers without a university degree. The mean of the teachers' professional experience in terms of years of service across all samples was 12.92 ($SD = 3.46$).
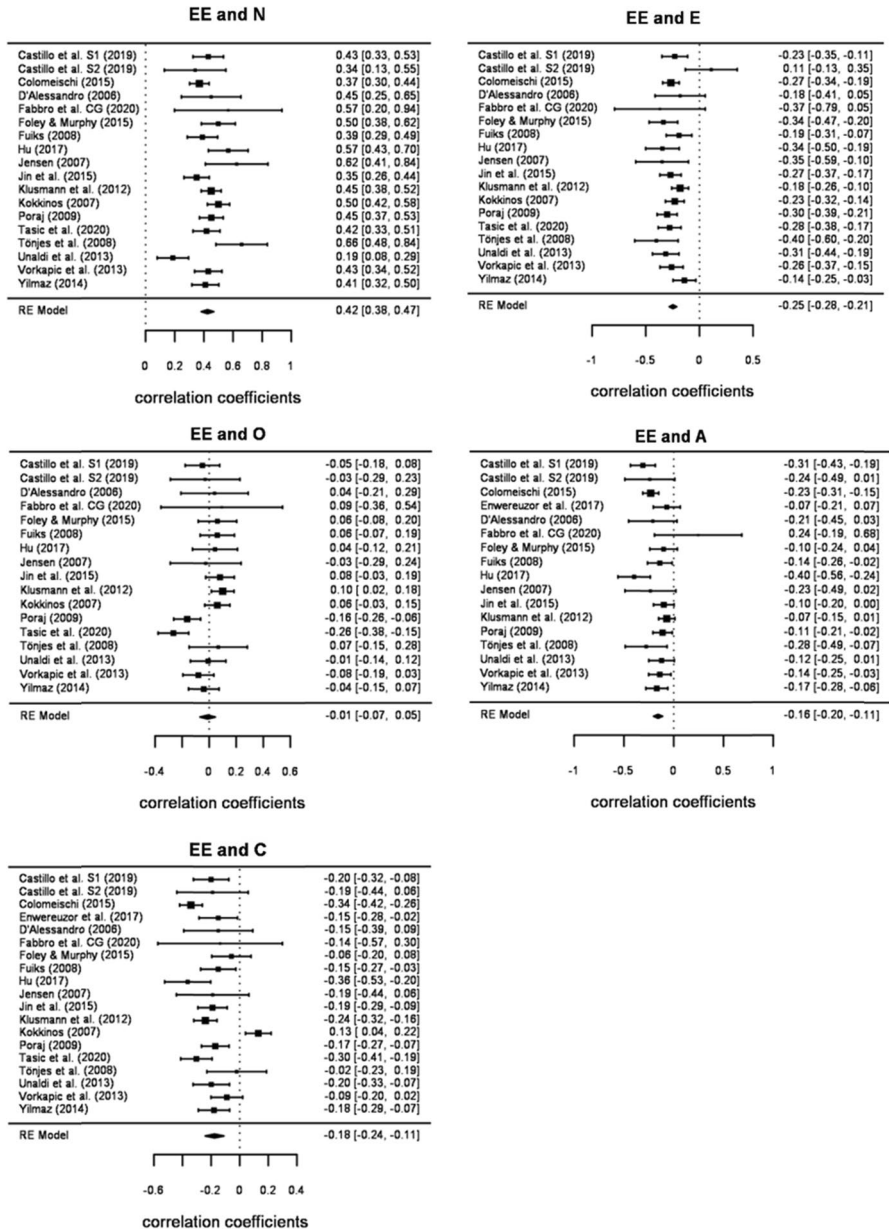
Burnout and Personality Traits

The results of the 15 meta-analyses (five personality traits × three burnout dimensions) are presented in Table 2 (for a graphical display of the results, see the forest plots in Fig. 2 for emotional exhaustion, Fig. 3 for depersonalization, and Fig. 4 for reduced personal accomplishment).

Regarding the relation between *emotional exhaustion* and the Big Five personality traits, in line with our hypothesis, the greatest effect size was found for neuroticism ($\hat{\rho} = .42$, $p < .001$, 95% CI [.38, .47]), which can be considered a medium effect size according to Cohen's (1988) classification of overall sizes of correlations. Moreover, significant but small effect sizes were found for extraversion ($\hat{\rho} = -.25$, $p < .001$, 95% CI [−.28, −.21]), conscientiousness ($\hat{\rho} = -.18$, $p < .001$, 95% CI [−.24, −.11]), and agreeableness ($\hat{\rho} = -.16$, $p < .001$, 95% CI [−.20, −.11]). In line with our expectations, the association with neuroticism was positive, and the associations with extraversion, conscientiousness, and agreeableness were negative. Contrary to

Table 2 Correlations between burnout dimensions and Big Five personality traits

Relation	k	$\hat{\rho}$	SE	95% CI of $\hat{\rho}$		p	Heterogeneity			
				Lower	Upper		Q_H	p_H	τ^2	I^2 (%)
Emotional exhaustion										
Neuroticism	18	.42	.02	.38	.47	<.001	46.65	<.001	0.004	60.81
Extraversion	18	−.25	.02	−.28	−.21	<.001	26.20	.071	0.002	30.76
Openness	17	−.01	.03	−.07	.05	.700	45.82	<.001	0.007	62.30
Agreeableness	17	−.16	.02	−.20	−.11	<.001	32.11	.010	0.004	46.32
Conscientiousness	19	−.18	.03	−.24	−.11	<.001	81.96	<.001	0.013	76.40
Depersonalization										
Neuroticism	17	.29	.02	.25	.34	<.001	32.26	.009	0.003	46.65
Extraversion	17	−.24	.02	−.29	−.20	<.001	33.34	.010	0.004	48.35
Openness	16	−.11	.02	−.16	−.07	<.001	24.26	.061	0.002	33.50
Agreeableness	15	−.29	.03	−.35	−.23	<.001	41.21	<.001	0.007	62.80
Conscientiousness	17	−.26	.02	−.30	−.21	<.001	29.79	.019	0.003	42.29
Reduced personal accomplishment										
Neuroticism	17	.31	.03	.25	.37	<.001	62.53	<.001	0.009	72.29
Extraversion	17	−.35	.02	−.38	−.32	<.001	22.35	.132	0.001	23.45
Openness	16	−.27	.04	−.35	−.19	<.001	79.37	<.001	0.016	79.45
Agreeableness	15	−.31	.04	−.38	−.23	<.001	63.90	<.001	0.013	75.90
Conscientiousness	17	−.32	.02	−.36	−.28	<.001	28.63	.027	0.002	39.99

Note. k, number of effect sizes (correlations); $\hat{\rho}$, estimate of the population effect size; *95% CI*, 95% confidence interval with lower and upper limit
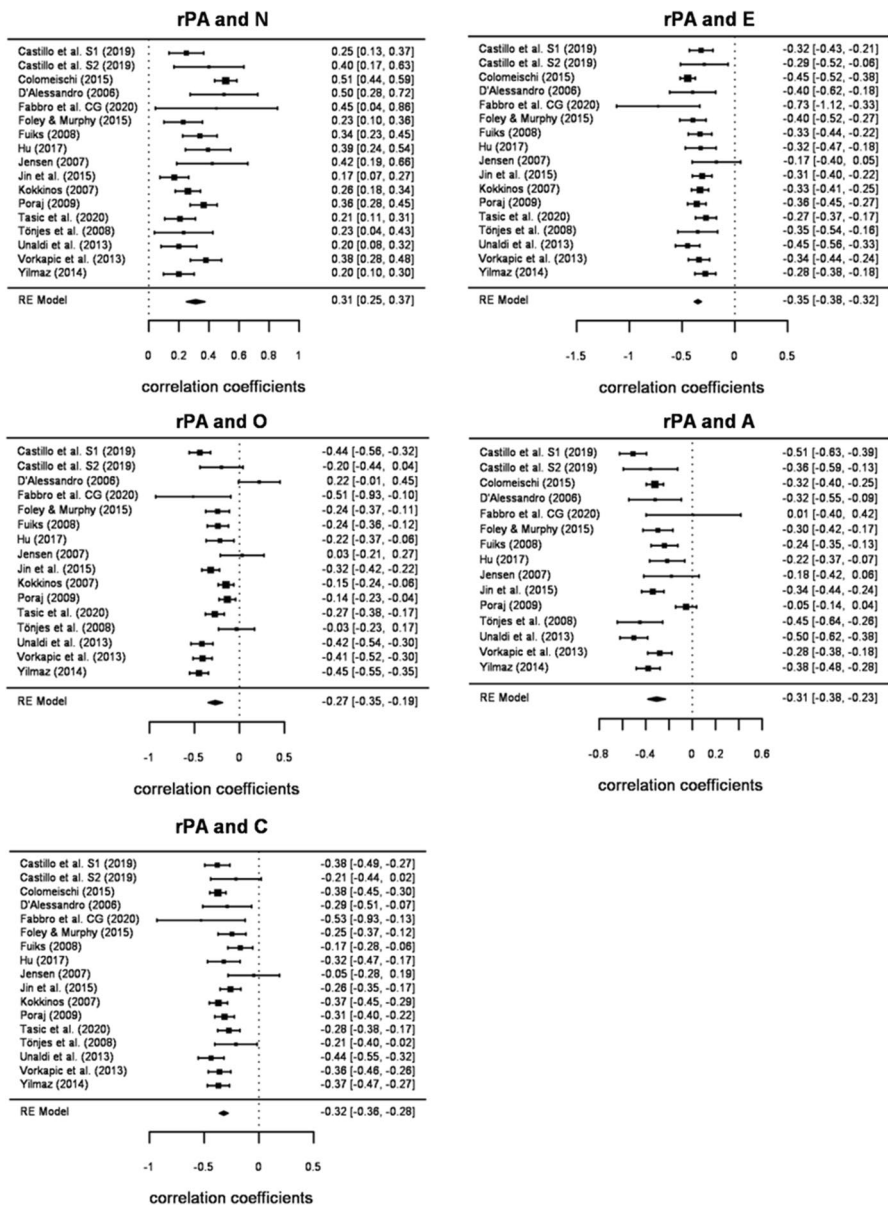
Fig. 2 Forest plots for emotional exhaustion and personality traits. Note: EE, emotional exhaustion; N, neuroticism; E, extraversion; O, openness to experience; A, agreeableness; C, conscientiousness; S1, study 1; S2, study 2; CG, control group; x-axis, correlation coefficient; y-axis, authors and publication years

our expectations, openness was not significantly related to emotional exhaustion ($\hat{\rho}$ = −.01, p = .700, 95% CI [−.07, .05]).
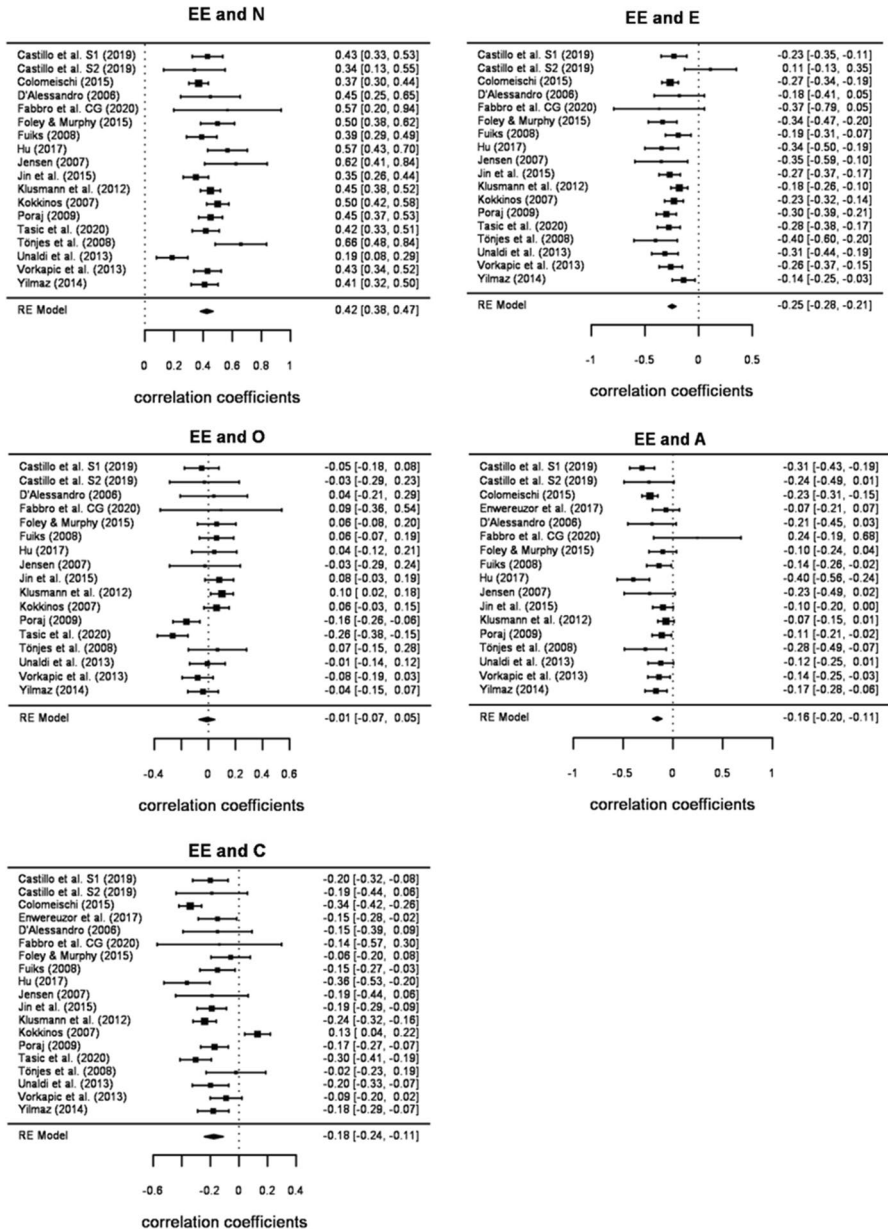
Fig. 3 Forest plots for depersonalization and personality traits. Note: DP, depersonalization; N, neuroticism; E, extraversion; O, openness to experience; A, agreeableness; C, conscientiousness; S1, study 1; S2, study 2; CG, control group; *x*-axis, correlation coefficient; *y*-axis, authors and publication years

Concerning the association between *depersonalization* and the Big Five personality traits, the greatest effect sizes were found for neuroticism ($\hat{\rho} = .29$, $p < .001$, 95% CI [.25, .34]) and agreeableness ($\hat{\rho} = -.29$, $p < .001$, 95% CI [−.35, −.23]), reflecting

Fig. 4 Forest plots for reduced personal accomplishment and personality traits. Note: rPA, reduced personal accomplishment; N, neuroticism; E, extraversion; O, openness to experience; A, agreeableness; C, conscientiousness; S1, study 1; S2, study 2; CG, control group; x-axis, correlation coefficient; y-axis, authors and publication years

nearly medium-sized associations. Significant small effect sizes were found for conscientiousness ($\hat{\rho} = -.26$, $p < .001$, 95% CI [$-.30$, $-.21$]), extraversion ($\hat{\rho} = -.24$,

$p < .001$, 95% CI [–.29, –.20]), and openness ($\hat{\rho} = -.11$, $p < .001$, 95% CI [–.16, –.07]). The directions of the relations were all in line with our expectations.

Furthermore, regarding the association between *reduced personal accomplishment* and the Big Five personality traits, the greatest effect size was found for extraversion ($\hat{\rho} = -.35$, $p < .001$, 95% CI [–.38, –.32]), reflecting a medium-sized association, followed by medium-sized associations for conscientiousness ($\hat{\rho} = -.32$, $p < .001$, 95% CI [–.36, –.28]), agreeableness ($\hat{\rho} = -.31$, $p < .001$, 95% CI [–.38, –.23]), and neuroticism ($\hat{\rho} = .31$, $p < .001$, 95% CI [.25, .37]). Additionally, openness ($\hat{\rho} = -.27$, $p < .001$, 95% CI [–.35, –.19]) was significantly associated with reduced personal accomplishment, with a nearly medium effect size. Again, the directions of the associations were all in line with our expectations.

To investigate heterogeneity, we used the Q test and the I^2 statistic. Twelve out of the 15 Q tests yielded significant results (Borenstein et al., 2009; Higgins et al., 2003). According to Deeks et al.'s (2021) classification, one of the I^2 values indicated low heterogeneity (<30%), seven values indicated moderate heterogeneity (30% to 50%), four values indicated substantial heterogeneity (50% to 75%), and three values indicated considerable heterogeneity (>75%). Moreover, the between-study variances (τ^2) ranged between .001 and .016. Thus, the effect sizes can be regarded as heterogeneous for at least half of the analyses.

Professional Education and Professional Experience as Moderators

Our aim was to investigate whether the type of professional education played a moderating role by comparing studies of teachers with a university education to those of teachers without a university education. However, in our sample of studies, no study included only teachers without a university education. We thus decided to refrain from this analysis due to the insufficient data basis.

The results of the moderating effect of teachers' professional experience are presented in Table 3. The meta-regression did not show any significant moderation effects of professional experience. To summarize, we did not find any evidence to support the hypothesis that professional experience attenuates or intensifies the role of personality in burnout.

Publication Bias

First, funnel plots were investigated to provide a visual assessment of publication bias (see Figure S1 in the online supplement). Most of the 15 funnel plots showed signs of asymmetry, which indicates a potential bias. Second, the results of the two-tailed Egger's regression test are shown in Table 4. However, none of the 15 analyses showed significant results, with p values ranging between .122 and .981. Third, the correlations that were adjusted for small-study effects through PET are also displayed in Table 4. The results showed that 13 of the 14 relations that were statistically significant in our random-effects meta-analyses were also significant after adjusting for small-study effects. The only exception was a marginally significant association between openness and depersonalization ($p = .055$). However, the size of

Table 3 Results of the moderator analyses for professional experience (years of service)

Relation	k	Q_M	$\hat{\beta}$	95% CI of $\hat{\beta}$		p	z	τ^2	I^2 (%)
				Lower	Upper				
Emotional exhaustion									
Neuroticism	12	0.00	.00	−.01	.02	.953	0.06	.002	47. 25
Extraversion	12	0.00	.00	−.01	.01	.977	−0.03	.001	25.49
Openness	11	0.06	.00	−.03	.02	.807	−0.24	.010	70.00
Agreeableness	11	1.09	−.01	−.02	.01	.296	−1.05	.003	45.88
Conscientiousness	13	0.00	.00	−.03	.03	.965	0.04	.018	83.28
Depersonalization									
Neuroticism	12	2.39	−.01	−.03	.00	.122	−1.55	.001	30.28
Extraversion	12	0.00	.00	−.02	.02	.945	0.07	.004	51.86
Openness	11	0.25	.00	−.02	.01	.617	−0.50	.003	39.05
Agreeableness	10	0.02	.00	−.02	.03	.876	0.16	.010	74.08
Conscientiousness	12	0.05	.00	−.01	.02	.829	0.22	.002	38.55
Reduced personal accomplishment									
Neuroticism	12	1.11	.01	−.01	.03	.293	1.05	.008	73.49
Extraversion	12	2.57	−.01	−.02	.00	.109	−1.60	.000	0.00
Openness	11	0.58	−.01	−.03	.01	.445	−0.76	.008	68.49
Agreeableness	10	2.30	−.02	−.04	.01	.129	−1.52	.009	73.39
Conscientiousness	12	0.94	−.01	−.02	.01	.333	−0.97	.001	25.48

Note. k, number of effect sizes (correlations); Q_M, Q statistic for the test of moderator; $\hat{\beta}$, estimated regression coefficient of the moderator; *95% CI*, 95% confidence interval with lower and upper limit

the adjusted correlations in PET was comparable to the results of our random-effects meta-analyses.

Discussion

Burnout and Personality in Teachers

The aim of the present study was to contribute to a better understanding of the importance of individual factors for burnout in teachers through examining the relationships between teachers' Big Five personality traits and the three symptoms of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment. This knowledge can provide a starting point for the identification of teachers in need of interventions, the development of appropriate interventions, and the further development of theoretical models on the determinants of burnout. In recent years, cross-profession meta-analyses already found a significant link between the Big Five and burnout (e.g., Alarcon et al., 2009; Swider & Zimmerman, 2010). The first meta-analysis to include teachers ignored the

Table 4 Results of Egger's regression test (ERT) and PET-adjusted correlation coefficients

Relation	ERT			PET			
					95% CI of $\hat{\rho}_{adj}$		
	k	$\hat{\beta}_E$	p_E	$\hat{\rho}_{adj}$	Lower	Upper	p
Emotional exhaustion							
Neuroticism	18	0.36	.171	.36	.26	.47	< .001
Extraversion	18	−0.23	.705	−.23	−.32	−.14	< .001
Openness	17	−0.02	.890	−.02	−.17	.13	.793
Agreeableness	17	−0.13	.590	−.13	−.25	−.01	.033
Conscientiousness	19	−0.20	.669	−.20	−.37	−.04	.017
Depersonalization							
Neuroticism	17	0.23	.155	.23	.12	.34	< .001
Extraversion	17	−0.17	.153	−.17	−.29	−.06	.003
Openness	16	−0.12	.969	−.12	−.24	.00	.055
Agreeableness	15	−0.20	.124	−.20	−.34	−.05	.007
Conscientiousness	17	−0.22	.475	−.22	−.33	−.11	< .001
Reduced personal accomplishment							
Neuroticism	17	0.31	.980	.31	.16	.47	< .001
Extraversion	17	−0.35	.928	−.35	−.44	−.26	< .001
Openness	16	−0.36	.201	−.36	−.55	−.18	< .001
Agreeableness	15	−0.30	.981	−.30	−.49	−.12	.002
Conscientiousness	17	−0.39	.122	−.39	−.49	−.29	< .001

Note. k, number of effect sizes (correlations); $\hat{\beta}$, estimated regression coefficient; *95% CI*, 95% confidence interval with lower and upper limit

three-dimensional structure of burnout and, surprisingly, did not find any significant associations between the Big Five and burnout (Kim et al., 2019).

The current meta-analysis, including 18 studies and involving 4,724 teachers, shows that, except for a nonsignificant association between emotional exhaustion and openness, all relations between the three burnout dimensions and the Big Five personality traits were in line with our expectations, showing small to medium effect sizes. Our findings indicate that, for emotional exhaustion, neuroticism is the personality trait that is most closely related. Highly neurotic individuals, who are more likely to experience, for instance, feelings of anxiety, depression, or hostility in general (McCrae & Costa, 2008; McCrae & John, 1992), also seem to evaluate work-related situations in a more negative way, which results in stronger feelings of being emotionally overextended or of lacking energy. We also found small correlations between emotional exhaustion and extraversion, agreeableness, and conscientiousness, which were in line with our hypotheses. Contrary to our expectations, we did not find evidence for an association between emotional exhaustion and openness. This was in line with the meta-analysis of Alarcon and colleagues (2009) and indicates that the interest in and extent of involvement with

new experiences, sensations, and impressions is not directly related to emotional exhaustion as an affective dimension of burnout.

For depersonalization, neuroticism was closely related, indicating that being generally depressive and hostile is strongly associated with feelings of distance and with a negative attitude towards others. Additionally, agreeableness—with individuals showing, in general, more altruism, modesty, compliance, and tender-mindedness—showed a small- to medium-sized negative correlation with the depersonalization dimension of burnout. Relating this finding to theoretical models on the development of stress, such as Hobfoll's conservation of resources theory (1989, 2001), agreeableness, in particular, seems to be a resource that reduces the likelihood of developing a distanced and negative attitude towards others. Moreover, based on the small negative associations that we found between depersonalization and extraversion, openness, and conscientiousness, these personality traits could also be regarded as potential resources.

For reduced personal accomplishment, extraversion was closely related, as shown by a medium-sized negative correlation. Thus, feelings of inefficiency and failure and low confidence in one's own abilities in terms of one's own work are less likely to be experienced by teachers who appear energetic, talkative, dominant, enthusiastic, and who feel good in crowds of people. This seems to be an important resource for teaching as it is a profession that involves a large number of social interactions. Moreover, conscientiousness and agreeableness also showed medium-sized negative correlations with reduced personal accomplishment, and openness showed a small to medium-sized negative correlation with reduced personal accomplishment. This indicates that teachers who are, in general, more self-disciplined and reliable, teachers who show a tendency to feel affection and warmth in interpersonal relationships, and open-minded teachers are also less likely to experience feelings of inefficiency and failure in the teaching profession. Comparable to its association with depersonalization, neuroticism also showed a positive and medium-sized correlation with reduced personal accomplishment, indicating that being generally depressive and hostile is associated with feelings of inefficiency and failure.

Our results support the assumptions of theoretical models such as Lazarus's transactional model of stress and coping (1999) or Hobfoll's conservation of resources theory (1989, 2001) concerning interindividual differences that shape reactions to job-related stressors. Interestingly, the Big Five personality traits seem to be nearly equally important for reduced personal accomplishment and depersonalization, whereas for emotional exhaustion, neuroticism seems to take a special role, and openness shows no connection with emotional exhaustion at all. These differential associations of the three burnout dimensions with the Big Five personality traits illustrate the importance of differentiating between the dimensions and of not summing them up (Maslach et al., 1996).

The field of activity of the teaching profession differs from many other professions by, for example, having a high number of social interactions with students and parents as well as the need for spontaneous responses to classroom disruptions. However, the results of the current meta-analysis were in accordance with the findings from the two cross-profession meta-analyses of Alarcon et al. (2009) and Swider and Zimmerman (2010), which included samples with employees in

different occupations. Both of the studies also showed that for emotional exhaustion and depersonalization, neuroticism was the personality trait with the highest association, whereas for reduced personal accomplishment, extraversion was more important. Thus, the associations between the burnout dimensions and personality traits of in-service teachers seem to be comparable to cross-profession associations. This finding, combined with a high prevalence of burnout and stress in the teaching profession (García-Carmona et al., 2019; Johnson et al., 2005), raises the question of whether people who decide to become a teacher show less favorable personality traits, for example, higher values in neuroticism or lower values in extraversion. However, this "negative selection hypothesis" does not seem to hold, at least for German teachers (Roloff Henoch et al., 2015).

The analysis of whether teachers' professional level had moderating effects on the association of personality traits and burnout did not find any support for moderating effects. For professional education, no analyses were conducted due to a lack of studies including only teachers without a university degree. For professional experience, a relatively restricted variance concerning the years of service in the studies investigated might be a reason for the finding. However, the moderator effects investigated were located on the study-level instead of the individual level. It would be interesting to use the individual participant data of multiple studies to meta-analytically investigate whether the individual professional education and years of experience can buffer the personality-related risk of an individual experiencing high levels in the burnout dimensions.

Limitations and Future Research

To the best of our knowledge, the present study is the first meta-analysis to investigate the differential associations between the three burnout dimensions and the Big Five personality traits in in-service teachers. Nonetheless, some main limitations need to be considered. First, this meta-analysis focused only on personal factors and did not include environmental factors, such as income, class variables, or relationships to colleagues. Based on theories of the development of stress and strain (e.g., Hobfoll, 2001; Kyriacou & Sutcliffe, 1978; Lazarus, 1999), it would be interesting to investigate relative effects and the interplay between personality traits and environmental factors in further research. Second, only studies that used self-report inventories were included, as this meta-analysis was concerned with teacher perceptions. However, this raises the question of the extent to which the relation between burnout and personality traits might be overestimated due to a common method bias resulting from the assessment of both constructs through self-reports (Podsakoff et al., 2012). It has been shown in the past that there can be a difference between self-reports and the external assessment of personality traits (Connelly & Ones, 2010; Oh et al., 2011), which is why this could be investigated in more detail in the future. Moreover, it would be interesting to consider physiological measures, such as cortisol levels, as objective indicators of the well-being of individuals (Almeida et al., 2009). Third, it is important to note that the personality traits were only considered individually. Thus, the fact that they could possibly be mutually dependent was

ignored. It might be interesting to examine how certain personality types or clusters of personality traits are associated with burnout. Fourth, the moderator analyses concerning professional education could not be carried out due to a lack of studies including only teachers without a university education. Finally, the meta-analyses have some general limitations; for example, the primary studies are likely to be based on very different contexts. Those contexts cannot be taken into account unless a sufficient number of studies is available that makes it possible to include context variables as additional moderators. However, meta-analytic research has added value compared to context-sensitive primary studies or even qualitative studies.

Conclusions and Practical Implications

As burnout has considerable effects on teachers' and students' motivation and performance, it should be addressed preventively before it is manifested (Jennings & Greenberg, 2009; Maslach, 2003; Rudow, 1999; Shen, 2015; Swider & Zimmerman, 2010). Currently, most interventions that are conducted in order to reduce or prevent the burnout syndrome start when a person is already suffering from burnout symptoms; such interventions have no or only small effects on the burnout dimensions (Iancu et al., 2017; Maricuțoiu et al., 2016).

The findings of the present meta-analysis suggest that it might be promising to encourage interventions that strengthen favorable types of behaviors. Three examples of such interventions are mindfulness interventions that can help people to manage the possible negative effects of excessive worrying, which can be an expression of neuroticism; social skills training that can help people to improve their confidence in and reduce their anxiety about social situations, which can be an expression of extraversion; and cognitive training that strengthens individuals' enjoyment of and interest in cognitively engaging activities, which can be an expression of openness (e.g., Jackson et al., 2012; Krasner et al., 2009). It would be interesting to investigate which kind of intervention works best to reduce the risk of teachers experiencing burnout symptoms in connection with teachers' personality traits. Beginning teachers especially could benefit from such interventions, because entering the teaching profession is assumed to be associated with a higher risk of experiencing stress or strain (Schmidt et al., 2017; Voss et al., 2017). Because there is limited evidence that selecting teachers based on these personality traits would be effective and because we included only in-service teachers in our meta-analysis, thus focusing on a preselected sample, we cannot make a recommendation for teacher selection based on personality traits.

To summarize, burnout dimensions and personality traits are significantly related in teachers in a way that is comparable to cross-profession associations. It is thus important to identify strengths and weaknesses concerning teachers' personality and to foster types of teacher behavior that are in line with favorable personality traits. Preventive interventions during teacher training at university and on the job might be a promising approach to reduce the prevalence of burnout in teachers and might thus mitigate its negative consequences.

Declarations

Conflict of Interest The authors declare no competing interests.

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