



# Burnout and depressive symptoms are not primarily linked to perceived organizational problems

Renzo Bianchi<sup>a</sup>, Eric Mayor<sup>a</sup>, Irvin Sam Schonfeld<sup>b</sup> and Eric Laurent<sup>c</sup>

<sup>a</sup>Institute of Work and Organizational Psychology, University of Neuchâtel, Neuchâtel, NE, Switzerland;

<sup>b</sup>Department of Psychology, The City College of the City University of New York, New York City, NY, USA;

<sup>c</sup>Laboratory of Psychology (EA 3188), Bourgogne Franche-Comté University, Besançon, France

## ABSTRACT

In this 257-participant study (76% female; mean age: 44.84), we examined two ideas that are widespread among burnout researchers: (a) the idea that burnout is primarily related to occupational-level factors; and (b) the idea that burnout should be considered a sentinel indicator in research on negative occupational outcomes. We investigated the links between burnout and a series of generic and work-related variables, namely, depressive symptoms, neuroticism, extraversion, effort-reward imbalance in the job [ERI], social support at work (SSW), and turnover intention. Burnout was assessed with the Shirom-Melamed Burnout Measure, depressive symptoms with the PHQ-9, neuroticism and extraversion with the NEO-Five Factor Inventory, ERI with the 10-item version of the Effort-Reward Imbalance Questionnaire, SSW with the Job Content Questionnaire, and turnover intention with a dedicated 3-item measure. Correlation, multiple regression, and relative weight analyses were conducted. Burnout was not found to be more strongly linked to organizational and work-contextualized variables than to personality traits. In addition, turnover intention was not associated to a greater extent with burnout than with ERI. Burnout and depressive symptoms were highly correlated and exhibited overlapping nomological networks. Overall, our findings question the way burnout has been generally conceived.

## ARTICLE HISTORY

Received 16 November 2017

Accepted 10 May 2018

## KEYWORDS

Job stress; neuroticism; occupational health; personality; relative weight analysis

## Introduction

Burnout has been regarded as a job-induced syndrome combining pervasive fatigue and loss of motivation (Maslach, Schaufeli, & Leiter, 2001; Shirom & Melamed, 2006). The connection of burnout with work has been viewed as a distinctive feature of the construct, most notably in comparison to depression (Maslach et al., 2001). Although burnout has become a hotspot for research on occupational health, gray areas surround the construct (Bianchi & Laurent, 2018; Bianchi, Schonfeld, & Laurent, *in press*; Hakanen & Bakker, 2017). In this study, we addressed the questions of whether burnout (a) is primarily related to occupational-level factors and (b) can be considered a sentinel indicator in research on negative occupational outcomes. These two questions directly bear on how burnout should be conceived of and managed.

**CONTACT** Renzo Bianchi ✉ [renzo.bianchi@unine.ch](mailto:renzo.bianchi@unine.ch) Institute of Work and Organizational Psychology, University of Neuchâtel, Émile-Argand 11, 2000 Neuchâtel, NE, Switzerland

© 2018 Informa UK Limited, trading as Taylor & Francis Group

A widespread idea in the field of burnout research is that burnout is first and foremost dependent on organizational and work-contextualized factors, and only limitedly related to generic dispositional factors. Thus, according to Maslach and Leiter (1997), 'burnout is not a problem of the people themselves but of the *social environment* in which people work' (p. 18). Similarly, Toker, Melamed, Berliner, Zeltser, and Shapira (2012) affirmed that burnout 'is determined by the social environment at work' (p. 844). Shanafelt, Goh, and Sinsky (2017) suggested that burnout should not be mistaken for a person-level problem. The validity of these claims, however, is open to question (Bianchi & Schonfeld, 2016; Swider & Zimmerman, 2010). To date, both work-contextualized and generic dispositional factors have been linked to burnout. Increases in job demands (e.g. work overload) and decreases in job resources (e.g. autonomy), for instance, have been found to predict burnout in longitudinal research (Schaufeli, Bakker, & Van Rhenen, 2009). Contemporaneously, personality traits such as neuroticism – the propensity to experience negative affect – and extraversion – the tendency to be active and sociable and to exhibit bright mood – have also been associated with the syndrome (for a meta-analytic review, see Swider & Zimmerman, 2010). Crucially, while burnout has been linked to work-contextualized *and* generic dispositional factors, there has been a paucity of research on the respective weights of these two classes of explanatory factors. The first objective of our study was to examine whether burnout is more strongly associated with work-contextualized factors than with generic dispositional factors. We focused on two key work-contextualized factors, effort-reward imbalance in the job (ERI; Siegrist, 1996) and social support at work (SSW; Karasek et al., 1998), and two key generic dispositional factors, neuroticism and extraversion (Barlow, Ellard, Sauer-Zavala, Bullis, & Carl, 2014; Costa & McCrae, 1980; Semmer, 2006).

Another common belief among burnout researchers is that burnout is a major driver of negative occupational outcomes such as job turnover. As an illustration, Leiter and Maslach (2009) assumed burnout to be a critical proximal predictor of job turnover. In the flourishing subfield of physician burnout research, Shanafelt et al. (2017) recently elevated burnout to the status of indicator of reference for the management of physician turnover (see also Olson, 2017). Problematically, whether burnout actually performs better than other prodromal indicators of negative occupational outcomes is ill-understood. The second objective of our study was to examine whether burnout explains more variance in job turnover than depression, ERI, SSW, neuroticism, or extraversion. Depression, ERI, SSW, neuroticism, and extraversion have each been associated with job turnover in past research (Bauer, Erdogan, Liden, & Wayne, 2006; Derycke et al., 2010; John, Baiyun, Randi, & Yuliya, 2017; Lerner et al., 2004; Nohe & Sonntag, 2014; Zimmerman, 2008).

## Methods

### *Study sample and recruitment procedure*

A convenience sample of 257 schoolteachers, employed in the French-speaking region of Switzerland, took part in this study (76% female). Participants were reached by email through contacts with elementary, middle, and high schools in January 2016. The only eligibility criterion for participating in the study was to be currently employed as a

schoolteacher. Because the number of schoolteachers who got access to the survey was unknown, the response rate was indeterminable.

Participants were asked to respond to an Internet survey. Participation was voluntary. Respondents could stop completing the survey at any moment and for any reason if they wanted to. Confidentiality was guaranteed to each participant. Respondents' mean age was 44.84 ( $SD = 10.46$ ). Their mean length of employment was 18.61 years ( $SD = 10.79$ ).

## Measures

Burnout symptoms were assessed with the Shirom-Melamed Burnout Measure (SMBM; Shirom & Melamed, 2006;  $\alpha = .96$ ). The SMBM includes three subscales: physical fatigue (six items;  $\alpha = .95$ ), cognitive weariness (five items;  $\alpha = .96$ ), and emotional exhaustion (three items;  $\alpha = .92$ ). Respondents are asked to report how they felt *at work*. The SMBM is a widely used measure of burnout with excellent psychometric properties (Shirom & Melamed, 2006). In contrast to measures such as the Maslach Burnout Inventory (MBI; Maslach et al., 2001), the SMBM reflects a view of burnout that is both theory-driven and conceptually homogeneous (Shirom & Melamed, 2006).

Depressive symptoms were assessed with the PHQ-9 (Kroenke, Spitzer, & Williams, 2001;  $\alpha = .86$ ). The PHQ-9 targets the nine diagnostic criteria for major depressive disorder of the *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition (American Psychiatric Association, 2013; Kroenke et al., 2001). The PHQ-9 has demonstrated good psychometric and screening properties in both patient and nonpatient samples (see Bianchi & Brisson, *in press*).

In keeping with recent recommendations pertaining to the management of measurement artefacts in burnout research (Bianchi, Verkuilen, Brisson, Schonfeld, & Laurent, 2016), burnout and depressive symptoms were measured within the same time window – the past two weeks – using the response frame of the PHQ-9 (4-point scale, from 0 for *not at all*, to 3 for *nearly every day*). A participant's burnout score was that participant's mean score on the SMBM. A participant's depression score was that participant's mean score on the PHQ-9. We conducted a principal component analysis (PCA) with promax rotation to reexamine the latent structure of the SMBM. Our PCA confirmed the commonly found three-component structure of the questionnaire, corresponding to its physical fatigue, cognitive weariness, and emotional exhaustion subscales (explained variance: 84%; Kaiser-Meyer-Olkin measure of sampling adequacy = .95; Bartlett's test of sphericity:  $p < .001$ ).

Neuroticism and extraversion were assessed with the NEO Five-Factor Inventory (NEO-FFI; Rolland, Parker, & Stumpf, 1998). In the NEO-FFI, neuroticism and extraversion are each assessed with a 12-item subscale. In this study, the internal consistency reliability coefficients for the neuroticism and extraversion subscales of the NEO-FFI were .88 and .78, respectively. Participants responded using a 5-point scale (from 0 for *strongly disagree* to 4 for *strongly agree*). Mean neuroticism and extraversion scores were computed for each participant. The NEO-FFI is an instrument of reference in personality research (McCrae & Costa, 2004).

ERI was assessed with the 10-item version of the Effort-Reward Imbalance Questionnaire (ERIQ-10; Siegrist, Wege, Pühlhofer, & Wahrendorf, 2009). The ERIQ-10 comprises three effort-related items ( $\alpha = .62$ ) and seven reward-related items

( $\alpha = .79$ ). Participants responded using a 4-point scale, from 1 (*do not agree at all*), to 5 (*totally agree*). The assessment of ERI relies on the ratio of job-related efforts to job-related rewards. The effort-reward imbalance model is a prominent model in occupational stress research today (Wang et al., 2012).

In order to assess SSW, we used eight items from the Job Content Questionnaire (Karasek et al., 1998) – four supervisor support items ( $\alpha = .89$ ) and four coworker support items ( $\alpha = .81$ ). The items are equally divided into instrumental support items and socioemotional support items. A 1-to-4 scale (from *do not agree at all* to *totally agree*) was employed. Mean SSW scores were computed for each participant.

A measure of turnover intention was created based on the three following items ( $\alpha = .74$ ): ‘I plan on leaving my job within the next year’; ‘I have been actively looking for other jobs’; ‘I want to remain in my job’ (Leiter & Maslach, 2009). Participants responded using a 5-point scale, from 1 (*do not agree at all*), to 5 (*totally agree*). Mean turnover intention scores were computed for each participant.

### Data analyses

We first explored the basic relationships among our main variables of interest. We then examined the extent to which generic dispositional factors (neuroticism and extraversion) and work-contextualized factors (ERI and SSW) were associated with burnout and depression. Finally, we investigated whether and how burnout, depression, neuroticism, extraversion, ERI, and SSW were related to turnover intention. We relied on correlational analysis, multiple regression analysis, and relative weight analysis (RWA) to accomplish these goals. RWA allows investigators to decompose the total variance explained by a regression model ( $R^2$ ) into weights reflecting the proportional contribution of the various predictors (Tonidandel & LeBreton, 2011). RWA was performed using RWA Web (Tonidandel & LeBreton, 2015).

### Results

Correlations among the main study variables are displayed in Table 1. Burnout and depression were found to correlate very strongly,  $r = .82$  (disattenuated correlation: .91). In order to examine the extent to which the strength of the burnout-depression correlation was dependent on content overlap between the SMBM and the PHQ-9 at the level of fatigue-related items, we removed three items from the PHQ-9, related to sleep disturbance (item 3), fatigue and loss of energy (item 4), and concentration impairment (item 7), and recomputed the burnout-depression correlation. The correlation between the SMBM and the ‘PHQ-6’ was slightly smaller than the correlation between the SMBM and the PHQ-9, but still very high,  $r = .75$  (disattenuated correlation: .86).<sup>1</sup>

Burnout and depression showed similar patterns of correlations with our other variables of interest, i.e. neuroticism, extraversion, job-related effort, job-related reward, ERI, SSW, and turnover intention. The mean difference between the correlations attached to burnout and those attached to depression was .02. Like depression, burnout was more strongly associated with neuroticism than with any of the work-related variables under consideration, namely, job-related effort, job-related reward, ERI, SSW, and turnover intention.

**Table 1.** Means (*M*), standard deviations (*SD*), and correlations<sup>a</sup> among the main study variables (*N* = 257).

		<i>M</i>	<i>SD</i>	2.	3.	4.	5.	6.	7.	8.	9.
1.	Burnout symptoms (0–3)	0.82	0.72	.82	.63	–.33	.48	–.44	.55	–.41	.45
2.	Depressive symptoms (0–3)	0.76	0.56	—	.69	–.33	.44	–.45	.54	–.37	.44
3.	Neuroticism (0–4)	1.68	0.80		—	–.41	.32	–.46	.46	–.42	.36
4.	Extraversion (0–4)	2.58	0.56			—	.05	.20	–.10	.26	–.18
5.	Job-related effort (1–4)	2.93	0.65				—	–.29	.68	–.19	.29
6.	Job-related reward (1–4)	2.57	0.62					—	–.82	.54	–.48
7.	ERI <sup>b</sup>	1.25	0.56						—	–.45	.49
8.	Social support at work (1–4)	2.98	0.53							—	–.31
9.	Turnover intention (1–5)	1.87	0.94								—

<sup>a</sup> Any correlation the absolute value of which is greater than .10 is significant at  $p < .05$ . Any correlation the absolute value of which is greater than .19 is significant at  $p < .001$ .

<sup>b</sup> ERI: Effort-reward imbalance in the job. ERI reflects the division of job-related effort mean scores (dividends) by job-related reward mean scores (divisors).

The correlations among the three subscales of the SMBM were as followed. Physical fatigue correlated .71 with cognitive weariness and .56 with emotional exhaustion. Cognitive weariness correlated .63 with emotional exhaustion. Physical fatigue, cognitive weariness, and emotional exhaustion correlated with depression .81, .71, and .54, respectively. Thus, burnout's dimensions (physical fatigue, cognitive weariness, and emotional exhaustion) did not correlate more strongly with each other (mean  $r = .63$ ) than with depression (mean  $r = .69$ ).

Multiple regression analysis showed that burnout symptoms were associated with neuroticism, ERI, and extraversion; no statistically significant association was observed between burnout symptoms and SSW (Table 2). In addition, we found no statistically significant interaction between work-contextualized and generic dispositional factors.<sup>2</sup> A similar pattern of results was obtained with depressive symptoms as the outcome variable. RWA indicated that, like depressive symptoms, burnout symptoms were not more strongly associated with work-contextualized factors than with generic dispositional factors. Neuroticism accounted for about 44% of the variance in burnout symptoms; ERI, about 35%; SSW, about 12%; and extraversion, about 10% (Table 3).

Regarding turnover intention, we examined burnout and depression in distinct models to avoid multicollinearity problems – resulting from the very strong correlation between the two entities (Allison, 2012; Henseler, Ringle, & Sinkovics, 2009). In the multiple regression model that included *burnout*, neuroticism, extraversion, ERI, and SSW as independent variables and turnover intention as the dependent variable (Table 4), turnover intention was associated only with ERI ( $\beta = 0.33$ ,  $p < .001$ ) and burnout ( $\beta = 0.22$ ,  $p < .01$ ). In the multiple regression model that included *depression*, neuroticism, extraversion, ERI, and SSW as independent variables and turnover intention as the dependent variable (Table 4), turnover intention was associated only with ERI ( $\beta = 0.34$ ,  $p < .001$ ) and depression ( $\beta = 0.22$ ,  $p < .01$ ). Regarding the model that included *burnout*, neuroticism, extraversion, ERI, and SSW as independent variables, RWA indicated that ERI accounted for about 44% of the variance in turnover intention; burnout, about 29%; neuroticism, about 13%; SSW, about 11%; and extraversion, about 4% (Table 5). Regarding the model that included *depression*, neuroticism, extraversion, ERI, and SSW as independent variables, RWA indicated that ERI accounted for about 45% of the variance in turnover intention; depression, about 28%; neuroticism, about 12%; SSW, about 11%; and extraversion, about 4% (Table 5).

**Table 2.** Summary of multiple regression analyses involving burnout and depressive symptoms as dependent variables (*N* = 257).

Predictors <sup>a</sup>	Burnout symptoms					Depressive symptoms						
	<i>B</i>	<i>SE</i> <sup>c</sup>	$\beta$	<i>p</i>	95% confidence interval for <i>B</i>	Semi-partial correlation	<i>B</i>	<i>SE</i> <sup>c</sup>	$\beta$	<i>p</i>	95% confidence interval for <i>B</i>	Semi-partial correlation
Neuroticism	0.36	0.05	0.40	.00	0.26, 0.46	.32	0.36	0.04	0.52	.00	0.29, 0.43	.41
Extraversion	−0.15	0.06	−0.11	.03	−0.27, −0.02	−.10	−0.09	0.05	−0.09	.05	−0.19, 0.00	−.08
ERI <sup>b</sup>	0.42	0.07	0.33	.00	0.29, 0.56	.28	0.29	0.05	0.29	.00	0.19, 0.39	.24
Social support at work	−0.08	0.07	−0.06	.25	−0.22, 0.06	−.05	0.01	0.05	0.01	.91	−0.10, 0.11	.01
Adjusted <i>R</i> -squared				49%						54%		

<sup>a</sup> Variance inflation factors did not exceed 1.60.  
<sup>b</sup> ERI: Effort-reward imbalance in the job. ERI reflects the division of job-related effort mean scores (dividends) by job-related reward mean scores (divisors).  
<sup>c</sup> SE: Standard error.

**Table 3.** Summary of relative weight analyses involving burnout and depressive symptoms as dependent variables ( $N = 257$ ).

Predictors	Burnout symptoms			Depressive symptoms		
	Raw weights	95% confidence interval for raw weights <sup>b</sup>	Rescaled weights <sup>c</sup>	Raw weights	95% confidence interval for raw weights <sup>b</sup>	Rescaled weights <sup>c</sup>
Neuroticism	0.22	0.15, 0.29	43.51	0.29	0.22, 0.37	53.68
Extraversion	0.05	0.02, 0.10	9.90	0.05	0.02, 0.09	9.31
ERI <sup>a</sup>	0.17	0.10, 0.25	34.78	0.16	0.09, 0.23	29.12
Social support at work	0.06	0.02, 0.11	11.80	0.04	0.02, 0.08	7.88

<sup>a</sup> ERI: Effort-reward imbalance in the job. ERI reflects the division of job-related effort mean scores (dividends) by job-related reward mean scores (divisors).

<sup>b</sup> A 10,000-iteration bootstrap was performed.

<sup>c</sup> Rescaled weights are indicative of the percentage of variance explained by each predictor. The total may not be exactly 100 due to rounding.

## Discussion

The aim of the present study was twofold. First, we examined the relative importance of key work-contextualized and generic dispositional factors in burnout's variance. Second, we sought to determine whether considering burnout an indicator of reference in the assessment of job turnover – a central negative occupational outcome – is warranted. Depression was used as a comparison variable. By contrast with burnout, which is supposed to be job-related and situation-specific, depression has been regarded by burnout researchers as pervasive and context-free (Maslach et al., 2001).

With respect to our first objective, we found no evidence that burnout is more strongly associated with work-contextualized factors than with generic dispositional factors. The factor that showed the greatest connection with burnout was neuroticism, a long-studied personality trait (Barlow et al., 2014; Costa & McCrae, 1980; Semmer, 2006). This finding challenges the widespread idea that work-contextualized factors override generic dispositional factors as far as burnout is concerned (Maslach & Leiter, 1997; Shanafelt et al., 2017; Toker et al., 2012), and call for a balanced approach to these two classes of factors in burnout research. The tendency of many investigators to overlook the role of personality in burnout is surprising in light of the basic fact that, submitted to similar working conditions and obligations within the same workplace, some workers develop burnout symptoms whereas others do not. This basic fact highlights the importance of individual differences in burnout.

With respect to our second objective, burnout was not found to account for more variance in turnover intention than ERI. ERI was the factor that exhibited the strongest link to turnover intention in this study. These results suggest that it may be unwise to view burnout as a leading sentinel factor in job turnover research (Olson, 2017; Shanafelt et al., 2017). Indicators such as ERI may be more helpful in research on negative occupational outcomes. Moreover, burnout was not found to account for more variance in turnover intention than depression. That burnout and depressive symptoms were similarly associated with turnover intention is consistent with the results of a recent study by Bianchi and Brisson (in press), in which burnout and depressive symptoms were found to be attributed to work to a similar extent. In both cases, fewer than half of the surveyed participants considered their job as the main cause of their symptoms.

In line with a number of previous studies, we found a strong correlation between burnout and depressive symptoms. In a study by Ahola, Hakanen, Perhoniemi, and

**Table 4.** Summary of multiple regression analyses involving turnover intention as the dependent variable (*N* = 257).

Predictors <sup>a</sup>	Model 1						Model 2						Model 3					
	<i>B</i>	<i>SE</i> <sup>c</sup>	$\beta$	<i>p</i>	95% confidence interval for <i>B</i>	Semi-partial correlation	<i>B</i>	<i>SE</i> <sup>c</sup>	$\beta$	<i>p</i>	95% confidence interval for <i>B</i>	Semi-partial correlation	<i>B</i>	<i>SE</i> <sup>c</sup>	$\beta$	<i>p</i>	95% confidence interval for <i>B</i>	Semi-partial correlation
Neuroticism	0.13	0.08	0.11	.10	−0.03, 0.29	.09	0.03	0.09	0.02	.74	−0.14, 0.20	.02	−0.00	0.09	−0.00	.96	−0.19, 0.18	−.00
Extraversion	−0.13	0.10	−0.08	.20	−0.33, 0.07	−.07	−0.09	0.10	−0.05	.37	−0.29, 0.11	−.05	−0.10	0.10	−0.06	.34	−0.30, 0.10	−.05
ERI <sup>b</sup>	0.67	0.11	0.40	.00	0.46, 0.89	.33	0.55	0.11	0.33	.00	0.33, 0.78	.26	0.56	0.11	0.34	.00	0.34, 0.79	.26
Social support at work	−0.12	0.11	−0.07	.31	−0.34, 0.11	−.06	−0.09	0.11	−0.05	.41	−0.31, 0.13	−.04	−0.12	0.11	−0.07	.29	−0.34, 0.10	−.06
Burnout symptoms	.	.	.	.	.	.	0.29	0.10	0.22	.00	0.09, 0.48	.15	.	.	.	.	.	.
Depressive symptoms	.	.	.	.	.	.	.	.	.	.	.	.	0.37	0.13	0.22	.01	0.11, 0.64	.15
Adjusted <i>R</i> -squared	26%						28%						28%					

<sup>a</sup> Variance inflation factors did not exceed 2.19.

<sup>b</sup> ERI: Effort-reward imbalance in the job. ERI reflects the division of job-related effort mean scores (dividends) by job-related reward mean scores (divisors).

<sup>c</sup> SE: Standard error



**Table 5.** Summary of relative weight analyses involving turnover intention as the dependent variable ( $N = 257$ ).

Predictors	Model 1			Model 2		
	Raw weights	95% confidence interval for raw weights <sup>b</sup>	Rescaled weights <sup>c</sup>	Raw weights	95% confidence interval for raw weights <sup>b</sup>	Rescaled weights <sup>c</sup>
Neuroticism	0.04	0.01, 0.07	12.58	0.04	0.02, 0.07	12.14
Extraversion	0.01	0.00, 0.03	3.70	0.01	0.00, 0.04	3.76
ERI <sup>a</sup>	0.13	0.07, 0.20	43.91	0.13	0.07, 0.20	45.01
Social support at work	0.03	0.01, 0.07	10.60	0.03	0.01, 0.07	11.26
Burnout symptoms	0.09	0.04, 0.15	29.22	.	.	.
Depressive symptoms	.	.	.	0.08	0.03, 0.14	27.82

<sup>a</sup> ERI: Effort-reward imbalance in the job. ERI reflects the division of job-related effort mean scores (dividends) by job-related reward mean scores (divisors).

<sup>b</sup> A 10,000-iteration bootstrap was performed.

<sup>c</sup> Rescaled weights are indicative of the percentage of variance explained by each predictor. The total may not be exactly 100 due to rounding.

Mutanen (2014), for instance, disattenuated correlations  $\geq .72$  were found between the MBI-Human Services Survey and the short form of the Beck Depression Inventory (BDI) at three different measurement points. Bianchi, Boffy, Hingray, Truchot, and Laurent (2013) reported a disattenuated correlation between the emotional exhaustion subscale of the MBI-Educators Survey and the BDI-II that reached .82. In a study by Hätinén, Kinnunen, Pekkonen, and Aro (2004), the exhaustion subscale of the MBI-General Survey showed disattenuated correlations as high as .74 and .76 with the BDI at two different measurement points.<sup>3</sup> Correlations of such magnitudes are commonly obtained when two measures of the same construct are under examination (Bianchi, Rolland, & Salgado, 2018; Shirom & Melamed, 2006). Moreover, we found that burnout's dimensions (physical fatigue, cognitive weariness, and emotional exhaustion) did not correlate more strongly with each other than with depression. This finding supports the view that depressive symptoms lie at the heart of the burnout syndrome (Ahola et al., 2014). Finally, burnout and depression demonstrated similar patterns of associations with our other variables of interest, a finding suggestive of overlapping nomological networks (Le, Schmidt, Harter, & Lauver, 2010). Overall, our results further call burnout's discriminant validity into question (Bianchi et al., *in press*).

To date, interventions designed to alleviate burnout symptoms and support the return to work of individuals on sick leave have shown limited effectiveness (Ahola, Toppinen-Tanner, & Seppänen, 2017; Dreison et al., 2018). Our study has implications for the design of more effective interventions. First, in view of the overlap of burnout with depression, it is crucial that depressive symptoms be systematically considered when treating 'burnout' (see also Bianchi et al., *in press*). Failing to do so may result in poor treatment outcomes. Importantly, the neglect of urgency signs such as suicidal ideation – a key manifestation of depression – can have nothing less than lethal consequences (Klonsky, May, & Saffer, 2016). Second, our findings suggest that personality and individual differences should not be overlooked in the management of burnout/depression. Uniform interventional strategies may be of limited utility.

Our study has several limitations. First, because of its cross-sectional design, our study does not allow us to draw causal inferences. Second, we used only one measure of burnout, the

SMBM (Shirom & Melamed, 2006). Studies employing other measures of burnout such as the MBI may be useful. Third, the external validity of our study is limited by the fact that only schoolteachers were examined. Fourth, we relied on 'subjective' measures of occupational-level variables. Although the measures we employed clearly reflect what burnout researchers refer to when they talk of occupational-level variables (see Maslach, 2003), the use of 'objective' measures (i.e. measures not involving respondents' perceptions or appraisals) may be informative. At a more general level, self-report measures are known to be susceptible to various response biases (e.g. social desirability bias).

Our study questions the way burnout is usually conceived. The role of organizational and work-contextualized factors may have been overemphasized in burnout research, to the detriment of the role of generic dispositional factors. Furthermore, burnout's discriminant validity is unsatisfactory. All things considered, burnout is unlikely to qualify as a reference indicator in occupational health research.

## Notes

1. The 'PHQ-6' was not used in any other analysis.
2. For illustrative purposes, we compared individuals scoring at the lower end of the neuroticism continuum ( $\downarrow$ N group; neuroticism scores  $\leq 2$ ;  $n = 171$ ) with individuals scoring at the upper end of the neuroticism continuum ( $\uparrow$ N group; neuroticism scores  $> 2$ ;  $n = 86$ ) in terms of burnout and depressive symptoms. Mann-Whitney U-test revealed an effect of group membership on burnout symptoms,  $p < .001$ . Burnout symptoms were less severe in the  $\downarrow$ N group ( $M = 0.56$ ,  $SD = 0.54$ ) than in the  $\uparrow$ N group ( $M = 1.33$ ,  $SD = 0.75$ ), Cohen's  $d = 1.18$ . In the latter group, burnout symptoms were thus increased by 138%. A similar pattern of results was obtained regarding depressive symptoms. Mann-Whitney U-test revealed an effect of group membership on depressive symptoms,  $p < .001$ . Depressive symptoms were less severe in the  $\downarrow$ N group ( $M = 0.53$ ,  $SD = 0.40$ ) than in the  $\uparrow$ N group ( $M = 1.21$ ,  $SD = 0.55$ ), Cohen's  $d = 1.41$ . In the latter group, depressive symptoms were thus increased by 128%.
3. As a reminder, (emotional) exhaustion is both the 'central quality of burnout' (Maslach et al., 2001, p. 402) and the entry point into the syndrome (Taris, Le Blanc, Schaufeli, & Schreurs, 2005).

## Acknowledgments

The authors thank Amandine Lichtenthäler for her help with data collection.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## ORCID

Renzo Bianchi  <http://orcid.org/0000-0003-2336-0407>

## References

- Ahola, K., Hakanen, J., Perhoniemi, R., & Mutanen, P. (2014). Relationship between burnout and depressive symptoms: A study using the person-centred approach. *Burnout Research*, 1, 29–37.

- Ahola, K., Toppinen-Tanner, S., & Seppänen, J. (2017). Interventions to alleviate burnout symptoms and to support return to work among employees with burnout: Systematic review and meta-analysis. *Burnout Research*, 4, 1–11.
- Allison, P. (2012, September 10). When can you safely ignore multicollinearity? Retrieved from <https://statisticalhorizons.com/multicollinearity>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Publishing.
- Barlow, D. H., Ellard, K. K., Sauer-Zavala, S., Bullis, J. R., & Carl, J. R. (2014). The origins of neuroticism. *Perspectives on Psychological Science*, 9(5), 481–496.
- Bauer, T. N., Erdogan, B., Liden, R. C., & Wayne, S. J. (2006). A longitudinal study of the moderating role of extraversion: Leader-member exchange, performance, and turnover during new executive development. *Journal of Applied Psychology*, 91(2), 298–310.
- Bianchi, R., Boffy, C., Hingray, C., Truchot, D., & Laurent, E. (2013). Comparative symptomatology of burnout and depression. *Journal of Health Psychology*, 18(6), 782–787. doi:10.1177/1359105313481079
- Bianchi, R., & Brisson, R. (in press). Burnout and depression: Causal attributions and construct overlap. *Journal of Health Psychology*. doi:10.1177/1359105317740415
- Bianchi, R., & Laurent, E. (2018). Editorial commentary: Burnout in cardiology—Going to the heart of the misunderstanding. *Trends in Cardiovascular Medicine*, 28(1), 8–9.
- Bianchi, R., Rolland, J.-P., & Salgado, J. F. (2018). Burnout, depression, and borderline personality: A 1,163-participant study. *Frontiers in Psychology*, 8, 2336.
- Bianchi, R., & Schonfeld, I. S. (2016). Burnout is associated with a depressive cognitive style. *Personality and Individual Differences*, 100, 1–5.
- Bianchi, R., Schonfeld, I. S., & Laurent, E. (in press). Burnout: Moving beyond the status quo. *International Journal of Stress Management*. doi:10.1037/str0000088
- Bianchi, R., Verkuilen, J., Brisson, R., Schonfeld, I. S., & Laurent, E. (2016). Burnout and depression: Label-related stigma, help-seeking, and syndrome overlap. *Psychiatry Research*, 245, 91–98.
- Costa, P. T., Jr., & McCrae, R. R. (1980). Influence of extraversion and neuroticism on subjective well-being: Happy and unhappy people. *Journal of Personality and Social Psychology*, 38(4), 668–678.
- Derycke, H., Vlerick, P., Burnay, N., Declaire, C., D'Hoore, W., Hasselhorn, H. M., & Braeckman, L. (2010). Impact of the effort-reward imbalance model on intent to leave among Belgian health care workers: A prospective study. *Journal of Occupational and Organizational Psychology*, 83(4), 879–893.
- Dreison, K. C., Luther, L., Bonfils, K. A., Sliter, M. T., McGrew, J. H., & Salyers, M. P. (2018). Job burnout in mental health providers: A meta-analysis of 35 years of intervention research. *Journal of Occupational Health Psychology*, 23(1), 18–30.
- Hakanen, J. J., & Bakker, A. B. (2017). Born and bred to burn out: A life-course view and reflections on job burnout. *Journal of Occupational Health Psychology*, 22(3), 354–364.
- Hätinen, M., Kinnunen, U., Pekkonen, M., & Aro, A. (2004). Burnout patterns in rehabilitation: Short-term changes in job conditions, personal resources, and health. *Journal of Occupational Health Psychology*, 9(3), 220–237.
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In R. R. Sinkovics & P. N. Ghauri (Eds.), *New challenges to international marketing* (pp. 277–319). Bingley, UK: Emerald Group Publishing Limited. doi:10.1108/S1474-7979(2009)0000020014
- John, F., Baiyun, G., Randi, S., & Yuliya, Y. (2017). The role of affective commitment in the relationship between social support and turnover intention. *Management Decision*, 55(3), 512–525.
- Karasek, R., Brisson, C., Kawakami, N., Houtman, I., Bongers, P., & Amick, B. (1998). The Job Content Questionnaire (JCQ): An instrument for internationally comparative assessments of psychosocial job characteristics. *Journal of Occupational Health Psychology*, 3(4), 322–355.
- Klonsky, E. D., May, A. M., & Saffer, B. Y. (2016). Suicide, suicide attempts, and suicidal ideation. *Annual Review of Clinical Psychology*, 12, 307–330.
- Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16(9), 606–613.

- Le, H., Schmidt, F. L., Harter, J. K., & Lauver, K. J. (2010). The problem of empirical redundancy of constructs in organizational research: An empirical investigation. *Organizational Behavior and Human Decision Processes*, 112(2), 112–125.
- Leiter, M. P., & Maslach, C. (2009). Nurse turnover: The mediating role of burnout. *Journal of Nursing Management*, 17(3), 331–339.
- Lerner, D., Adler, D. A., Chang, H., Lapitsky, L., Hood, M. Y., Perissinotto, C., ... Rogers, W. H. (2004). Unemployment, job retention, and productivity loss among employees with depression. *Psychiatric Services*, 55(12), 1371–1378.
- Maslach, C. (2003). Job burnout: New directions in research and intervention. *Current Directions in Psychological Science*, 12(5), 189–192.
- Maslach, C., & Leiter, M. P. (1997). *The truth about Burnout: How organizations cause personal stress and what to do about it*. San Francisco, CA: Jossey-Bass.
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, 52(1), 397–422.
- McCrae, R. R., & Costa, P. T., Jr. (2004). A contemplated revision of the NEO five-factor inventory. *Personality and Individual Differences*, 36(3), 587–596.
- Nohe, C., & Sonntag, K. (2014). Work–Family conflict, social support, and turnover intentions: A longitudinal study. *Journal of Vocational Behavior*, 85(1), 1–12.
- Olson, K. D. (2017). Physician burnout—A leading indicator of health system performance? *Mayo Clinic Proceedings*, 92(11), 1608–1611.
- Rolland, J. P., Parker, W. D., & Stumpf, H. (1998). A psychometric examination of the French translations of NEO-PI-R and NEO-FFI. *Journal of Personality Assessment*, 71(2), 269–291.
- Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior*, 30(7), 893–917.
- Semmer, N. K. (2006). Personality, stress, and coping. In M. E. Vollrath (Ed.), *Handbook of personality and health* (pp. 73–113). New York, NY: John Wiley & Sons Ltd.
- Shanafelt, T., Goh, J., & Sinsky, C. (2017). The business case for investing in physician well-being. *JAMA Internal Medicine*, 177(12), 1826–1832.
- Shirom, A., & Melamed, S. (2006). A comparison of the construct validity of two burnout measures in two groups of professionals. *International Journal of Stress Management*, 13(2), 176–200.
- Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology*, 1(1), 27–41.
- Siegrist, J., Wege, N., Pühlhofer, F., & Wahrendorf, M. (2009). A short generic measure of work stress in the era of globalization: Effort-reward imbalance. *International Archives of Occupational and Environmental Health*, 82(8), 1005–1013.
- 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.
- Taris, T. W., Le Blanc, P. M., Schaufeli, W. B., & Schreurs, P. J. G. (2005). Are there causal relationships between the dimensions of the Maslach Burnout Inventory? A review and two longitudinal tests. *Work & Stress*, 19(3), 238–255.
- Toker, S., Melamed, S., Berliner, S., Zeltser, D., & Shapira, I. (2012). Burnout and risk of coronary heart disease: A prospective study of 8838 employees. *Psychosomatic Medicine*, 74(8), 840–847.
- Tonidandel, S., & LeBreton, J. M. (2011). Relative importance analysis: A useful supplement to regression analysis. *Journal of Business and Psychology*, 26(1), 1–9.
- Tonidandel, S., & LeBreton, J. M. (2015). RWA Web: A free, comprehensive, web-based, and user-friendly tool for relative weight analyses. *Journal of Business and Psychology*, 30(2), 207–216.
- Wang, J., Smailes, E., Sareen, J., Schmitz, N., Fick, G., & Patten, S. (2012). Three job-related stress models and depression: A population-based study. *Social Psychiatry and Psychiatric Epidemiology*, 47(2), 185–193.
- Zimmerman, R. D. (2008). Understanding the impact of personality traits on individuals' turnover decisions: A meta-analytic path model. *Personnel Psychology*, 61(2), 309–348.

Copyright of Psychology, Health & Medicine is the property of Routledge and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.