

City University of New York (CUNY)

CUNY Academic Works

Publications and Research

City College of New York

2016

Burnout and depression: Label-related stigma, help-seeking, and syndrome overlap

Renzo Bianchi
Université de Neuchâtel

Jay Verkuilen
CUNY Graduate Center

Romain Brisson
Université de Neuchâtel

Irvin Sam Schonfeld
CUNY Graduate Center

Eric Laurent
Université de Franche-Comté

[How does access to this work benefit you? Let us know!](#)

More information about this work at: https://academicworks.cuny.edu/cc_pubs/320

Discover additional works at: <https://academicworks.cuny.edu>

This work is made publicly available by the City University of New York (CUNY).
Contact: AcademicWorks@cuny.edu



Burnout and depression: Label-related stigma, help-seeking, and syndrome overlap



Renzo Bianchi ^{a,*}, Jay Verkuilen ^b, Romain Brisson ^c, Irvin Sam Schonfeld ^d, Eric Laurent ^e

^a University of Neuchâtel, Institute of Work and Organizational Psychology, Neuchâtel, Switzerland

^b The Graduate Center of the City University of New York, Department of Educational Psychology, New York, NY, USA

^c University of Neuchâtel, Center for Cognitive Science, Neuchâtel, Switzerland

^d The City College of the City University of New York, Department of Psychology, New York, NY, USA

^e Bourgogne Franche-Comté University, Department of Psychology, Besançon, France

ARTICLE INFO

Article history:

Received 3 March 2016

Received in revised form

8 June 2016

Accepted 7 August 2016

Available online 8 August 2016

Keywords:

Burnout
Construct overlap
Depression
Extraversion
Help-seeking
Neuroticism
Self-rated health
Stigma
Stress

ABSTRACT

We investigated whether burnout and depression differed in terms of public stigma and help-seeking attitudes and behaviors. Secondly, we examined the overlap of burnout and depressive symptoms. A total of 1046 French schoolteachers responded to an Internet survey in November–December 2015. The survey included measures of public stigma, help-seeking attitudes and behaviors, burnout and depressive symptoms, self-rated health, neuroticism, extraversion, history of anxiety or depressive disorder, social desirability, and socio-demographic variables. The burnout label appeared to be less stigmatizing than the depression label. In either case, however, fewer than 1% of the participants exhibited stigma scores signaling agreement with the proposed stigmatizing statements. Help-seeking attitudes and behaviors did not differ between burnout and depression. Participants considered burnout and depression similarly worth-treating. A huge overlap was observed between the self-report, time-standardized measures of burnout and depressive symptoms (disattenuated correlation: .91). The overlap was further evidenced in a confirmatory factor analysis. Thus, while burnout and depression as syndromes are unlikely to be distinct, how burnout and depression are socially represented may differ. To our knowledge, this study is the first to compare burnout- and depression-related stigma and help-seeking in the French context. Cross-national, multi-occupational studies examining different facets of stigma are needed.

© 2016 Elsevier Ireland Ltd. All rights reserved.

1. Introduction

Burnout has been characterized as a long-term, negative affective state combining physical fatigue, cognitive weariness, and emotional exhaustion (Shirom and Melamed, 2006; Toker and Biron, 2012). Burnout has been viewed as a product of chronic, unresolvable stress at work (Hobfoll and Shirom, 2001; Maslach et al., 2001) and found to be associated with a variety of adverse health outcomes (e.g., coronary heart disease; Toker et al., 2012). Although not considered a diagnostic category in the latest editions of either the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychiatric Association [APA], 2013) or the *International Classification of Diseases* (ICD-10; World Health Organization, 2016), burnout has been established as a legitimate justification for sick leave in several countries, for example Sweden (Friberg, 2009). Burnout has widely infiltrated the popular culture and has been extensively studied in both psychology and

psychiatry. As an illustration, PubMed currently displays more than 10,000 citations in response to the keyword “burnout.”

Depression is primarily defined by anhedonia and depressed mood (APA, 2013), reflective of a deficit of gratifying/positive experiences and an excess of aversive/negative experiences (Beck and Alford, 2009; Gilbert, 2006; Pryce et al., 2011). Unresolvable stress, which reflects an impossibility of potently dealing with life adversity, constitutes a key depressogenic factor (Gilbert, 2006; Pizzagalli, 2014; Sapolsky, 2015), in the work domain (e.g., Niedhammer et al., 2015; Wang, 2005) as in any domain in which the individual is invested (e.g., the home and family domains, the conjugal and parental roles). Depression is considered a major public health problem affecting an increasing number of individuals (Cuijpers et al., 2014; Kessler et al., 2005).

A growing body of evidence suggests that burnout should be regarded as a depressive syndrome rather than as a distinct entity (Bianchi et al., 2015a, 2015b). Burnout has been shown to overlap with depression in terms of etiology, symptoms, course, cognitive biases, dispositional correlates, and allostatic load (e.g., Ahola et al., 2014; Bianchi and Laurent, 2015; Bianchi and Schonfeld, in press; Bianchi et al., 2015c; Hintsä et al., in press; Schonfeld and

* Corresponding author.

E-mail address: renzo.bianchi@unine.ch (R. Bianchi).

Bianchi, 2016; Wurm et al., 2016). Burnout and depression have both been associated with impaired work performance, absenteeism, and job turnover in past research (Aholu et al., 2008; Bültmann et al., 2006; Lee et al., 2007; Lerner and Henke, 2008; Lerner et al., 2004; Lexis et al., 2009; Swider and Zimmerman, 2010; Toppinen-Tanner et al., 2005; Ybema et al., 2010). While the scientific added value of the burnout construct is currently debated, it is unclear whether the burnout label is useful from a lay medical standpoint, by being less stigmatizing than the depression label. Because the stereotype, prejudice, and discrimination related to stigma add to the burden of illness (Corrigan and Watson, 2002), clarifying whether the burnout label is less stigmatizing than the depression label is important from a health-promoting perspective. Put differently, even if burnout is just another name for depression and is therefore a scientifically and nosologically useless construct, it might be useful to keep the burnout label in medical settings should the burnout label be less stigmatizing than the depression label. Moreover, differences in the social representations associated with burnout and depression may help us understand why burnout has become common currency despite the tenuous foundation on which the construct is built (Bianchi et al., 2015b).

To date, comparative research on the stigma associated with burnout and depression has been scarce. To our knowledge, only three studies addressed this issue thus far, each of them in the German context. Bahlmann et al. (2013) found that the burnout label was associated with less social distancing compared to the depression label, while implying a weaker recommendation for consultation and treatment. The same authors (Bahlmann et al., 2015) observed that conditions viewed as inherited were more often labeled as depression than as burnout whereas conditions viewed as familiar and conditions imputed to work stress were more often labeled as burnout than as depression. It should be noted, however, that a number of other beliefs assessed in the study (e.g., as to whether the afflicted individual is to blame for his/her affliction) were found to be similarly associated with the burnout and depression labels. Lastly, in a study examining managers' reactions towards employees' disclosure of psychiatric and somatic diagnoses, Mendel et al. (2015) found no evidence that burnout might be less stigma-conveying than depression. The focus of Mendel et al.'s (2015) study was on managers' attitudes regarding employees' expected job performance; help-seeking was not assessed.

In the present study, we (a) comparatively examined the stigmatizing character of the burnout and depression labels, (b) assessed whether burnout and depression were differentially related to help-seeking attitudes and behaviors, and (c) evaluated burnout-depression overlap. The study was conducted in the French context. A variety of covariates were considered, including self-rated health, neuroticism, extraversion, social desirability, history of anxiety or depressive disorder, and socio-demographic variables.

The burnout label has been assumed to carry "minimum stigma" (Schaufeli et al., 2009; Shirom, 1989). In parallel, the depression label has been found to be stigmatizing (e.g., Beck et al., 2009). On this basis, we hypothesized that the burnout label would convey less stigma than the depression label. Building on the literature dedicated to the burnout-depression distinction, we expected burnout and depression to represent overlapping syndromes. We considered the investigation of help-seeking in burnout and depression exploratory given the paucity of research on this issue.

2. Methods

2.1. Study participants and data collection

In November and December 2015, educational administrators in three different French geographic areas were contacted and asked to transmit an Internet survey to the teachers working in their schools. Online questionnaires have been shown to be as reliable and valid as traditional, paper-and-pencil questionnaires (Gosling et al., 2004; Jones et al., 2008; Ritter et al., 2004). The survey included measures of burnout- and depression-related public stigma, burnout and depressive symptoms, help-seeking attitudes and behaviors related to burnout and depressive symptoms, self-rated health, neuroticism, extraversion, history of anxiety or depressive disorder, social desirability, and socio-demographic variables. About one half of the administrators were sent a version of the survey designed to assess burnout-related stigma whereas the remaining administrators received a version of the survey designed to assess depression-related stigma. The survey was made available on a voluntary basis and full confidentiality was guaranteed. A total of 1046 teachers completed the survey, 543 in the burnout-label condition, and 503 in the depression-label condition. The characteristics of the study sample as a whole as well as each of the two groups (burnout-label and depression-label) are displayed in Table 1. We note that our recruitment procedure did not allow us to estimate the response rate to our survey. Indeed, the number of teachers who actually received the survey from administrators is not known. The study was conducted in accordance with ethical guidelines of the Declaration of Helsinki (World Medical Association, 2013).

2.2. Measures

Public stigma was assessed with a stigma inventory derived from the questionnaires used by Crisp et al. (2005), Beck et al. (2009), and Schwenk et al. (2010). The inventory comprised 7 items (e.g., "Burnout/Depression is a fake disease"; "Anyone can experience burnout/depression one day"; Cronbach's α : .70). This composite public stigma index was aimed at promoting survey

Table 1
Characteristics of the study sample.

	Burnout-label group (n=543) M (SD)	Depression-label group (n=503) M (SD)	Full sample (N=1046) M (SD)
Burnout symptoms (0–3)	1.06 (.73)	.96 (.72)	1.01 (.73)
Depressive symptoms (0–3)	.98 (.62)	.91 (.61)	.95 (.62)
Self-rated health (1–7)	5.10 (1.24)	5.29 (1.15)	5.20 (1.20)
Stigma (1–5)	1.73 (.50)	1.86 (.50)	1.80 (.50)
Neuroticism (0–4)	2.02 (.73)	1.92 (.75)	1.97 (.74)
Extraversion (0–4)	2.44 (.53)	2.46 (.53)	2.45 (.53)
Sex (0/1)	.17 (.38)	.17 (.37)	.17 (.38)
Age (in years)	41.59 (9.39)	42.65 (9.46)	42.10 (9.43)
Length of employment (in years)	15.59 (9.55)	16.20 (9.52)	15.88 (9.54)
Conjugal/romantic relationship (0/1)	.87 (.33)	.82 (.38)	.85 (.36)
History of anxiety/depressive disorder (0/1)	.40 (.49)	.38 (.49)	.39 (.49)
Social desirability (0–1)	.45 (.30)	.48 (.30)	.46 (.30)
Consultation importance (1–7)	6.50 (.95)	6.47 (.97)	6.49 (.96)
Recommendation for consultation (1–7)	6.59 (.86)	6.57 (.91)	6.58 (.88)

Note – Sex was coded 0 for "female" and 1 for "male." Conjugal/romantic relationship and history of anxiety/depressive disorder were coded 0 for "absence" and 1 for "presence."

conciseness as well as adjustment to the conditions of interest (burnout and depression) and study population (schoolteachers). Two versions of the inventory were used in the study. The two versions differed in only one respect. The stigmatizing statements targeted burnout in the first version and depression in the second one. The inventory is presented in the Appendix section of this article.

The stigma inventory was followed by two items assessing the importance of consulting a health professional when an individual is burned out or depressed and the perceived need to recommend such a consultation. The first item was: “Is it important to consult a health professional if one suffers from burnout/depression?” (1–7 scale, from *not important at all* to *very important*). The second item was: “Would you urge a close relative or a friend to consult a health professional if that close relative or friend appeared to be burned out/depressed?” (1–7 scale, from *in no case* to *without hesitation*). In the burnout-label condition, the two items targeted burnout whereas in the depression-label condition, the two items targeted depression.

Depressive symptoms were assessed with the 9-item depression module of the Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001; Cronbach's α : .86). The PHQ-9 allows for the assessment of the depressive symptoms experienced by the respondent over the last two weeks, based on a 4-point scale (from 0 for *not at all* to 3 for *nearly every day*). The PHQ-9 targets the nine diagnostic criteria for major depressive episode of the DSM-5 (American Psychiatric Association, 2013).

Burnout symptoms were assessed with the 14-item version of the Shirom-Melamed Burnout Measure (SMBM; Toker et al., 2012; Cronbach's α : .95). The SMBM comprises three dimensions: physical fatigue (6 items; e.g., “I feel physically drained”; Cronbach's α : .94), cognitive weariness (5 items; e.g., “I have difficulty concentrating”; Cronbach's α : .96), and emotional exhaustion (3 items; e.g., “I feel I am unable to be sensitive to the needs of coworkers and students”; Cronbach's α : .89). In order to enhance the validity of the comparisons between burnout and depression, we standardized the time window within which the two entities were assessed. The response frame of the PHQ-9 (4-point scale from 0 for *not at all* to 3 for *nearly every day*) was thus used for assessing both depression and burnout. The SMBM is one of the most widely used instruments for the measurement of burnout (Shirom and Melamed, 2006; Toker and Biron, 2012).

The PHQ-9 and the SMBM were both followed by two items assessing health-seeking behaviors and intentions in relation to the reported depressive and burnout symptoms. The first item was: “Did you consult a health professional (e.g., a physician, a psychologist or a psychotherapist) over the last 12 months regarding the problems you may have reported in the above questionnaire?” The second item was: “Do you plan to consult a health professional (e.g., a physician, a psychologist or a psychotherapist) regarding the problems you may have reported in the above questionnaire?” Through those items, participants were questioned about the help-seeking behaviors and intentions triggered by their own depressive and burnout symptoms.

The NEO Five-Factor Inventory (NEO-FFI; Costa and McCrae, 1992; Rolland et al., 1998) was used for assessing neuroticism (12 items; Cronbach's α : .85) and extraversion (12 items; Cronbach's α : .76). Participants are asked to respond based on a 5-point scale (from 0 for *strongly disagree* to 4 for *strongly agree*). The NEO-FFI is an instrument of reference for the measurement of the Big Five personality traits (McCrae and Costa, 2004).

Social desirability was assessed with three items extracted from the Marlowe-Crowne Social Desirability Scale (Crowne and Marlowe, 1960): (1) “I have never intensely disliked anyone.”; (2) “No matter who I'm talking to, I'm always a good listener.”; (3) “I'm always willing to admit it when I make a mistake.”. Participants

responded using a “True/False” scale. The three items were disseminated throughout the survey in order to reduce the probability that their purpose be identified by respondents.

Finally, participants responded to a socio-demographic (sex, age, length of employment, involvement in a conjugal/romantic relationship) and health (self-rated health and history of anxiety or depressive disorder) questionnaire. Self-rated health was assessed with a single item (see Eriksson et al., 2001): “How would you rate your general health status?” Participants responded using a 1–7 scale (from “very bad health” to “very good health”). History of anxiety or depressive disorder was assessed with the following “Yes/No” item: “Have you ever been diagnosed for an anxiety or a depressive disorder (by a physician, a psychologist or a psychiatrist)? Answer ‘Yes’ only if this diagnosis has resulted in psychotherapeutic treatment and/or treatment with medication.” The second part of the item was intended to limit the risk of false-positive report.

2.3. Data analyses

The data were processed using analysis of variance (ANOVA), analysis of covariance, and correlation analysis. Thus, both categorical and dimensional analyses were carried out. The label of interest (burnout versus depression) was the independent variable in categorical analyses.

In the interest of further examining the relationship of burnout to depression, we conducted a confirmatory factor analysis (CFA) involving the latent variables implied by the PHQ-9 and the SMBM. To address the fact that these data come from Likert scales, we used maximum likelihood estimation with the Satorra-Bentler correction found in Mplus 7.3 (Muthén and Muthén, 1998–2015). Satorra-Bentler corrects the standard errors and chi square for violations of multivariate normality. It also corrects derived fit statistics based on the chi square.

3. Results

A first ANOVA showed that the burnout label ($M=1.73$, $SD=.50$) was associated with a weaker stigma score than the depression label ($M=1.86$, $SD=.50$), $F(1, 1044)=16.87$, $p<.001$, partial $\eta^2=.02$. The observed effect remained statistically significant controlling (either separately or simultaneously) for burnout and depressive symptoms, self-rated health, neuroticism, extraversion, social desirability, history of anxiety or depressive disorder, and socio-demographic variables. Only .80% of the participants in the depression-label group (4/503) exhibited mean stigma scores signaling agreement with the stigmatizing statements (i.e., mean stigma scores above 3). In the burnout-label group, this percentage was .55 (3/543).

Two other ANOVAs revealed that participants (a) assigned equivalent importance to consulting a health professional in case of burnout ($M=6.50$, $SD=.95$) and in case of depression ($M=6.47$, $SD=.97$), $F(1, 1044)=.40$, $p=.53$, and (b) similarly recommended that a health professional be consulted in case of burnout ($M=6.59$, $SD=.86$) and in case of depression ($M=6.57$, $SD=.91$), $F(1, 1044)=.12$, $p=.73$. The absence of a between-group difference remained controlling for the earlier-mentioned covariates. Only 1.39% of the participants in the depression-label group (7/503) and 1.10% of the participants in the burnout-label group (6/543) considered consultation *unimportant*. About 5.17% of the participants in the depression-label group (26/503) and 4.97% of the participants in the burnout-label group (27/543) had no opinion about the question. Similar results were obtained regarding recommendation for consultation. Only 1.79% of the participants would not have urged a close relative or a friend to consult a

Table 2
Correlations among the main study variables.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Burnout symptoms	–	.84	–.47	–.03	.55	–.27	.02	.08	.10	–.05	.23	–.14	–.09	–.09
2. Depressive symptoms	.81	–	–.49	–.01	.59	–.21	.02	.03	.03	–.09	.24	–.14	–.15	–.14
3. Self-rated health	–.44	–.52	–	.00	–.44	.26	–.05	–.03	–.03	.07	–.17	.15	.16	.15
4. Stigma	–.04	.02	.01	–	.07	–.09	.06	.02	.04	–.10	–.10	–.05	–.23	–.22
5. Neuroticism	.56	.63	–.44	.03	–	–.34	–.06	–.05	.01	–.07	.28	–.24	–.16	–.11
6. Extraversion	–.35	–.30	.26	–.11	–.41	–	–.10	–.15	–.13	.03	–.07	.11	.17	.12
7. Sex	–.02	–.04	.01	.10	–.10	–.17	–	.03	–.00	.10	–.09	–.13	–.13	–.15
8. Age	.09	.06	–.06	–.00	–.05	–.12	.08	–	.80	–.02	.06	.06	.04	.05
9. Length of employment	.08	.06	–.02	.01	–.02	–.10	.06	.86	–	.01	.07	–.00	.04	.02
10. Conjugal/romantic relationship	–.07	–.07	.10	.03	–.01	.01	–.04	–.05	–.05	–	–.13	–.01	–.01	–.00
11. History of anxiety/depressive disorder	.23	.27	–.21	–.13	.34	–.11	–.07	.14	.10	–.08	–	–.04	.05	.04
12. Social desirability	–.12	–.12	.08	–.04	–.16	.13	–.00	.10	.10	.04	–.01	–	.11	.12
13. Consultation importance	–.08	–.09	.08	–.25	–.04	.09	–.14	.02	–.02	–.03	.11	.08	–	.73
14. Recommendation for consultation	–.05	–.06	.06	–.21	–.01	.11	–.13	–.02	–.05	.02	.14	.14	.74	–

Notes – Entries below the diagonal concern the burnout-label group (n=543); entries above the diagonal concern the depression-label group (n=503). Non-significant correlation coefficients are italicized. Stigma, consultation importance, and recommendation for consultation were related to burnout in the burnout-label group and related to depression in the depression-label group.

health professional for depression (9/503; about 2.98% of the participants [15/503] had no opinion about the question). This percentage was 1.10 for burnout (6/543; about 2.95% of the participants [16/543] had no opinion about the question).

In both the burnout-label and the depression-label group, stigma was negatively correlated with consultation importance ($r = -.25$ and $r = -.23$, respectively, $ps < .001$) and recommendation for consultation ($r = -.21$ and $r = -.22$, respectively, $ps < .001$). Consultation importance and recommendation for consultation were strongly associated with one another in both the burnout-label group, $r = .74$, $p < .001$, and the depression-label group, $r = .73$, $p < .001$.

Burnout and depressive symptoms were found to be very strongly correlated, $r = .83$, $p < .001$. When corrected for attenuation, the correlation between the two variables reached .91. Self-rated health, neuroticism, extraversion, and history of anxiety or depressive disorder were each similarly correlated with burnout and depression (Table 2).

As displayed in Table 3, burnout and depressive symptoms were associated with 12-month help-seeking behaviors and intentions to seek help in the future to a similar extent.

In view of the large overlap of burnout with depression, we examined the correlations between each of the three dimensions of burnout (physical fatigue, cognitive weariness, and emotional exhaustion) and depressive symptoms (Table 4). The mean correlation among the three dimensions of burnout ($r = .61$; computed from .71, .58, and .55) was weaker than the mean correlation of the three dimensions of burnout with depressive symptoms ($r = .70$; computed from .77, .74, and .59).

To further investigate the relationship between burnout and

Table 3
Correlations between (a) reported burnout symptoms and help-seeking for burnout symptoms, and (b) reported depressive symptoms and help-seeking for depressive symptoms (N=1046).

	Help-seeking behavior for burnout symptoms	Help-seeking intention for burnout symptoms	Help-seeking behavior for depressive symptoms	Help-seeking intention for depressive symptoms
Burnout symptoms	.36	.42	–	–
Depressive symptoms	–	–	.37	.42

Notes – All correlation coefficients are significant at $p < .001$. Help-seeking behavior and help-seeking intention were coded 0 for “absence” and 1 for “presence.”

Table 4
Correlations between each of the three dimensions of burnout as assessed with the Shirom-Melamed Burnout Measure and depressive symptoms as assessed with the 9-item depression module of the Patient Health Questionnaire (N=1046).

	Cognitive weariness	Emotional exhaustion	Depressive symptoms
Physical fatigue	.71	.55	.77
Cognitive weariness	–	.58	.74
Emotional exhaustion	–	–	.59

Note – All correlation coefficients are significant at $p < .001$.

depressive symptoms, we used the following procedure, in accordance with recommendations in McDonald (1999) and McDonald and Ho (2002). We fitted the CFA model implied by the scales. This model included four latent variables: depression (DEP; PHQ-9 items 1–9); physical fatigue (PF; SMBM items 1–6); cognitive weariness (CW; SMBM items 7–11); and emotional exhaustion (EE; SMBM items 12–14).

The four-factor model converged rapidly to a proper solution involving no Heywood case (SB Scaling = 1.27; RMSEA = 0.068; CFI = 0.926; TLI = 0.917; SRMR = 0.051). The fit of this model, although reasonable, was not completely acceptable. We thus tentatively and cautiously interpret it. In particular, we note that the correlation among latent variables was quite high, with the DEP latent variable correlating as high or higher with the PF, CW, and EE latent variables than these three latent variables correlated with each other (see Table 5; factor loadings for the models are available as online supplemental materials).

To deal with the misfit in the pure four-factor CFA, we revised the model paying attention to cross-loadings and doublets, which were created by items with related content. Two items had substantial misfit with blocks of items in another factor. For example, the fourth item of the PHQ-9 (related to fatigue) had large positive covariance residuals with all PF items. We allowed it to cross-load

Table 5
Correlations among the latent variables in the initial four-factor model.

	CW	EE	DEP
PF	.73	.55	.85
CW	–	.61	.80
EE	–	–	.67

Note – PF = physical fatigue latent factor; CW = cognitive weariness latent factor; EE = emotional exhaustion latent factor; DEP = depression latent factor.

Table 6
Correlations among the latent variables in the revised four-factor model (doublets and cross-loadings incorporated).

	CW	EE	DEP
PF	.72	.54	.80
CW		.61	.77
EE			.68

Note – PF = physical fatigue latent factor; CW = cognitive weariness latent factor; EE = emotional exhaustion latent factor; DEP = depression latent factor.

with PF; its resulting loading was, in fact, larger with the PF factor than with the DEP factor. Doublets refer to pairs of items that correlate more strongly than is consistent with a factor. For instance, the seventh (altered cognitive activity) and eighth (psychomotor slowness/agitation) items of the PHQ-9 both refer to impairments that are likely to intersect more strongly than would be predicted by the factor structure. To address this concern, we correlated the residuals of such pairs of ill-fitting items. This revised model fit much better than the previous one (SB Scaling = 1.26; RMSEA = .048; CFI = .965; TLI = .959; SRMR = .037). Despite our revision, the general story of the factor correlations did not change markedly: The DEP latent variable was still more strongly correlated with the PF, CW, and EE latent variables than the latter three latent variables correlated with each other (see Table 6).

Finally, to ensure that we did not miss anything important, we ran an exploratory factor analysis using oblique geomin rotation with five factors. The four-factor solution essentially reproduced the four-factor model and a fifth factor was weak with only very small loadings. Because the rotation was oblique, factor correlations were obtained. The correlations were very similar to the correlations obtained in the revised model, as were the loadings. This finding gives us confidence that the revised model is satisfactory.

4. Discussion

The present study was conducted in France and involved a sample of 1046 schoolteachers. Its main objectives were to (a) compare the stigmatizing character of the burnout and depression labels, (b) assess whether burnout and depression were differentially related to help-seeking attitudes and behaviors, and (c) address the issue of burnout-depression overlap.

An effect of the label of interest (burnout versus depression) on participants' ratings of public stigma was detected. This label effect, however, was small (explained variance: 2%). The levels of stigma associated with both the burnout and the depression label appeared to be relatively low. Indeed, fewer than 1% of the participants in both the burnout-label and the depression-label group exhibited a stigma score signaling agreement with the proposed stigmatizing statements. The practical implications of the observed difference in stigma scores between the burnout and depression labels are therefore unclear. This being noted, our results are to some extent consistent with those of Bahlmann et al. (2013), who found clues that the burnout label is less stigmatizing than the depression label.

Our observation that the depression label carried little stigma apparently contrasts with the findings from past European research (e.g., Crisp et al., 2005) and, more specifically, from research conducted in France. Beck et al. (2009), reporting the results from a study carried out in 2005 and involving a sample representative of the French general population aged 15–75, concluded that nearly 20% of the respondents had stigmatizing opinions about depressed individuals. It is worth noting, however, that these

stigmatizing opinions were found to be specifically expressed by the youngest and oldest respondents and by respondents with low levels of education. These two points may explain the discrepancy between the results reported by Beck et al. (2009) and our results. Indeed, our sample comprised teachers, that is, individuals with relatively high levels of education. In addition, the fact that our sample only included working individuals limited the age range of the respondents between narrower boundaries—21–64 compared to 15–75 in Beck et al.'s (2009) study. Thus, the differences in the obtained results may reflect differences in the characteristics of the study samples.

Alternately, it could be hypothesized that the stigma associated with depression has abated over the last years in France. Indeed, as socially-produced beliefs, stigmas are dynamic entities that can change over time (e.g., weaken or strengthen, appear or disappear) as social contexts evolve (Angermeyer et al., 2014; Evans-Lacko et al., 2013). Whether such a hypothesis can be formulated confidently in the present case is nevertheless unclear given that, although alterable, stigmas tend to show decade-long inertia (Angermeyer et al., 2014; Angermeyer et al., 2013; Roelandt et al., 2010). With regard to burnout, our results are consistent with the long-formulated assumption that the burnout label carries “minimum stigma” (Schaufeli et al., 2009; Shirom, 1989).

Participants similarly prescribed that a health professional be consulted in the case of burnout and in the case of depression, suggesting that burnout and depression were viewed as conditions that equally call for treatment. In addition, the burnout and depressive symptoms reported by the participants were similarly associated with (a) help-seeking behaviors over the last 12 months and (b) intentions to seek help in the future (Table 3). These findings further question the practical implications of the slight difference in stigma that we observed between the burnout and depression labels. Our results differ from those reported by Bahlmann et al. (2013), who found that burnout was associated with a weaker recommendation for consultation and treatment. Between-study differences in employed measures, target populations, and countries of interest may account for these discrepancies. However, more research is needed to clarify the question.

Consistent with the results of an increasing number of studies (e.g., Ahola et al., 2014; Schonfeld and Bianchi, 2016; Wurm et al., 2016), our findings indicated substantial overlap of burnout with depression. First, we observed a disattenuated correlation of .91 between burnout and depression, suggestive of empirical redundancy between the two constructs (Cole et al., 2012; Le et al., 2010). Associations of such a magnitude are likely to be found when correlating two measures of burnout (e.g., Shirom and Melamed, 2006) or two measures of depression (e.g., Kung et al., 2013), in other words, two measures of the same construct. It is noteworthy that the burnout-depression correlation found in the present study is somewhat stronger than the correlations usually reported in research on burnout and depression (see Bianchi et al., 2015a). Our assessment of burnout and depression within the same time window may be critical to explaining this discrepancy. Indeed, burnout and depression are ordinarily assessed within different time frames. Burnout is most frequently assessed on an annual basis (with the Maslach Burnout Inventory) or a monthly basis (with the SMBM) whereas depression is generally assessed over a one-week period (e.g., with the Center for Epidemiologic Studies Depression Scale) or a two-week period (e.g., with the PHQ-9). This state of affairs may have resulted in an underestimation of burnout-depression overlap in many past studies. Second, the correlations of burnout and depression with the other variables under scrutiny—including self-rated health, neuroticism, extraversion, and history of anxiety or depressive disorder—were very similar (Table 2). Incidentally, our finding that neuroticism

and extraversion were each similarly correlated with burnout and depression does not support the view that personality plays a greater role in depression than in burnout (Melchers et al., 2015). Third, the three dimensions of burnout (physical fatigue, cognitive weariness, and emotional exhaustion) were found to be less strongly correlated with each other than with depressive symptoms (Table 4). The correlations among factors obtained in a CFA (see Tables 5 and 6) are consistent with the correlations obtained with the raw scales: the latent depression factor tended to be more highly correlated with the latent physical fatigue, cognitive weariness, and emotional exhaustion factors than the latter three factors were correlated with each other. Such results suggest that depressive symptoms occupy a *central place* in the burnout syndrome (see also Bianchi et al., 2015c). Taken together, these results support the view that burnout is part of the spectrum of depression.

Overall, our findings indicate that burnout and depression may not be distinct at a nosological level—i.e., when considered as syndromes—but may differ in terms of social representations—when considered as labels. This double point might be critical for understanding the “success” of burnout and the rapid appropriation of the notion by many workers and medical practitioners. The less-stigmatizing character of the burnout label may have derived from the belief that burnout is more of an exogenous condition than depression (Maslach et al., 2001). Indeed, this belief promotes a focus on the environment of the affected individuals rather than on the affected individuals themselves, thus reducing the probability that the affected individuals be “personally blamed” for their condition. We note, however, that while this belief is still discernible in the general public (Bahlmann et al., 2015), it may have become less influential. Recent studies carried out in France suggest that about two of three individuals view depression as a “social problem” (Beck et al., 2009) and about 80% consider work stress a possible cause of depression (Angermeyer et al., 2013).

The present study has at least five limitations. First, the representativeness of our study sample vis-à-vis its reference population (French schoolteachers) is unknown. By implication, we cannot rule out the possibility that schoolteachers with more stigmatizing views of burnout and/or depression may have been less prone to responding to the survey. Although we controlled for social desirability, replication studies involving representative samples are needed. Second, only one occupational group was examined (schoolteachers), in only one country (France), which restricts the external validity of the study. It should be underscored that schoolteachers constitute a highly specific occupational group, notably because of their relatively high level of education and of their roles as models for citizenship and scholarship. Third, we mainly focused in this study on the *public*

dimension of stigma; however, stigma has other facets (e.g., self-stigma; see Corrigan et al., 2014). Their investigation should be high on researchers’ agenda. Fourth, we relied on a composite index of public stigma derived from three previously-used stigma questionnaires (Beck et al., 2009; Crisp et al., 2005; Schwenk et al., 2010) in order to promote conciseness and fitness to the specific conditions (burnout and depression) and population (schoolteachers) under consideration. However, this choice limits our knowledge of the psychometric properties of the employed measure. Fifth, help-seeking *behavior* was inferred based on self-report. Research relying on alternative sources of information (e.g., medical records) would be useful.

In this study, the burnout label appeared to be a little less stigmatizing than the depression label. Both labels, however, carried relatively low levels of stigma. Help-seeking attitudes and behaviors were not found to differ between burnout and depression. Additionally, our results suggest overlap of burnout and depressive symptoms. Thus, while burnout and depression *as syndromes* may not be distinct, burnout and depression *as labels* may be associated with different social representations. This being noted, our findings that (a) both the burnout and the depression labels carried limited stigma and (b) help-seeking attitudes/behaviors did not differ between burnout and depression do not plead for a promotion of the use of the burnout label in place of or in addition to the depression label. Tentatively, these findings rather suggest that burnout may not be more useful from a lay medical standpoint than from a scientific standpoint, in reference to the current debate on burnout-depression overlap (Bianchi et al., 2015b). This view is consistent with the observation that depression is more and more regarded as a stress-related and social phenomenon among the general public (Angermeyer et al., 2013; Beck et al., 2009). Cross-national, multi-occupational studies are needed in order to further address the issue of burnout- and depression-related stigma. Great attention should be paid to occupation-correlated factors such as education and socio-economic status in future research, given the association of these factors with mental illness stigma (Corrigan et al., 2012; Evans-Lacko et al., 2013).

In a recent official report, the *Académie Nationale de Médecine*—a public health institution of reference in France—concluded that the expansion of the use of the term “burnout” was a source of confusion because of the nosological vagueness of the notion (Académie Nationale de Médecine, 2016). By learning more about how stigma weighs upon the burnout and depression labels, researchers could further determine whether encouraging the use of the burnout label is of any relevance in terms of public health, aside from the problem of the *scientific* and *nosological* utility of the burnout construct.

Table A1

The seven items of the stigma inventory, in the original French version and in a version translated into English. Depending on the condition (burnout-label versus depression-label), either the term “burnout” or the term “depression” was used in each of the seven items. The items were rated using a one-to-five scale (1 = strongly disagree; 2 = disagree; 3 = no opinion; 4 = agree; 5 = strongly agree).

French version	English version
1. Une personne en burnout/dépression ne peut blâmer qu'elle-même pour ce qui lui arrive.	A burned out/depressed individual can only blame him/herself for what happens to him/her.
2. N'importe qui peut faire un(e) burnout/dépression un jour.	Anyone can experience burnout/depression one day.
3. Au lieu de se plaindre, une personne en burnout/dépression devrait se ressaisir et se responsabiliser.	Instead of complaining, a burnout out/depressed individual should pull him/herself together and be responsible for him/herself.
4. Il faudrait faire plus pour prendre en charge les personnes en burnout/dépression.	More should be done to take care of individuals with burnout/depression.
5. Chercher à aider une personne en burnout/dépression est une perte de temps.	Seeking to help a burned out/depressed individual is a waste of time.
6. Le/La burnout/dépression est une « fausse » maladie.	Burnout/Depression is a “fake” disease.
7. Il est important d'apporter son soutien à une personne en burnout/dépression.	It is important to support someone with burnout/depression.

Acknowledgment

The authors thank Jean-Pierre Rolland for his help with the NEO Five-Factor Inventory.

Appendix A

See Table A1.

References

- Académie Nationale de Médecine, 2016. Le Burn-Out. Académie Nationale de Médecine, Paris, France.
- Ahola, K., Hakonen, J., Perhoniemi, R., Mutanen, P., 2014. Relationship between burnout and depressive symptoms: a study using the person-centred approach. *Burn. Res.* 1, 29–37.
- Ahola, K., Kivimäki, M., Honkonen, T., Virtanen, M., Koskinen, S., Vahtera, J., et al., 2008. Occupational burnout and medically certified sickness absence: a population-based study of Finnish employees. *J. Psychosom. Res.* 64, 185–193.
- American Psychiatric Association, 2013. Diagnostic and Statistical Manual of Mental Disorders, 5th ed. APA, Washington, DC.
- Angermeyer, M.C., Matschinger, H., Carta, M.G., Schomerus, G., 2014. Changes in the perception of mental illness stigma in Germany over the last two decades. *Eur. Psychiatry* 29, 390–395.
- Angermeyer, M.C., Millier, A., Rémozat, C., Refaï, T., Toumi, M., 2013. Attitudes and beliefs of the French public about schizophrenia and major depression: Results from a vignette-based population survey. *BMC Psychiatry* 13, 1–12.
- Bahlmann, J., Angermeyer, M.C., Schomerus, G., 2013. "Burnout" statt "Depression" – eine Strategie zur Vermeidung von Stigma? [Calling it "burnout" instead of "depression" – a strategy to avoid stigma?]. *Psychiatr. Prax.* 40, 78–82.
- Bahlmann, J., Schomerus, G., Angermeyer, M.C., 2015. Nicht ganz dasselbe: Krankheitsvorstellungen von Burnout und Depression in der Allgemeinbevölkerung. [Not quite the same: Illness beliefs regarding burnout and depression among the general population]. *Psychiatr. Prax.* 42, 443–447.
- Beck, A.T., Alford, B.A., 2009. Depression: Causes and Treatment, 2nd ed. University of Pennsylvania Press, Philadelphia, PA.
- Beck, F., Guignard, R., Rolland Du Roscoat, E., Briffault, X., 2009. Attitudes et opinions vis-à-vis de la dépression. In: Chan Chee, C., Beck, F., Sapinho, D., Guilbert, P. (Eds.), *La Dépression en France (Enquête Anadep) 2005*. INPES, Saint-Denis, France, pp. 119–140.
- Bianchi, R., Laurent, E., 2015. Emotional information processing in depression and burnout: an eye-tracking study. *Eur. Arch. Psychiatry Clin. Neurosci.* 265, 27–34.
- Bianchi, R., Schonfeld, I.S., 2016. Burnout is associated with a depressive cognitive style. *Personal. Individ. Differ.* (in press)
- Bianchi, R., Schonfeld, I.S., Laurent, E., 2015a. Burnout–depression overlap: a review. *Clin. Psychol. Rev.* 36, 28–41.
- Bianchi, R., Schonfeld, I.S., Laurent, E., 2015b. Is it time to consider the "burnout syndrome" a distinct illness? *Front. Public Health* 3, 158.
- Bianchi, R., Schonfeld, I.S., Laurent, E., 2015c. Is burnout separable from depression in cluster analysis? A longitudinal study. *Soc. Psychiatry Psychiatr. Epidemiol.* 50, 1005–1011.
- Bültmann, U., Rugulies, R., Lund, T., Christensen, K., Labriola, M., Burr, H., 2006. Depressive symptoms and the risk of long-term sickness absence. *Soc. Psychiatry Psychiatr. Epidemiol.* 41, 875–880.
- Cole, M.S., Walter, F., Bedeian, A.G., O'Boyle, E.H., 2012. Job burnout and employee engagement: a meta-analytic examination of construct proliferation. *J. Manag.* 38, 1550–1581.
- Corrigan, P.W., Druss, B.G., Perlick, D.A., 2014. The impact of mental illness stigma on seeking and participating in mental health care. *Psychol. Sci. Public Interest* 15, 37–70.
- Corrigan, P.W., Morris, S.B., Michaels, P.J., Rafacz, J.D., Rusch, N., 2012. Challenging the public stigma of mental illness: a meta-analysis of outcome studies. *Psychiatr. Serv.* 63, 963–973.
- Corrigan, P.W., Watson, A.C., 2002. Understanding the impact of stigma on people with mental illness. *World Psychiatry* 1, 16–20.
- Costa Jr., P.T., McCrae, R.R., 1992. Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) Professional Manual. Psychological Assessment Resources, Odessa, FL.
- Crisp, A., Gelder, M., Goddard, E., Meltzer, H., 2005. Stigmatization of people with mental illnesses: a follow-up study within the Changing Minds campaign of the Royal College of Psychiatrists. *World Psychiatry* 4, 106–113.
- Crowne, D.P., Marlowe, D., 1960. A new scale of social desirability independent of psychopathology. *J. Consult. Psychol.* 24, 349–354.
- Cuijpers, P., Vogelzangs, N., Twisk, J., Kleiboer, A., Li, J., Penninx, B.W., 2014. Comprehensive meta-analysis of excess mortality in depression in the general community versus patients with specific illnesses. *Am. J. Psychiatry* 171, 453–462.
- Eriksson, I., Unden, A.L., Elofsson, S., 2001. Self-rated health. Comparisons between three different measures. Results from a population study. *Int. J. Epidemiol.* 30, 326–333.
- Evans-Lacko, S., Henderson, C., Thornicroft, G., 2013. Public knowledge, attitudes and behaviour regarding people with mental illness in England 2009–2012. *Br. J. Psychiatry (Suppl. 55)*, s51–s57.
- Friberg, T., 2009. Burnout: from popular culture to psychiatric diagnosis in Sweden. *Cult. Med. Psychiatry* 33, 538–558.
- Gilbert, P., 2006. Evolution and depression: issues and implications. *Psychol. Med.* 36, 287–297.
- 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. *Am. Psychol.* 59, 93–104.
- Hintsala, T., Elovainio, M., Jokela, M., Ahola, K., Virtanen, M., Pirkola, S., 2016. Is there an independent association between burnout and increased allostatic load? Testing the contribution of psychological distress and depression. *J. Health Psychol.* 21, 1576–1586.
- Hobfoll, S.E., Shirom, A., 2001. Conservation of resources theory: Applications to stress and management in the workplace. In: Golembiewski, R.T. (Ed.), *Handbook of Organizational Behavior*, 2nd ed. Marcel Dekker, New York, NY, pp. 57–80.
- Jones, S.R., Fernyhough, C., de-Wit, L., Meins, E., 2008. A message in the medium? Assessing the reliability of psychopathology e-questionnaires. *Persnol. Individ. Differ.* 44, 349–359.
- 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. *Arch. Gen. Psychiatry* 62, 593–602.
- Kroenke, K., Spitzer, R.L., Williams, J.B.W., 2001. The PHQ-9: validity of a brief depression severity measure. *J. Gen. Intern. Med.* 16, 606–613.
- Kung, S., Alarcon, R.D., Williams, M.D., Poppe, K.A., Jo Moore, M., Frye, M.A., 2013. Comparing the Beck Depression Inventory-II (BDI-II) and Patient Health Questionnaire (PHQ-9) depression measures in an integrated mood disorders practice. *J. Affect. Disord.* 145, 341–343.
- 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. *Organ. Behav. Hum. Decis. Process.* 112, 112–125.
- Lee, S., Tsang, A., Kwok, K., 2007. Stress and mental disorders in a representative sample of teachers during education reform in Hong Kong. *J. Psychol. Chin. Soc.* 8, 159–178.
- Lerner, D., Adler, D.A., Chang, H., Lapitsky, L., Hood, M.Y., Perissinotto, C., et al., 2004. Unemployment, job retention, and productivity loss among employees with depression. *Psychiatr. Serv.* 55, 1371–1378.
- Lerner, D., Henke, R.M., 2008. What does research tell us about depression, job performance, and work productivity? *J. Occup. Environ. Med.* 50, 401–410.
- Lexis, M.A.S., Jansen, N.W.H., van Amelsvoort, L.G.P.M., van den Brandt, P.A., Kant, I., 2009. Depressive complaints as a predictor of sickness absence among the working population. *J. Occup. Environ. Med.* 51, 887–895.
- Maslach, C., Schaufeli, W.B., Leiter, M.P., 2001. Job burnout. *Annu. Rev. Psychol.* 52, 397–422.
- McCrae, R.R., Costa Jr., P.T., 2004. A contemplated revision of the NEO five-factor inventory. *Pers. Individ. Dif.* 36, 587–596.
- McDonald, R.P., 1999. *Test Theory: A Unified Treatment*. Lawrence Erlbaum Associates, Mahwah, NJ.
- McDonald, R.P., Ho, M.-H.R., 2002. Principles and practice in reporting structural equation analyses. *Psychol. Methods* 7, 64–82.
- Melchers, M.C., Plieger, T., Meermann, R., Reuter, M., 2015. Differentiating burnout from depression: personality matters! *Front. Psychiatry* 6, 113.
- Mendel, R., Kissling, W., Reichhart, T., Buhner, M., Hamann, J., 2015. Managers' reactions towards employees' disclosure of psychiatric or somatic diagnoses. *Epidemiol. Psychiatr. Sci.* 24, 146–149.
- Muthén, L.K., Muthén, B.O., 1998–2015. *Mplus User's Guide*, 7th ed. Muthén and Muthén, Los Angeles, CA.
- Niedhammer, I., Malard, L., Chastang, J.F., 2015. Occupational factors and subsequent major depressive and generalized anxiety disorders in the prospective French national SIP study. *BMC Public Health* 15, 200.
- Pizzagalli, D.A., 2014. Depression, stress, and anhedonia: toward a synthesis and integrated model. *Annu. Rev. Clin. Psychol.* 10, 393–423.
- Pryce, C.R., Azzinnari, 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. *Pharmacol. Ther.* 132, 242–267.
- Ritter, P., Lorig, K., Laurent, D., Matthews, K., 2004. Internet versus mailed questionnaires: a randomized comparison. *J. Med. Internet Res.* 6, e29.
- Roelandt, J.L., Caria, A., Defromont, J., Vandeborre, A., Daumerie, N., 2010. Représentations sociales du "fou", du "malade mental" et du "dépressif" en population générale en France. [Representations of insanity, mental illness and depression in general population in France]. *Encephale* 36, 7–13.
- Rolland, J.-P., Parker, W.D., Stumpf, H., 1998. A psychometric examination of the French translations of NEO-PI-R and NEO-FFI. *J. Personal. Assess.* 71, 269–291.
- Sapolsky, R.M., 2015. Stress and the brain: individual variability and the inverted-U. *Nat. Neurosci.* 18, 1344–1346.
- Schaufeli, W.B., Leiter, M.P., Maslach, C., 2009. Burnout: 35 years of research and practice. *Career Dev. Int.* 14, 204–220.
- Schonfeld, I.S., Bianchi, R., 2016. Burnout and depression: two entities or one? *J. Clin. Psychol.* 72, 22–37.
- Schwenk, T.L., Davis, L., Wimsatt, L.A., 2010. Depression, stigma, and suicidal ideation in medical students. *J. Am. Med. Assoc.* 304, 1181–1190.
- Shirom, A., 1989. Burnout in work organizations. In: Cooper, C.L., Robertson, I. (Eds.), *International Review of Industrial and Organizational Psychology*. Wiley,

- New York, NY, pp. 26–48.
- Shirom, A., Melamed, S., 2006. A comparison of the construct validity of two burnout measures in two groups of professionals. *Int. J. Stress Manag.* 13, 176–200.
- Swider, B.W., Zimmerman, R.D., 2010. Born to burnout: a meta-analytic path model of personality, job burnout, and work outcomes. *J. Vocat. Behav.* 76, 487–506.
- Toker, S., Biron, M., 2012. Job burnout and depression: unraveling their temporal relationship and considering the role of physical activity. *J. Appl. Psychol.* 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. *Psychosom. Med.* 74, 840–847.
- Toppinen-Tanner, S., Ojajarvi, A., Väänänen, A., Kalimo, R., Jäppinen, P., 2005. Burnout as a predictor of medically certified sick-leave absences and their diagnosed causes. *Behav. Med.* 31, 18–32.
- Wang, J., 2005. Work stress as a risk factor for major depressive episode(s). *Psychol. Med.* 35, 865–871.
- World Health Organization, 2016. *The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines*. WHO, Geneva, Switzerland.
- World Medical Association, 2013. *World Medical Association declaration of Helsinki: ethical principles for medical research involving human subjects*. *J. Am. Med. Assoc.* 310, 2191–2194.
- Wurm, W., Vogel, K., Holl, A., Ebner, C., Bayer, D., Morkl, S., et al., 2016. Depression-burnout overlap in physicians. *PLoS One* 11, e0149913.
- Ybema, J.F., Smulders, P.G.W., Bongers, P.M., 2010. Antecedents and consequences of employee absenteeism: a longitudinal perspective on the role of job satisfaction and burnout. *Eur. J. Work Organ. Psychol.* 19, 102–124.