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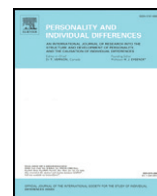
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Burnout is associated with a depressive cognitive style[☆]

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ABSTRACT

We examined whether burnout is associated with a depressive cognitive style, understood as a combination of dysfunctional attitudes, ruminative responses, and pessimistic attributions. A total of 1386 U.S. public school teachers were included—1063 women ($M_{AGE} = 42.73$, $SD_{AGE} = 11.36$) and 323 men ($M_{AGE} = 44.60$, $SD_{AGE} = 11.42$). Burnout was assessed with the Shirom–Melamed Burnout Measure (SMBM). Dysfunctional attitudes were measured with the Dysfunctional Attitude Scale Short Form, ruminative responses with the Ruminative Responses Scale, and pessimistic attributions with the Depressive Attributions Questionnaire. For comparative purposes, depression was assessed using the 9-item depression module of the Patient Health Questionnaire (PHQ-9). Dysfunctional attitudes, ruminative responses, and pessimistic attributions were each similarly associated with burnout and depression. Moreover, the correlations between the SMBM and the PHQ-9 that we observed were comparable to the correlations between the SMBM and the Maslach Burnout Inventory–General Survey reported in past research. Dysfunctional attitudes, ruminative responses, and pessimistic attributions were more characteristic of individuals with high frequencies of burnout (or depressive) symptoms than of their counterparts with low frequencies of burnout (or depressive) symptoms. This study suggests that burned out individuals live in a depressive cognitive world, consistent with the view that burnout is a depressive syndrome.

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1. Introduction

Burnout has been defined as a long-term, negative affective state consisting of emotional exhaustion, physical fatigue, and cognitive weariness (Shirom & Melamed, 2006; Toker & Biron, 2012). Burnout is assumed to result from chronic exposure to job stressors (Maslach, Schaufeli, & Leiter, 2001), with genetics explaining about one-third of the variance in the syndrome (Blom, Bergström, Hallsten, Bodin, & Svedberg, 2012). In the 10th edition of the *International Classification of Diseases* (World Health Organization, 1992), burnout is indexed as a factor influencing health status and contact with health services—burnout is coded Z73.0 and defined as a “state of vital exhaustion.” Burnout has been related to many adverse health outcomes. For instance, burnout has been prospectively identified as a risk factor for coronary heart disease (Toker, Melamed, Berliner, Zeltser, & Shapira, 2012). Burnout has been viewed as a growing burden for working individuals, organizations, and society as a whole (Maslach et al., 2001).

Depression is primarily characterized by anhedonia and dysphoric mood (American Psychiatric Association [APA], 2013), referring at a cerebral level to hypo-activity of the reward system and hyper-

activity of the punishment system, respectively (e.g., Pryce et al., 2011). Depression has been causally related to both acute and chronic stress (Alloy, Abramson, Walshaw, & Neeren, 2006; Pizzagalli, 2014; Slavich & Irwin, 2014; Tennant, 2001). Individual dispositions such as *dysfunctional attitudes*—e.g., pathological perfectionism and need for approval—, *ruminative responses*—repetitive and passive focus on the causes and consequences of one's symptoms of distress without engagement in active coping or problem solving to alleviate dysphoric mood—, and *pessimistic attributions*—the tendency to ascribe negative life events to *internal* (self-dependent), *stable* (unlikely to change), and *global* (likely to affect all areas of life) causes—have been identified as depressogenic factors (Alloy et al., 2006; Joorman, 2009; Michl, McLaughlin, Shepherd, & Nolen-Hoeksema, 2013; Mor & Winquist, 2002). Depression is considered an important public health problem. In the U.S., about 17% of adults experience at least one episode of major depression during their lifetime (Kessler et al., 2005); the lifetime prevalence of major depression in six E.U. countries (Belgium, France, Germany, Italy, The Netherlands and Spain) has been estimated to be 13% (Alonso et al., 2004).

Burnout has often been described in a way that is evocative of depression. In his seminal article on burnout, Freudenberger (1974) already indicated that when experiencing burnout, “the person looks, acts and seems depressed” (p. 161). Maslach and Leiter (1997) emphasized that burnout not only concerns the “presence of negative emotions” but also the “absence of positive ones” (p. 28), thus connecting

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Table 1
Means (*M*), standard deviations (*SD*), Cronbach's alphas (α), and correlations between the main study variables.

	<i>M</i>	<i>SD</i>	α	1	2	3	4	5	6	7	<i>M</i>	<i>SD</i>	α
1. Burnout (1–7)	3.65	1.38	.96	–	.80	.46	.49	.58	–.22	–.19	3.42	1.39	.96
2. Depression (0–27)	8.95	6.02	.87	.76	–	.47	.53	.56	–.17	–.12	8.40	6.22	.88
3. Dysfunctional attitudes (0–3)	1.06	0.53	.85	.42	.45	–	.48	.67	–.18	–.15	1.09	0.52	.84
4. Ruminative responses (1–4)	2.19	0.52	.80	.42	.48	.40	–	.58	–.12	–.09	1.99	0.52	.81
5. Pessimistic attributions (0–4)	1.16	0.77	.93	.53	.57	.63	.56	–	–.14	–.16	1.17	0.74	.93
6. Age	42.73	11.36	–	–.10	–.07	–.14	–.10	–.16	–	.77	44.60	11.42	–
7. Length of employment	14.35	9.28	–	–.08	–.06	–.11	–.10	–.11	.79	–	15.90	10.52	–

Notes. Entries below the diagonal represent women's results (full female sample; $n = 1063$); entries above the diagonal represent men's results (full male sample; $n = 323$). For women, any correlation the absolute value of which is greater than .06 is significant at $p < .05$; for men, any correlation the absolute value of which is greater than .10 is significant at $p < .05$.

burnout¹ with anhedonia and dysphoric mood, the two core symptoms of depression (APA, 2013). In a similar vein, Schaufeli and Buunk (2004) noted that “first and foremost, burnt-out individuals feel helpless, hopeless and powerless” (p. 399), suggestive of the learned helplessness and hopelessness theories of depression (Abramson, Metalsky, & Alloy, 1989; Peterson, Maier, & Seligman, 1993; Pryce et al., 2011). Peterson et al. (1993) described burnout as “an excellent example of learned helplessness” (p. 257). In the last decade, empirical evidence for an overlap of burnout with depression has in fact grown (Bianchi, Schonfeld, & Laurent, 2015a, 2015b). The burnout-depression overlap has notably been observed at etiological and symptom levels. Given their closeness, it has been recommended that burnout and depression be studied together (Shirom, 2005).

Perhaps because many researchers have posited that “burnout is more of a social phenomenon than an individual one” (Maslach et al., 2001, p. 409), dispositional vulnerabilities to burnout have long been overlooked (Alarcon, Eschleman, & Bowling, 2009; McMullen & Krantz, 1988). In a meta-analysis published in 2010, Swider and Zimmerman pointed out “the myopic focus of job burnout research on organizational- and occupational-level causes of burnout and the exclusion of individual-level causes, such as personality” (p. 487). Recently, however, there have been advances in this area of research (e.g., Langelaan, Bakker, van Doornen, & Schaufeli, 2006; Pines, 2004). Burnout has notably been associated with Type D or “distressed” personality, neuroticism, hypersensitivity to social rejection, and a history of mood and anxiety disorders (Armon, 2014; Bianchi, Schonfeld, & Laurent, 2015c; McManus, Jonvik, Richards, & Paice, 2011; Ronen & Baldwin, 2010; Rössler, Hengartner, Ajdacic-Gross, & Angst, 2015; Schonfeld & Bianchi, 2016). Despite those advances, the individual characteristics associated with burnout require further exploration.

The aim of this study was to examine whether burnout is associated with a depressive cognitive style—defined by dysfunctional attitudes, ruminative responses, and pessimistic attributions. Given the overlap of burnout with depression, we hypothesized that dysfunctional attitudes, ruminative responses, and pessimistic attributions would be associated with burnout and that individuals with high frequencies of burnout symptoms would report dysfunctional attitudes, ruminative responses, and pessimistic attributions to a greater extent than individuals with low frequencies of burnout symptoms. In order to detect potential differences between burnout and depression in relation to depressive cognitive style, our primary analyses involving burnout were accompanied by complementary analyses involving depression.

2. Methods

2.1. Participants and data collection

A convenience sample of 1386 U.S. public school teachers took part in this study (Table 1). We previously relied on this teacher sample for another purpose (Schonfeld & Bianchi, 2016). The teachers were

reached with the assistance of school administrators in 18 different states, and asked to complete an Internet survey on a voluntary basis. Participants were mainly from New York City (NYC) and State ($n = 282$), California ($n = 277$), Ohio ($n = 132$), Missouri ($n = 128$), and Massachusetts ($n = 105$). Being a teacher was the only eligibility criterion for participation in the study. We note that the recruitment procedure used in this study did not allow us to estimate the response rate to our survey. Indeed, the number of teachers who actually received the survey from their school administrators is not known.

The Internet survey comprised instruments to assess burnout, depression, dysfunctional attitudes, ruminative responses, pessimistic attributions, as well as a socio-demographic and health questionnaire ascertaining gender, age and length of employment. Online questionnaires have been shown to be as reliable and valid as traditional, paper-and-pencil questionnaires (Gosling, Vazire, Srivastava, & John, 2004; Jones, Fernyhough, de-Wit, & Meins, 2008; Ritter, Lorig, Laurent, & Matthews, 2004). The survey was approved by the Institutional Review Boards of the City University of New York and the NYC Department of Education.

2.2. Burnout

Burnout was assessed with the 14-item version of the Shirom–Melamed Burnout Measure (SMBM; see Toker et al., 2012). The SMBM provides the investigator with a burnout score comprised between 1 (“Never or almost never.”) and 7 (“Always or almost always.”). The SMBM showed strong internal consistency in this study (Cronbach's alpha = .96).

2.3. Depression

Depression was assessed with the 9-item depression module of the Patient Health Questionnaire (PHQ-9; Kroenke & Spitzer, 2002; Cronbach's alpha = .88). The PHQ-9 targets the nine diagnostic criteria for major depression (APA, 2013) and grades depression severity from 0 to 27. Cutpoints of 5, 10, 15, and 20 represent the thresholds for mild, moderate, moderately severe, and severe depression, respectively. The specificity of the PHQ-9 exceeds 99% with a cutpoint of 15, making the PHQ-9 a useful tool for identifying cases of major depression (Kroenke & Spitzer, 2002). The PHQ-9 includes an additional item providing an index of general functional impairment (“How difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?”). The PHQ-9 has been increasingly used to study depression since its introduction in the scientific literature (Pettersson, Bostrom, Gustavsson, & Ekselius, in press).

2.4. Depressive cognitive style

Dysfunctional attitudes were assessed with the Dysfunctional Attitude Scale Short Form version 1 (DAS-SF1; Beevers, Strong, Meyer, Pilkonis, & Miller, 2007). The DAS-SF1 comprises 9 items (e.g., “If I don't set the highest standards for myself, I am likely to end up a second-rate person.”) and produces a mean score ranging from 0 to 3.

¹ Most probably, this connection has been established inadvertently by these authors.

Table 2

Correlations between burnout and depression and the dimensions of pessimistic attributions—pessimistic attributions consist in ascribing uncontrollable negative life events (i.e., one's helplessness) to *internal* (self-dependent), *stable* (unlikely to change), and *global* (likely to affect all areas of life) causes.

	Full female sample (<i>n</i> = 1063)				Full male sample (<i>n</i> = 323)			
	Internal	Stable	Global	Helplessness	Internal	Stable	Global	Helplessness
Burnout	.45	.49	.46	.50	.45	.53	.55	.55
Depression	.50	.54	.51	.51	.44	.53	.55	.50

Note. All correlations are significant at $p < .001$.

Ruminative responses were assessed with the Ruminative Responses Scale refined version (RRS; Treynor, Gonzalez, & Nolen-Hoeksema, 2003). The RRS comprises 10 items (e.g., “Think ‘What am I doing to deserve this?’”); its mean score range is 1–4. Pessimistic attributions were assessed with the Depressive Attributions Questionnaire (DAQ; 16 items; score range; 0–4; Haefel et al., 2008; Kleim, Gonzalo, & Ehlers, 2011; Peterson et al., 1982). The DAQ quantifies the *internal* (e.g., “When bad things happen, I think it is my fault.” Cronbach's $\alpha = .78$), *stable* (e.g., “When bad things happen to me, I am sure it will happen again.” Cronbach's $\alpha = .83$), and *global* (e.g., “When something bad happens, I think of the problems this will cause in all areas of my life.” Cronbach's $\alpha = .79$) character of the respondent's causal attributions as well as his/her level of helplessness (e.g., “I feel helpless when bad things happen.” Cronbach's $\alpha = .75$). Each subscale of the DAQ comprises 4 items. The DAS-SF1, the RRS, and the DAQ presented satisfactory internal consistencies with Cronbach's alphas of .85, .80, and .93, respectively.

2.5. Data analyses

Because teachers worked in different states, we assessed the possibility of within-state similarities or clustering on the measured variables—NYC was treated as a separate state. The presence of clustering would require a multilevel approach to the data analyses (Raudenbush & Bryk, 2001). Intra-class correlations, however, were low, ranging from 0 to .03, and averaging .01, suggesting that teachers in one state were largely similar to teachers in another. Multilevel tests indicated that Pearsonian correlations among the dimensional factors did not significantly vary from state to state.² Results from additional statistical tests were consistent with this finding (Bland & Altman, 1995; Meinck & Rodriguez, 2013).^{3,4} Because the pattern of findings suggests that clustering was not evident, we decided to present the results using standard, non-multilevel statistical tests.

Data were examined using correlation analysis and multivariate analysis of variance (MANOVA). For comparative purposes, depression was examined in addition to burnout.

Consistent with past research (Schonfeld & Bianchi, 2016), participants were categorized as burned out if they scored at least 5.5/7.0 on the SMBM. A cutpoint of 5.5 corresponds to symptoms of burnout experienced more than “quite frequently.” Pending consensual diagnostic criteria, the use of conservative cutpoints corresponding to relatively high frequencies of symptoms has been recommended when interested in identifying likely cases of burnout (Bianchi et al., 2015b). A cutpoint

of 5.5 meets these recommendations. The no-burnout group comprised teachers with SMBM scores of 2—a cutpoint corresponding to symptoms experienced “very infrequently”—or less (Schonfeld & Bianchi, 2016).

In order to identify cases of depression, we relied on the algorithm proposed by PHQ-9 developers for a provisional diagnosis of major depression (see Kroenke & Spitzer, 2002). To be categorized as depressed, a teacher additionally had to exhibit at least “moderately severe” depressive symptoms (i.e., a PHQ-9 score of 15) and report that his/her symptoms rendered his/her daily life at least “very difficult.” Such criteria minimize the risk of including false positives among individuals categorized as depressed. The no-depression group comprised teachers with PHQ-9 scores of at most 4, corresponding to minimal levels of depressive symptoms. Female and male participants were examined separately to provide a detailed view of the results.

3. Results

Correlations among the main study variables are presented in Table 1. Measured as continuous variables, burnout and depression were strongly correlated (disattenuated correlations: .83 in women and .87 in men). Dysfunctional attitudes, ruminative responses, and pessimistic attributions were moderately correlated with both burnout and depression ($.42 \leq r_s \leq .57$, all $p_s < .001$). Within each gender, the paired correlations of each cognitive style variable with burnout and depression were very similar: The magnitude of correlational differences ranged from .01 to .06. The dimensions of pessimistic attributions (*helplessness* associated with *internal*, *stable*, and *global* causes) were similarly related to burnout on the one hand and depression on the other ($.44 \leq r_s \leq .55$, all $p_s < .001$; Table 2). Again, the paired correlations of each attribution variable with burnout and depression were very similar: The magnitude of correlational differences ranged from 0 to .05.

About 10% of the female participants ($n = 102$) and 7% of the male participants ($n = 22$) were categorized as cases of burnout. MANOVAs revealed a group effect (no-burnout versus burnout) on dysfunctional attitudes, ruminative responses, pessimistic attributions, and depressive symptoms, both in men, Wilks' $\lambda = 0.14$, $F(4, 82) = 129.24$, $p < .001$, partial $\eta^2 = .86$, and in women, Wilks' $\lambda = 0.18$, $F(4, 247) = 284.36$, $p < .001$, partial $\eta^2 = .82$ (Table 3). Large effect sizes were observed for each dependent variable ($1.36 < \text{Cohen's } d_s < 4.49$). The group effects remained after controlling for age and length of employment.

No burned out participant was free of depressive symptoms (i.e., exhibited a score less than 5 on the PHQ-9; Kroenke & Spitzer, 2002). In burned out women, depressive symptom levels largely ranged from severe to moderate: severe, 38.24% ($n = 39$); moderately severe, 36.27% ($n = 37$); moderate, 21.57% ($n = 22$); and mild, 3.92% ($n = 4$). In burned out men, depressive symptom levels also largely ranged from severe to moderate: severe, 50% ($n = 11$); moderately severe, 22.73% ($n = 5$); moderate, 22.73% ($n = 5$); and mild, 4.55% ($n = 1$).

About 10% of women ($n = 107$) and 10% of men ($n = 33$) were identified as provisional cases of major depression. MANOVAs revealed a group effect (no-depression versus depression) on dysfunctional attitudes, ruminative responses, pessimistic attributions, and burnout symptoms, both in men, Wilks' $\lambda = 0.27$, $F(4, 136) = 92.54$, $p < .001$, partial $\eta^2 = .73$, and in women, Wilks' $\lambda = 0.28$, $F(4, 399) = 258.26$,

² We thank David Rindskopf for a suggestion regarding the variation of the correlation coefficients across states.

³ Consistent with Bland and Altman's (1995) work, we represented the states in which teachers worked by creating a series of 0–1 dummy variables (e.g., worked in California = 1; did not work in California = 0). The number of dummy variables equaled one less than the number of states. Then, using analysis of covariance, we regressed one factor (e.g., pessimistic attributions) on another (e.g., depressive symptoms), controlling for the dummy variables. The correlations obtained by this method were consistent with the uncontrolled Pearsonian correlations.

⁴ In line with Meinck and Rodriguez (2013), we removed the state effect by subtracting the appropriate state mean from every score, and then recalculated every correlation coefficient without finding material discrepancies between these state-centered correlations and the Pearsonian correlations.

Table 3
Multivariate analyses of variance, with group membership (no-burnout versus burnout) as the independent variable, and depressive symptoms, dysfunctional attitudes, ruminative responses, and pessimistic attributions as the dependent variables.

	Female				<i>p</i>	Cohen's <i>d</i>	Male					
	No-burnout (<i>n</i> = 150)		Burnout (<i>n</i> = 102)				No-burnout (<i>n</i> = 65)		Burnout (<i>n</i> = 22)		<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Depressive symptoms	2.56	2.41	17.53	4.61	<.001	4.07	2.05	1.99	18.77	4.88	<.001	4.49
Dysfunctional attitudes	0.69	0.43	1.37	0.56	<.001	1.36	0.66	0.49	1.54	0.53	<.001	1.72
Ruminative responses	1.87	0.44	2.65	0.54	<.001	1.58	1.65	0.36	2.77	0.71	<.001	1.99
Pessimistic attributions	0.57	0.49	1.85	0.90	<.001	1.77	0.60	0.50	2.16	0.81	<.001	2.32

Notes. The burnout group included participants exhibiting a score of at least 5.5/7.0 on the Shirom–Melamed Burnout Measure (SMBM); the no-burnout group included participants exhibiting a score of at most 2.0/7.0 on the SMBM. As a check, we repeated these analyses using a multilevel approach; the multilevel results paralleled the results reported in this table.

$p < .001$, partial $\eta^2 = .72$ (Table 4). Large effect sizes were observed for each dependent variable ($1.22 < \text{Cohen's } d_s < 4.06$). Similar group effects were observed controlling for age and length of employment.

4. Discussion

We examined the relationships between burnout and three depressogenic cognitive factors, dysfunctional attitudes, ruminative responses, and pessimistic attributions. Parallel analyses of burnout and depression were conducted to observe whether the two entities behaved differently vis-à-vis these three factors.

In both men and women, the correlations of burnout with dysfunctional attitudes, ruminative responses, and pessimistic attributions were similar in strength to the correlations of depression with the three depressogenic cognitive factors. Importantly, the correlations between the SMBM and the PHQ-9 observed in this study (.76 and .80, respectively for women and men) are comparable to the correlations between the SMBM and alternative measures of burnout. For instance, Shirom and Melamed (2006), examining two different groups of professionals, found correlations of .74 and .79 between the SMBM and another widely-used burnout measure, the Maslach Burnout Inventory-General Survey. Such results further question the distinctiveness of burnout with respect to depression (see also Wojciechowski, Strik, Falger, Lousberg, & Honig, 2000).

Teachers with high frequencies of burnout symptoms exhibited dysfunctional attitudes, ruminative responses, and pessimistic attributions to a much greater extent than their colleagues with low frequencies of burnout symptoms (Table 3). These results paralleled those obtained when comparing depressed and nondepressed participants (Table 4). Our results are consistent with those of a recent eye-tracking study showing that burnout and depression interchangeably predict increased attention for “dysphoric” stimuli and decreased attention for “positive” stimuli (Bianchi & Laurent, 2015). Our results are also in keeping with findings showing an association between burnout and perfectionism (Philp, Egan, & Kane, 2012), and between burnout and

“co-rumination” (Boren, 2014). The present study suggests that burnout overlaps with depression in terms of cognitive vulnerabilities.

There are dispositional vulnerabilities to burnout (Alarcon et al., 2009; Swider & Zimmerman, 2010), as there are to potentially any type of (psycho)pathology. Thus far, however, burnout has predominantly been regarded as an “exogenous” syndrome. As an illustration, Maslach and Leiter (1997) emphasized the idea that burnout was *not* a “personality defect” but an “occupational problem” (p. 34). We suggest that a balanced view of burnout, integrating individual and organizational/social risk factors for the syndrome, is needed (see also Pines, 2004; Rössler et al., 2015).

At least four limitations to our study should be mentioned. First, given its cross-sectional design, this study only provided a “snapshot” of the relationship between burnout and depressive cognitive style. Longitudinal studies are needed to address questions of causality. Second, our findings are contingent upon the conception of burnout that we tested and should not be generalized to other conceptions (e.g., Maslach et al., 2001) before more research is carried out. Third, although we relied on a relatively large sample of participants ($N = 1386$), we employed a convenience sample; its representativeness is unknown. This being said, Kristensen (1995) noted that “representativeness is of vital importance in descriptive studies while it is of no value in analytical studies” (p. 21). Variation in exposures and outcomes is what matters most in analytical studies such as ours, an idea that is well understood in occupational medicine (e.g., studies of the impact of asbestos exposure). Fortunately, our sample included teachers with both high and low frequencies of burnout symptoms. Fourth, our study only relied on self-report. Studies using clinical interviews and direct observation should be additionally conducted.

The present study suggests that dysfunctional attitudes, ruminative responses, and pessimistic attributions are associated with burnout. By doing so, this work brings additional insight into the closeness of burnout and depression: *The burned out individual seems to live in a depressive cognitive world.*

Table 4
Multivariate analyses of variance, with group membership (no-depression versus depression) as the independent variable, and burnout symptoms, dysfunctional attitudes, ruminative responses, and pessimistic attributions as the dependent variables.

	Female				<i>p</i>	Cohen's <i>d</i>	Male					
	No-depression (<i>n</i> = 297)		Depression (<i>n</i> = 107)				No-depression (<i>n</i> = 108)		Depression (<i>n</i> = 33)		<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Burnout symptoms	2.31	0.93	5.47	0.89	<.001	3.47	2.17	0.92	5.44	0.67	<.001	4.06
Dysfunctional attitudes	0.76	0.44	1.39	0.58	<.001	1.22	0.79	0.46	1.51	0.44	<.001	1.60
Ruminative responses	1.92	0.41	2.68	0.54	<.001	1.59	1.73	0.40	2.60	0.63	<.001	1.65
Pessimistic attributions	0.61	0.61	1.96	0.94	<.001	1.70	0.68	0.61	1.94	0.75	<.001	1.84

Notes. Regarding group definition, see the “Data analyses” subsection of the “Methods” section of this article. As a check, we repeated these analyses using a multilevel approach; the multilevel results paralleled the results reported in this table.

References

- Abramson, L.Y., Metalsky, G.I., & Alloy, L.B. (1989). Hopelessness depression: A theory-based subtype of depression. *Psychological Review*, 96, 358–372.
- Alarcon, G., Eschleman, K.J., & Bowling, N.A. (2009). Relationships between personality variables and burnout: A meta-analysis. *Work and Stress*, 23, 244–263.
- Alloy, L.B., Abramson, L.Y., Walshaw, P.D., & Neeren, A. (2006b). Cognitive vulnerability to unipolar and bipolar mood disorders. *Journal of Social and Clinical Psychology*, 25, 726–754.
- Alloy, L.B., Abramson, L.Y., Whitehouse, W.G., Hogan, M.E., Panzarella, C., & Rose, D.T. (2006a). Prospective incidence of first onsets and recurrences of depression in individuals at high and low cognitive risk for depression. *Journal of Abnormal Psychology*, 115, 145–156.
- Alonso, J., Angermeyer, M.C., Bernert, S., Bruffaerts, R., Brugha, T.S., Bryson, H., et al. (2004). 12-month comorbidity patterns and associated factors in Europe: Results from the European Study of the Epidemiology of Mental Disorders (ESEMeD) project. *Acta Psychiatrica Scandinavica*, 109(Suppl. 420), 28–37.
- American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- Armon, G. (2014). Type D personality and job burnout: The moderating role of physical activity. *Personality and Individual Differences*, 58, 112–115.
- Beevers, C.G., Strong, D.R., Meyer, B., Pilkonis, P.A., & Miller, I.W. (2007). Efficiently assessing negative cognition in depression: an item response theory analysis of the Dysfunctional Attitude Scale. *Psychological Assessment*, 19, 199–209.
- Bianchi, R., & Laurent, E. (2015). Emotional information processing in depression and burnout: An eye-tracking study. *European Archives of Psychiatry and Clinical Neuroscience*, 265, 27–34.
- Bianchi, R., Schonfeld, I.S., & Laurent, E. (2015a). Burnout-depression overlap: A review. *Clinical Psychology Review*, 36, 28–41.
- Bianchi, R., Schonfeld, I.S., & Laurent, E. (2015b). Is it time to consider the "burnout syndrome" a distinct illness? *Frontiers in Public Health*, 3, 158.
- Bianchi, R., Schonfeld, I.S., & Laurent, E. (2015c). Interpersonal rejection sensitivity predicts burnout: A prospective study. *Personality and Individual Differences*, 75, 216–219.
- Bland, J.M., & Altman, D.G. (1995). Calculating correlation coefficients with repeated observations: Part 1—Correlation within subjects. *BMJ [British Medical Journal]*, 310, 446.
- Blom, V., Bergström, G., Hallsten, L., Bodin, L., & Svedberg, P. (2012). Genetic susceptibility to burnout in a Swedish twin cohort. *European Journal of Epidemiology*, 27, 225–231.
- Boren, J.P. (2014). The relationships between co-rumination, social support, stress, and burnout among working adults. *Management Communication Quarterly*, 28, 3–25.
- Freudenberger, H.J. (1974). Staff burnout. *Journal of Social Issues*, 30, 159–165.
- Gosling, S. D., Vazire, S., Srivastava, S., & John, O. P. (2004). Should we trust web-based studies? A comparative analysis of six preconceptions about Internet questionnaires. *American Psychologist*, 59, 93–104.
- Haefffel, G.J., Gibb, B.E., Metalsky, G.I., Alloy, L.B., Abramson, L.Y., Hankin, B.L., et al. (2008). Measuring cognitive vulnerability to depression: Development and validation of the Cognitive Style Questionnaire. *Clinical Psychology Review*, 28, 824–836.
- Jones, S. R., Fernyhough, C., de-Wit, L., & Meins, E. (2008). A message in the medium? Assessing the reliability of psychopathology e-questionnaires. *Personality and Individual Differences*, 44, 349–359.
- Joormann, J. (2009). Cognitive aspects of depression. In I. H. Gotlib, & C. L. Hammen (Eds.), *Handbook of depression* (pp. 298–321) (2nd ed.). New York, NY: Guilford Press.
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62, 593–602.
- Kleim, B., Gonzalo, D., & Ehlers, A. (2011). The Depressive Attributions Questionnaire (DAQ): Development of a short self-report measure of depressogenic attributions. *Journal of Psychopathology and Behavioral Assessment*, 33, 375–385.
- Kristensen, T.S. (1995). The demand-control-support model: Methodological challenges for future research. *Stress Medicine*, 11, 17–26.
- Kroenke, K., & Spitzer, R.L. (2002). The PHQ-9: A new depression diagnostic and severity measure. *Psychiatric Annals*, 32, 509–515.
- Langelaa, S., Bakker, A.B., van Doornen, L.J.P., & Schaufeli, W.B. (2006). Burnout and work engagement: Do individual differences make a difference? *Personality and Individual Differences*, 40, 521–532.
- Maslach, C., & Leiter, M.P. (1997). *The truth about burnout*. San Francisco, CA: Jossey Bass.
- Maslach, C., Schaufeli, W.B., & Leiter, M.P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397–422.
- McManus, I.C., Jonvik, H., Richards, P., & Paice, E. (2011). Vocation and avocation: Leisure activities correlate with professional engagement, but not burnout, in a cross-sectional survey of UK doctors. *BMC Medicine*, 9, 100.
- McMullen, M.B., & Krantz, M. (1988). Burnout in day care workers: The effects of learned helplessness and self-esteem. *Child and Youth Care Quarterly*, 17, 275–280.
- Meinck, S., & Rodriguez, M. (2013). Considerations for correlation analysis using clustered data: working with the teacher education and development study in mathematics (TEDS-M) and other international studies. *Large-scale Assessments in Education*, 1, 1–19.
- Michl, L.C., McLaughlin, K.A., Shepherd, K., & Nolen-Hoeksema, S. (2013). Rumination as a mechanism linking stressful life events to symptoms of depression and anxiety: Longitudinal evidence in early adolescents and adults. *Journal of Abnormal Psychology*, 122, 339–352.
- Mor, N., & Winquist, J. (2002). Self-focused attention and negative affect: A meta-analysis. *Psychological Bulletin*, 128(4), 638–662.
- Peterson, C., Maier, S.F., & Seligman, M.E.P. (1993). *Learned helplessness: A theory for the age of personal control*. New York, NY: Oxford University Press.
- Peterson, C., Semmel, A., von Baeyer, C., Abramson, L.Y., Metalsky, G., & Seligman, M.E.P. (1982). The Attributional Style Questionnaire. *Cognitive Therapy and Research*, 6, 287–299.
- Pettersson, A., Bostrom, K.B., Gustavsson, P., & Ekselius, L. (2015). Which instruments to support diagnosis of depression have sufficient accuracy? A systematic review. *Nordic Journal of Psychiatry* in press.
- Philp, M., Egan, S., & Kane, R. (2012). Perfectionism, over commitment to work, and burnout in employees seeking workplace counselling. *Australian Journal of Psychology*, 64, 68–74.
- Pines, A.M. (2004). Adult attachment styles and their relationship to burnout: A preliminary, cross-cultural investigation. *Work and Stress*, 18, 66–80.
- Pizzagalli, D. A. (2014). Depression, stress, and anhedonia: Toward a synthesis and integrated model. *Annual Review of Clinical Psychology*, 10, 393–423.
- Pryce, C.R., Azzinari, D., Spinelli, S., Seifritz, E., Tegethoff, M., & Meinschmidt, G. (2011). Helplessness: A systematic translational review of theory and evidence for its relevance to understanding and treating depression. *Pharmacology & Therapeutics*, 132, 242–267.
- Raudenbush, S.W., & Bryk, A.S. (2001). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Newbury Park, CA: Sage.
- Ritter, P., Lorig, K., Laurent, D., & Matthews, K. (2004). Internet Versus Mailed Questionnaires: A Randomized Comparison. *Journal of Medical Internet Research*, 6, e29.
- Ronen, S., & Baldwin, M.W. (2010). Hypersensitivity to social rejection and perceived stress as mediators between attachment anxiety and future burnout: A prospective analysis. *Applied Psychology*, 59, 380–403.
- Rössler, W., Hengartner, M., Ajdacic-Gross, V., & Angst, J. (2015). Predictors of burnout: Results from a prospective community study. *European Archives of Psychiatry and Clinical Neuroscience*, 265, 19–25.
- Schaufeli, W.B., & Buunk, B.P. (2004). Burnout: An overview of 25 years of research and theorizing. In M.J. Schabracq, J.A.M. Winnubst, & C.L. Cooper (Eds.), *The handbook of work and health psychology* (pp. 383–425) (2nd ed.). Chichester, UK: Wiley.
- Schonfeld, I.S., & Bianchi, R. (2016). Burnout and depression: Two entities or one? *Journal of Clinical Psychology*, 72, 22–37.
- Shirom, A. (2005). Reflections on the study of burnout. *Work and Stress*, 19, 263–270.
- 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, 176–200.
- Slavich, G.M., & Irwin, M.R. (2014). From stress to inflammation and major depressive disorder: A social signal transduction theory of depression. *Psychological Bulletin*, 140(3), 774–815.
- 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, 487–506.
- Tennant, C. (2001). Work-related stress and depressive disorders. *Journal of Psychosomatic Research*, 51, 697–704.
- Toker, S., & Biron, M. (2012). Job burnout and depression: Unraveling their temporal relationship and considering the role of physical activity. *Journal of Applied Psychology*, 97, 699–710.
- 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, 840–847.
- Treynor, W., Gonzalez, R., & Nolen-Hoeksema, S. (2003). Rumination reconsidered: A psychometric analysis. *Cognitive Therapy and Research*, 27, 247–259.
- Wojciechowski, F.L., Strik, J.J.M.H., Falger, P., Lousberg, R., & Honig, A. (2000). The relationship between depressive and vital exhaustion symptomatology post-myocardial infarction. *Acta Psychiatrica Scandinavica*, 102, 359–365.
- World Health Organization (1992). *The ICD-10 classification of mental and behavioural disorders: Clinical descriptions and diagnostic guidelines*. Geneva, Switzerland.