

City University of New York (CUNY)

CUNY Academic Works

Publications and Research

City College of New York

2022

Distress in the workplace: Characterizing the relationship of burnout measures to the Occupational Depression Inventory

Irvin Sam Schonfeld
CUNY Graduate Center

Renzo Bianchi
Norwegian University of Science and Technology

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

More information about this work at: https://academicworks.cuny.edu/cc_pubs/984

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

BRIEF REPORT

Distress in the Workplace: Characterizing the Relationship of
Burnout Measures to the Occupational Depression InventoryIrvin Sam Schonfeld¹ and Renzo Bianchi²¹ Department of Psychology, The City College and the Department of Educational Psychology,
The Graduate Center of the City University of New York² Institute of Work and Organizational Psychology, University of Neuchâtel

Burnout has been found to problematically overlap with depression. However, the generalizability of this finding remains disputed. This study examined burnout–depression overlap using the recently developed Occupational Depression Inventory (ODI) and two burnout measures, the Maslach Burnout Inventory (MBI) and the Copenhagen Burnout Inventory (CBI). The study involved two teacher samples employed in France ($N = 1,450$) and New Zealand ($N = 492$). We found the correlations of the ODI with (a) the MBI’s emotional exhaustion (EE) subscale and (b) the CBI to reach .80. An explanation of these high correlations based on content overlap in fatigue-related items was ruled out. The ODI–EE and ODI–CBI correlations were significantly stronger than the correlations among the MBI’s subscales. Exploratory structural equation modeling bifactor analyses revealed that the ODI captures what the MBI’s EE subscale and the CBI measure. The general factor explained 86% of the common variance extracted when considering ODI and EE items and 89% when considering ODI and CBI items. The findings indicate that burnout’s exhaustion core is part of a depressive syndrome. Importantly, the ODI not only assesses exhaustion but also each of the other core symptoms of major depression, including suicidal thoughts. In contrast to burnout measures, the ODI allows for *both* a dimensional and a diagnostic approach to job-related distress, consistent with the history of clinical research on depression. Moreover, the ODI has demonstrated particularly robust psychometric and structural properties in past research. The ODI’s value for occupational medical specialists in replacing burnout measures is discussed.

Keywords: Occupational Depression Inventory, Maslach Burnout Inventory, Copenhagen Burnout Inventory, emotional exhaustion, syndromal hypothesis

Supplemental materials: <https://doi.org/10.1037/str0000261.supp>

Burnout is a popular construct among researchers and practitioners concerned about job-related distress. Burnout is assumed to result from chronic, insurmountable job stress (Maslach et al., 2001). The Maslach Burnout Inventory (MBI) has become the instrument of reference for assessing burnout symptoms (Maslach et al., 2016; Schonfeld et al., 2019a). The MBI approaches burnout as a syndrome comprising exhaustion, psychological detachment from work, and a reduced sense of accomplishment on the job (Maslach et al., 2001). Exhaustion has been commonly regarded as the core of burnout (Kristensen et al., 2005; Shirom, 2005). Maslach et al. (2001) emphasized that “[e]xhaustion is the central quality of burnout and [its] most obvious manifestation” (p. 402). Many researchers (e.g., Shirom, 2005) consider that exhaustion is in fact

the only defining feature of burnout. The Copenhagen Burnout Inventory (CBI), an alternative measure of burnout, is reflective of this “exhaustion-only” conception of burnout (Kristensen et al., 2005).

The view that the burnout syndrome reflects an original condition and a “genuine phenomenon” (Schaufeli & Enzmann, 1998, p. 41) has been increasingly called into question. This questioning notably stems from examinations of how the burnout construct was created back in the 1970s and early 1980s. These examinations suggest that the burnout construct was assembled a priori, based on personal impressions and anecdotal evidence. As an illustration, Maslach (1976) already offered a detailed description and turnkey explanation of burnout despite the absence of systematic research on the entity at the time (see also Maslach & Pines, 1977). Schaufeli (2003) emphasized that the burnout construct did not emerge out of a thorough review of clinical research or sound theorizing, thus casting doubt on the content (e.g., the symptom scope) of the MBI and the very definition of the burnout syndrome. In addition, the burnout construct was introduced in the literature without any close review of the existing research on stress-related conditions. All in all, the genesis of burnout questions the solidity of the construct’s foundations.

This article was published Online First June 27, 2022.

Irvin Sam Schonfeld  <https://orcid.org/0000-0002-6182-894X>

Correspondence concerning this article should be addressed to Irvin Sam Schonfeld, Department of Psychology, The City College and the Department of Educational Psychology, The Graduate Center of the City University of New York, New York, NY 10031, United States. Email: ischonfeld@ccny.cuny.edu

Burnout as a Syndrome

A syndrome is a “grouping of signs and symptoms, based on their frequent co-occurrence” (American Psychiatric Association, 2013, p. 830). The idea that burnout is a syndrome is inherent in the field-dominating definition of burnout reflected in the MBI (Maslach et al., 2001). Maslach and her colleagues (Maslach et al., 2001, 2016) conceptualized burnout as a syndrome comprising, in addition to core symptoms of exhaustion, depersonalization (or cynicism), and reduced personal accomplishment (also known as reduced professional efficacy). Depersonalization refers to distancing oneself from one’s job and the people connected to it (e.g., coworkers, patients, students). Depersonalization has been regarded as a strategy for coping with job-related exhaustion (Maslach et al., 2001). Reduced personal accomplishment involves a sense of failure on the job and a negative evaluation of one’s organizational contribution.

A syndromal hypothesis follows from Maslach and colleagues’ tripartite conception of burnout, namely, that the subscales of the MBI, which measure emotional exhaustion (EE), depersonalization (DP), and (reduced) personal accomplishment (PA), should be more highly correlated with each other than with nonburnout measures, such as depressive symptom scales (Bianchi et al., 2021; Schonfeld & Bianchi, 2021). Maslach et al. (2016) underlined the importance of burnout’s discriminant validity that “each component [of burnout be] more closely tied to one another than to any aspect of depression” (p. 21).

Meta-analytic studies have been unclear about the syndromal coherence and unity of burnout. Some meta-analytic research indicates that the EE core of the MBI is more closely related to depressive symptoms than to burnout’s other components, DP, and reduced PA (Bianchi et al., 2021; Schonfeld et al., 2019a). Other meta-analytic studies (Koutsimani et al., 2019; Meier & Kim, 2022) did not test the syndromal hypothesis that burnout symptoms should be more strongly linked to each other than to depressive symptoms.

Over the last decade, evidence has accumulated suggesting that the burnout construct may capture a *depressive* phenomenon, though in a truncated and roundabout manner (Bianchi et al., 2021; Schonfeld & Bianchi, 2021). It is well established that depressive symptoms constitute a basic human response to chronic insurmountable stress, job-related or not (Schonfeld & Chang, 2017; Willner et al., 2013). However, the generalizability of the findings that burnout reflects a depressive response to intractable job stress and not a distinct phenomenon remains debated (Koutsimani et al., 2019; Meier & Kim, 2022).

The Occupational Depression Inventory

Bianchi and Schonfeld (2020) developed the Occupational Depression Inventory (ODI) for assessing job-related depressive symptoms and disorders. Meier and Kim (2022) wrote that “depression measures with stronger psychometric properties, such as [the ODI], might also result in higher correlations between burnout and depression scores” (p. 201). With its high reliability, evidence of convergent and discriminant validity, and satisfactory criterion validity (e.g., Hill et al., 2021; Bianchi & Schonfeld, 2020), the ODI provides an avenue for evaluating the burnout–depression relationship. In terms of criterion validity, Bianchi and Schonfeld (2020) found that scores on the ODI are related to several factors

associated with burnout, for example, job satisfaction, social support at work, willingness to remain on the job, work engagement, and general health status. Importantly, burnout scales like the MBI center on some problems that have long been considered symptoms of depression, namely, fatigue/loss of energy (American Psychiatric Association, 2013; Freud, 1918/1953–1974; Schaffner, 2016).

In addition to evaluating fatigue, the ODI’s advantages include its assessment of important symptoms that burnout scales miss, including workplace-motivated suicidal ideation, depressed mood, and anhedonia. Knowledge of these symptoms can spur the organization’s physician–medical officer (we include a licensed clinical psychologist if available) to identify potential cases of job-related depression and engage in treatment-referral efforts.

The Present Study

The present study contributes to the research literature in three ways. First, the study addresses burnout–depression overlap based on the ODI, which specifically focuses on *work-attributed* depressive symptoms; other depression scales are “cause neutral,” in that they do not incorporate etiological attributions (Bianchi & Schonfeld, 2020). This study is one of the first to examine burnout in relation to *occupational* depression. Second, the study examines burnout–depression overlap using the MBI and the CBI (Kristensen et al., 2005). Although the CBI has been increasingly employed, it has received little attention in research on burnout–depression overlap. Third, the study extends the corpus of burnout–depression research by examining the extent of burnout symptoms among likely cases of occupational depression. Based on the state of the science (Bianchi et al., 2021; Meier & Kim, 2022; Schonfeld & Bianchi, 2021), we hypothesized that EE and the CBI would lack discriminant validity vis-à-vis occupational depression. In practical terms, we anticipated that (a) the ODI–EE and ODI–CBI correlations would be greater than the intercorrelations among the MBI subscales and (b) at a granular level ODI, EE, and CBI items, to a much greater extent than DP and PA items, would load on the same general factor in an exploratory structural equation modeling (ESEM) bifactor analyses. We also hypothesized that individuals who meet the criteria for provisional diagnoses of occupational depression would exhibit elevated levels of burnout symptoms.

Method

Participants

Sample 1 comprised 1,450 French teachers (84% female; $M_{AGE} = 43.69$, $SD_{AGE} = 9.56$; $M_{YEARS_TAUGHT} = 18.56$, $SD_{YEARS_TAUGHT} = 10.07$). Sample 2 comprised 492 New Zealand teachers (80% female; $M_{AGE} = 47.09$, $SD_{AGE} = 11.81$; $M_{YEARS_TAUGHT} = 18.54$, $SD_{YEARS_TAUGHT} = 12.59$). The internet surveys were administered via Qualtrics (<https://www.qualtrics.com/>). Internet-based surveys are as reliable and valid as paper-and-pencil instruments (Gosling & Mason, 2015). The two samples were previously used for different purposes in the study by Bianchi and Schonfeld (2020). The study was conducted in compliance with the ethical standards of the institutional review board of the University of Neuchâtel.

Measures

ODI

Members of both samples completed the ODI. The ODI, keyed to the nine symptom criteria for major depression in the *Diagnostic and Statistical Manual (DSM-5; American Psychiatric Association, 2013)*, assesses the frequency of each symptom (e.g., “My experience at work made me feel like a failure”) over the course of the previous 2 weeks. The symptom scale ranges from 0 (*never or almost never*) to 3 (*nearly every day*). ODI items have the respondent make a causal attribution regarding the role of work in the development of each symptom. Participants are instructed to check 0 if they experienced a symptom for a reason that they consider unrelated to work (e.g., conjugal problems) or for a reason they cannot identify. The means, standard deviations, and alphas for the ODI and the other (sub)scales are presented in [Table 1](#). The ODI incorporates a *DSM-5*-based algorithm that allows investigators to identify workers who meet the criteria for provisional diagnoses of job-ascribed depression.¹

MBI-Educators Survey

Members of Sample 1 completed the MBI ([Maslach et al., 2016](#)), including the EE, DP, and PA subscales. The items, which cover the last year, range from 0 (*never*) to 6 (*every day*). See [Table 2](#) for the items.

CBI

Members of Sample 2 completed the CBI ([Kristensen et al., 2005](#)). Participants rated items on a 5-point scale, from *never or almost never* (1) to *always or almost always* (5). In calculating the CBI scale score, we reverse scored Item 4 (“Do you have enough energy for family and friends during leisure time?”); there was no need for reversed scoring for our ESEM bifactor analysis. See [Table 3](#) for the items.

Data Analysis

We calculated the Pearson correlations among our variables of interest. We used ESEM bifactor analysis in Mplus 8.6 ([Muthén & Muthén, 1998–2021](#)) to identify sources of systematic item variance by decomposing item variance into variance attributable to a general factor and bifactors, that is, specific factors ([Rodríguez et al., 2016](#)). We treated the items as ordinal ([Li, 2016](#)) and relied on the weighted least squares—mean and variance adjusted—estimator. We extracted one general factor and one bifactor per number of (sub)scales employed. We used a bi-geomin (oblique) rotation.² In Sample 1, involving the ODI and the three MBI subscales, we thus specified four bifactors and one general factor. In Sample 2, with the ODI and the CBI, we specified two bifactors and a general factor. We examined whether the Sample 1 ODI and EE items and the Sample 2 ODI and CBI items form an essentially unidimensional scale (see the figure in the [Supplemental Material](#)). Explained common variance (ECV) $\geq .80$ is suggestive of essential unidimensionality ([Rodríguez et al., 2016](#)). We computed item-level ECVs (I-ECVs) to estimate for each item the portion of common variance attributable to the general factor. We also computed (sub) scale-level ECVs (S-ECVs) to estimate the extent to which each (sub)scale reflects the general factor. Finally, we computed the overall ECV index, involving all items.

Using Student’s *t*-test, we compared EE, DP, PA, and CBI scores in individuals who met the criteria for a provisional diagnosis of job-related depression and individuals who did not meet those criteria. As complementary analyses, we created low (0.00–0.99), medium (1.00–1.99), and high (2.00–3.00) ODI score groups. We compared EE, DP, PA, and CBI as a function of group membership, using analysis of variance (ANOVA) and post hoc Tukey tests.

Results

[Table 1](#) shows the Pearson correlations among the ODI, EE, DP, and PA (sub)scales and the ODI–CBI correlation. The ODI–EE and ODI–CBI correlations both reached .80 and were considerably larger than the correlations among the MBI subscales, EE, DP, and PA. To rule out the possibility that the high correlations of the ODI with the MBI’s EE subscale and the CBI are due to the presence of fatigue-related items in the ODI, we recalculated the correlations by stripping the two fatigue-related items (sleep alterations and fatigue/loss of energy) from the ODI. The ODI–EE and ODI–CBI correlations barely changed. In tests of the differences between dependent correlations, we found that the ODI–EE correlation (and the correlation when the fatigue-related items were removed from the ODI) was significantly ($p < .001$) greater than all the correlations among the MBI subscales. In tests of the differences between independent correlations, we found that the ODI–CBI correlation (and again when the fatigue-related items were removed from the ODI) was significantly ($p < .001$) greater than all the correlations among the MBI subscales.

The fit statistics for the ESEM bifactor analysis of the Sample 1 data were satisfactory: $\chi^2(320) = 1821.282$, root-mean-square error of approximation (RMSEA) = .057, comparative fit index (CFI) = .976, Tucker-Lewis index (TLI) = .964, and standardized root-mean-square residual (SRMR) = .022. [Table 2](#) shows that all ODI and EE items loaded on the general factor, without noticeable differences in the magnitudes of the loadings. With few exceptions, the magnitude of the ODI and EE item loadings on the bifactors tended to be small ($< .30$), revealing no discernable pattern. When ODI and EE item bifactor loadings were greater than .30, those loadings were never greater than the items’ loadings on the general factor. The high I-ECVs suggest that the ODI and EE items more purely reflect the general factor than anything else. The S-ECVs suggest that the ODI and EE items are highly reflective of the general factor. Remarkably, an ECV based solely on the items of the ODI and the EE subscale of the MBI reached .864, suggestive of essential unidimensionality.

The DP items tended to load more highly on a bifactor than the general factor, with one exception. DP5, “Students blame me,” which loaded moderately, but more highly, on the general factor than the bifactor. I-ECVs and S-ECVs indicated that the general factor was responsible for only a small portion of DP’s variance. The PA items tended to load more highly on a bifactor than on the general factor, although with exceptions. PA4, “I feel very energetic,” loaded more highly (and negatively, given its positive wording) on the general factor. PA8, which referenced calmness, also loaded more highly although moderately (and negatively) on the general factor than on the

¹ The ODI’s algorithm can generate provisional diagnoses of depression. Formal diagnoses of depressive disorders require standardized clinical interviews.

² The bifactors are allowed to correlate with each other but are orthogonal to the general factor.

Table 1
Descriptive Statistics and Pearson Correlations Among the Scales and Subscales Involved in the Study

Scale or subscale	France (n = 1,450)						New Zealand (n = 492)			
	Descriptive statistics			<i>r</i>			Descriptive statistics			<i>r</i>
	<i>M</i>	<i>SD</i>	α	EE	DP	PA	<i>M</i>	<i>SD</i>	α	CBI
ODI	0.98	0.73	.92	.80	.33	-.44	1.08	0.75	0.92	.80
EE	3.91	1.37	.90		.44	-.55				
DP	2.73	1.21	.75			-.49				
PA	4.72	0.98	.84							
Alt ODI	0.82	0.73	.90	.78	.33	-.43	0.89	0.74	.90	.76
CBI							3.27	0.68	.88	

Note. *SD* = standard deviation; ODI = Occupational Depression Inventory; Alt ODI = ODI score with the two fatigue-related items (sleep problems and fatigue) excluded; EE = emotional exhaustion subscale of the Maslach Burnout Inventory (MBI); DP = depersonalization subscale of the MBI; PA = personal accomplishment subscale of the MBI; CBI = Copenhagen Burnout Inventory. All coefficients were statistically significant, $p < .001$.

bifactor. Overall, the S-ECV indicates that the PA subscale reflects the bifactor more than the general factor. The ECV indicates that if one were to fold all the DP and PA items into a scale that includes the ODI and EE items, such a scale would reflect less of the general factor than the ODI and EE scales by themselves.

The fit statistics for the ESEM analysis of Sample 2 data were satisfactory: $\chi^2(75) = 167.639$, RMSEA = .050, CFI = .995,

TLI = .991, and SRMR = .018. Table 3 shows that all ODI and CBI items loaded on the general factor and without noticeable differences in the magnitude of the loadings. Item loadings on the bifactors tended to be small. When an item's loading on a bifactor was greater than 0.30, that loading was never greater than the item's loading on the general factor. Each scale's S-ECV indicated that the scale reflected the general factor as did both scales combined as per

Table 2
Exploratory Structural Equation Modeling Bifactor Analysis of the Occupational Depression Inventory and the Maslach Burnout Inventory

Item	GF	BF1	BF2	BF3	BF4	C	I-ECV	S-ECV	ECV
ODI1 (Anhedonia)	0.818	0.239	-0.012	-0.030	0.031	0.736	0.909	0.896	0.631
ODI2 (Deprd mood)	0.881	0.067	-0.104	-0.046	-0.063	0.794	0.978		
ODI3 (Sleep probs)	0.751	0.284	0.006	0.002	0.065	0.657	0.858		
ODI4 (Fatigue)	0.773	0.326	0.280	0.009	-0.004	0.778	0.768		
ODI5 (Appetite probs)	0.733	0.225	-0.054	-0.031	0.058	0.607	0.885		
ODI6 (Worthlessness)	0.840	0.025	-0.160	-0.048	-0.090	0.739	0.955		
ODI7 (Probs concentrating)	0.840	0.233	-0.081	-0.029	0.084	0.788	0.895		
ODI8 (Psychomotor probs)	0.813	0.243	-0.046	-0.019	0.061	0.737	0.897		
ODI9 (Suicidal ideation)	0.771	-0.054	-0.200	-0.114	-0.067	0.645	0.922		
EE1 (Drained by work)	0.768	-0.037	0.197	0.066	0.051	0.634	0.930	0.831	
EE2 (Used up at workday's end)	0.691	0.109	0.477	0.018	0.081	0.724	0.660		
EE3 (Fatigue in morn facing job)	0.700	-0.028	0.493	-0.020	-0.068	0.739	0.663		
EE4 (Working with people is a strain)	0.672	-0.399	-0.010	0.035	0.065	0.609	0.742		
EE5 (Burned out from job)	0.856	-0.098	0.054	0.000	-0.001	0.745	0.984		
EE6 (Job is frustrating)	0.693	-0.055	0.059	0.069	-0.088	0.509	0.944		
EE7 (Works too hard)	0.584	0.039	0.248	0.069	0.086	0.410	0.832		
EE8 (Work with people stresses me)	0.681	-0.368	-0.036	0.037	0.074	0.599	0.774		
EE9 (End of my rope)	0.853	-0.113	0.139	-0.030	-0.043	0.762	0.955		
DP1 (Treat students as objects)	0.338	-0.014	0.025	0.607	-0.100	0.555	0.206	0.264	
DP2 (Callous)	0.387	0.001	0.018	0.765	-0.033	0.758	0.198		
DP3 (Job hardening me)	0.155	0.026	0.012	0.450	0.210	0.180	0.133		
DP4 (Don't care about students)	0.353	-0.051	-0.057	0.756	-0.024	0.741	0.168		
DP5 (Students blame me)	0.465	-0.006	-0.042	0.366	0.009	0.351	0.616		
PA1 (Understands student feelings)	-0.219	-0.048	-0.012	-0.095	0.577	0.429	0.112	0.337	
PA2 (Effective with student probs)	-0.273	0.027	0.021	-0.003	0.696	0.571	0.131		
PA3 (Positive influence on lives)	-0.348	-0.054	0.029	-0.054	0.761	0.726	0.167		
PA4 (Energetic)	-0.653	0.032	-0.407	0.097	0.350	0.696	0.613		
PA5 (Create relaxed atmosphere)	-0.430	-0.012	-0.034	-0.059	0.463	0.426	0.434		
PA6 (Work with students is exhilarating)	-0.265	0.024	-0.008	-0.036	0.473	0.317	0.222		
PA7 (Accomplish good things on job)	-0.418	0.060	0.021	-0.011	0.568	0.524	0.333		
PA8 (Deal calmly with probs)	-0.486	0.036	-0.056	0.002	0.316	0.345	0.685		

Note. $N = 1,450$. Loadings ≥ 0.30 are in bold. GF = general factor; BF1 = first bifactor; BF2 = second bifactor; BF3 = third bifactor; BF4 = fourth bifactor; C = communality; ECV = explained common variance; S-ECV = subscale-level ECV; I-ECV = item-level ECV; ODI = Occupational Depression Inventory; EE = emotional exhaustion subscale of the Maslach Burnout Inventory (MBI); DP = depersonalization subscale of the MBI; PA = personal accomplishment subscale of the MBI.

Table 3

Exploratory Structural Equation Modeling Bifactor Analysis of the Occupational Depression Inventory and the Copenhagen Burnout Inventory

Item	GF	BF1	BF2	C	I-ECV	S-ECV	ECV
ODI1 (Anhedonia)	0.781	0.263	0.096	0.689	0.885	0.850	0.888
ODI2 (Depressed mood)	0.811	−0.016	0.408	0.825	0.797		
ODI3 (Sleep probs)	0.744	0.335	−0.064	0.670	0.826		
ODI4 (Fatigue)	0.842	0.254	−0.204	0.814	0.871		
ODI5 (Appetite probs)	0.743	0.398	−0.024	0.711	0.776		
ODI6 (Worthlessness)	0.809	0.051	0.278	0.735	0.890		
ODI7 (Probs concentrating)	0.846	0.293	0.152	0.824	0.869		
ODI8 (Psychomotor probs)	0.800	0.345	0.126	0.775	0.826		
ODI9 (Suicidal ideation)	0.738	−0.090	0.212	0.597	0.912		
CBI1 (Worn out at end of work)	0.823	−0.009	−0.358	0.806	0.840	0.936	
CBI2 (Exhausted in morn at thought of work)	0.805	−0.137	−0.107	0.678	0.956		
CBI3 (Every working hour tires you)	0.832	−0.130	−0.028	0.710	0.975		
CBI4 (Have energy for family and friends)	−0.643	−0.063	0.140	0.437	0.946		
CBI5 (Work is emotionally exhausting)	0.814	−0.077	−0.164	0.696	0.952		
CBI6 (Work frustrates you)	0.783	−0.199	0.138	0.671	0.914		
CBI7 (Feel burnt out because of work)	0.888	−0.084	−0.126	0.811	0.972		

Note. $N = 492$. Bifactor loadings ≥ 0.30 are in bold. GF = general factor; BF1 = first bifactor; BF2 = second bifactor; C = communality; ECV = explained common variance; S-ECV = subscale-level ECV; I-ECV = item-level ECV; ODI = Occupational Depression Inventory; CBI = Copenhagen Burnout Inventory.

the ECV. The general factor explained 89% of the common variance extracted.

Our *t*-tests indicated that individuals who met the criteria for a provisional diagnosis of job-related depression (provisional cases in France, $n = 111$ [7.7%]; provisional cases in New Zealand, $n = 41$ [8.3%]) exhibited higher mean EE, DP, and CBI scores and lower mean PA scores compared to individuals who did not meet those criteria, all $ps < .001$, Cohen's *d*s ranging from 0.67 to 1.66 (see Supplemental Table 1). In addition, our ANOVAs revealed that the mean EE, DP, PA, and CBI scores of all three ODI groups (based on ODI scores of 0.00–0.99, 1.00–1.99, and 2.00–3.00) differed from each other in the expected directions, all $ps \leq .001$ (see Supplemental Table 2). Tukey post hoc tests indicated that each group mean differed significantly from every other group mean in the expected directions (all $ps \leq .001$).

Discussion

The aim of the study was hypothesis testing (Popper, 1963) vis-à-vis the syndromal hypothesis. The correlational analyses showed that (a) the MBI's EE component was more highly related to the ODI than to DP and PA and (b) the ODI–CBI relationship was as strong as the ODI–EE relationship. The high ODI–EE and ODI–CBI correlations ($\geq .80$) were not explained by the ODI containing fatigue-related items because the correlations remained essentially unchanged when we stripped the fatigue-related items from ODI scores. Moreover, provisional diagnoses of job-related depression were related to highly elevated EE and CBI scores, with equivalently large effect sizes (Cohen *d*s = 1.66). Provisional diagnoses were also related to DP and PA scores with impressive, but smaller, effect sizes (.67 and .84, respectively). The analyses of two-group mean differences are consistent with the results obtained in the three-group comparisons.

In addition to the correlational evidence and the evidence from the two- and three-group comparisons, the ESEM bifactor results also contradict the syndromal hypothesis. The findings show that ODI,

EE, and CBI items loaded substantially on the general factor and less strongly on their bifactors. S-ECVs and factor loadings indicated essential unidimensionality of the ODI and the EE and CBI items (Rodríguez et al., 2016), underscoring that the ODI does what burnout scales do *and more* (e.g., assessing anhedonia and suicidal thoughts). The PA item “I feel very energetic,” unsurprisingly, loaded more strongly on the general factor than on the PA bifactor. The PA calmness item also loaded more strongly on the general factor than the bifactor; calmness is the opposite of anxiety, which frequently co-occurs with depressive symptoms (Kotov et al., 2017). The DP “Students blame me” item loaded slightly higher on the general factor than on the bifactor suggesting that it reflected both distancing from students and the prickliness characteristic of depression. That these DP and PA items load highly on the general factor likely artificially increases the zero-order DP–EE and PA–EE correlations.

Research has accumulated showing that depression is best conceived as a dimensional phenomenon, with only individuals at the upper levels of the dimension meeting criteria for a formal diagnosis of depressive disorder (Bianchi et al., 2021; Haslam et al., 2012). Based on the three-group comparisons, we found that individuals with low EE and low CBI scores were experiencing low levels of depressive symptoms; individuals with medium EE and CBI scores were experiencing medium levels of depressive symptoms; and individuals with high EE and CBI scores were experiencing high levels of depressive symptoms. It is improbable that individuals can be experiencing burnout symptoms, even at low levels, without experiencing some depressive symptoms. Moreover, depression includes exhaustion symptoms, and exhaustion items are the most widely endorsed items on depression scales, as demonstrated in a study of nearly 59,000 individuals who completed the nine-item depressive symptom Patient Health Questionnaire (PHQ-9; Bianchi et al., 2022).

Other research suggests that burnout is likely to be a depressive condition (Ahola et al., 2014; Bianchi et al., 2021;

Rotenstein et al., 2018; Schonfeld et al., 2019b; Wurm et al., 2016). A depressive condition can give rise to serious consequences, such as suicide (Howard et al., 2021). The ODI has practical advantages over burnout measures. The ODI quantifies the severity of work-attributed depressive symptoms and establishes provisional diagnoses of job-ascribed depression. By employing the ODI, organizational medical officers can thus accomplish at least three goals. First, they can estimate the prevalence of depressive symptoms and provisional diagnoses of depression that individuals connect to their jobs. It is not possible to estimate the prevalence of burnout because it does not have clear diagnostic criteria (Bianchi et al., 2017; Rotenstein et al., 2018; Schonfeld & Bianchi, 2021; Schwenk & Gold, 2018). Second, these professionals can direct a suffering worker to appropriate treatment (e.g., cognitive behavior therapy). Third, we envision that once an organization's medical officer-physician has established that workers are suffering from work-related depression, the medical specialist can collaborate with an occupational health psychologist in identifying working conditions (e.g., little decision latitude, excessive workloads, bullying) that have had a baleful effect on workers (e.g., depressed mood, psychomotor alterations) and then take steps to rectify those problematic job conditions. Given this context, we think the ODI is a suitable replacement for burnout measures. The ODI accomplishes another research-related goal as well. The findings bearing on burnout-depression overlap represent a modest step toward helping to resolve the problem of construct redundancy in psychology (Hodson, 2021).

The ODI does not assess DP and reduced PA, entities thought to be part of the burnout syndrome (Maslach et al., 2001). Research, however, has increasingly underlined the absence of a unified burnout syndrome comprising symptoms of EE, DP, and reduced PA (e.g., Hakanen & Schaufeli, 2012). Neither DP nor PA appears to be central to the burnout construct. DP is a way some individuals cope with work-related exhaustion by distancing themselves from their job and individuals they teach, work with, or serve (Taris et al., 2005). Reduced PA is more a long-term consequence of exhaustion (Maslach et al., 2001). Depressed individuals often undervalue their own achievements, suggesting a reduced sense of accomplishment. They often manifest reduced empathy and increased interpersonal distancing, paralleling DP (American Psychiatric Association, 2013). DP and reduced PA are better viewed as some of many possible correlates or consequences of exhaustion than key components of burnout (or depression).

The study has at least two limitations. First, the samples included members of one occupational group, teachers. The findings are not generalizable to members of other occupational groups. Second, the data are cross-sectional. Although longitudinal research is important to understanding how one condition may cause or result from another, criticism of our cross-sectional design is ill-founded because clear evidence that burnout and depression are distinct entities is needed before a researcher can show one affects the other. That evidence has not been established (Meier & Kim, 2022).

Concluding Remarks

Our findings indicate that the ODI captures the core of what burnout scales measure while assessing other symptoms not covered by burnout scales. In view of the problems affecting the burnout construct (e.g., definitional heterogeneity, absence of established

diagnostic criteria, atheoretical development, fragile foundation, problematic psychometric and structural properties of measures such as the MBI), the ODI appears to be a worthy replacement of burnout measures. The ODI is briefer than the MBI. The ODI's brevity and its algorithm can aid occupational health specialists efficiently identify at-risk workers without overburdening workers with lengthy questionnaires and interviews. Unlike the MBI, the ODI is available at no cost (English, French, and Spanish versions of the instrument are available in the Supplemental Materials). The ODI provides a comprehensive assessment of depressive symptoms that can be severe (e.g., suicidal ideation). Organizational medical professionals need to know about these symptoms to direct workers to appropriate treatments and take steps, with their occupational health psychologist colleagues, required to modify job-related depressogenic conditions.

References

- Ahola, K., Hakanen, J. J., Perhoniemi, R., & Mutanen, P. (2014). Relationship between burnout and depressive symptoms: A study using the person-centred approach. *Burnout Research, 1*(1), 29–37. <https://doi.org/10.1016/j.burn.2014.03.003>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.).
- Bianchi, R., & Schonfeld, I. S. (2020). The Occupational Depression Inventory: A new tool for clinicians and epidemiologists. *Journal of Psychosomatic Research, 138*, Article 110249. <https://doi.org/10.1016/j.jpsychores.2020.110249>
- Bianchi, R., Schonfeld, I. S., & Laurent, E. (2017). Can we trust burnout research? *Annals of Oncology: Official Journal of the European Society for Medical Oncology, 28*(9), 2320–2321. <https://doi.org/10.1093/annonc/mdx267>
- Bianchi, R., Verkuilen, J., Schonfeld, I. S., Hakanen, J. J., Jansson-Fröjmark, M., Manzano-García, G., Laurent, E., & Meier, L. L. (2021). Is burnout a depressive condition? A 14-sample meta-analytic and bifactor analytic study. *Clinical Psychological Science, 9*(4), 579–597. <https://doi.org/10.1177/2167702620979597>
- Bianchi, R., Verkuilen, J., Toker, S., Schonfeld, I. S., Gerber, M., Brähler, E., & Kroenke, K. (2022). Is the PHQ-9 a unidimensional measure of depression? A 58,272-participant study. *Psychological Assessment*. Advance online publication. <https://doi.org/10.1037/pas0001124>
- Freud, S. (1918/1953–1974). Mourning and melancholia. In (J. Strachey, Trans. & Ed.), *The standard edition of the complete works of Sigmund Freud* (Vol. XIV, pp. 243–258). Hogarth Press.
- Gosling, S. D., & Mason, W. (2015). Internet research in psychology. *Annual Review of Psychology, 66*(1), 877–902. <https://doi.org/10.1146/annurev-psych-010814-015321>
- Hakanen, J. J., & Schaufeli, W. B. (2012). Do burnout and work engagement predict depressive symptoms and life satisfaction? A three-wave seven-year prospective study. *Journal of Affective Disorders, 141*(2–3), 415–424. <https://doi.org/10.1016/j.jad.2012.02.043>
- Haslam, N., Holland, E., & Kuppens, P. (2012). Categories versus dimensions in personality and psychopathology: A quantitative review of taxometric research. *Psychological Medicine, 42*(5), 903–920. <https://doi.org/10.1017/s0033291711001966>
- Hill, C., de Beer, L. T., & Bianchi, R. (2021). Validation and measurement invariance of the Occupational Depression Inventory in South Africa. *PLOS ONE, 16*(12), Article e0261271. <https://doi.org/10.1371/journal.pone.0261271>
- Hodson, G. (2021). Construct jangle or construct mangle? Thinking straight about (nonredundant) psychological constructs. *Journal of Theoretical Social Psychology, 5*(4), 576–590. <https://doi.org/10.1002/jts5.120>

- Howard, M. C., Follmer, K. B., Smith, M. B., Tucker, R. P., & Van Zandt, E. C. (2021). Work and suicide: An interdisciplinary systematic literature review. *Journal of Occupational Behaviour*. Advance online publication. <https://doi.org/10.1002/job.2519>
- Kotov, R., Krueger, R. F., Watson, D., Achenbach, T. M., Althoff, R. R., Bagby, R. M., Brown, T. A., Carpenter, W. T., Caspi, A., Clark, L. A., Eaton, N. R., Forbes, M. K., Forbush, K. T., Goldberg, D., Hasin, D., Hyman, S. E., Ivanova, M. Y., Lynam, D. R., Markon, K., . . . Zimmerman, M. (2017). The Hierarchical Taxonomy of Psychopathology (HiTOP): A dimensional alternative to traditional nosologies. *Journal of Abnormal Psychology, 126*, 454–477. <https://doi.org/10.1037/abn0000258>
- Koutsimani, P., Montgomery, A., & Georganta, K. (2019). The relationship between burnout, depression, and anxiety: A systematic review and meta-analysis. *Frontiers in Psychology, 10*, Article 284. <https://doi.org/10.3389/fpsyg.2019.00284>
- Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work and Stress, 19*, 192–207. <https://doi.org/10.1080/02678370500297720>
- Li, C. H. (2016). Confirmatory factor analysis with ordinal data: Comparing robust maximum likelihood and diagonally weighted least squares. *Behavior Research Methods, 48*, 936–949. <https://doi.org/10.3758/s13428-015-0619-7>
- Maslach, C. (1976). Burned-out. *Human Behavior, 5*(9), 16–22.
- Maslach, C., Jackson, S. E., & Leiter, M. P. (2016). *Maslach Burnout Inventory manual* (4th ed.). Consulting Psychologists Press.
- Maslach, C., & Pines, A. (1977). The burn-out syndrome in the day care setting. *Child and Youth Care Forum, 6*(2), 100–113. <https://doi.org/10.1007/BF01554696>
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology, 52*(1), 397–422. <https://doi.org/10.1146/annurev.psych.52.1.397>
- Meier, S. T., & Kim, S. (2022). Meta-regression analyses of relationships between burnout and depression with sampling and measurement methodological moderators. *Journal of Occupational Health Psychology, 27*(2), 195–206. <https://doi.org/10.1037/ocp0000273>
- Muthén, L. K., & Muthén, B. O. (1998–2021). *Mplus user's guide* (8th ed.). Popper, K. R. (1963). *Conjectures and refutations: The growth of scientific knowledge*. Harper Torchbooks.
- Rodriguez, A., Reise, S. P., & Haviland, M. G. (2016). Applying bifactor statistical indices in the evaluation of psychological measures. *Journal of Personality Assessment, 98*(3), 223–237. <https://doi.org/10.1080/00223891.2015.1089249>
- Rotenstein, L. S., Torre, M., Ramos, M. A., Rosales, R. C., Guille, C., Sen, S., & Mata, D. A. (2018). Prevalence of burnout among physicians: A systematic review. *Journal of the American Medical Association, 320*(11), 1131–1150. <https://doi.org/10.1001/jama.2018.12777>
- Schaffner, A. K. (2016). Exhaustion and the pathologization of modernity. *The Journal of Medical Humanities, 37*(3), 327–341. <https://doi.org/10.1007/s10912-014-9299-z>
- Schaufeli, W. B. (2003). Past performance and future perspectives of burnout research. *SA Journal of Industrial Psychology, 29*(4), 1–15. <https://doi.org/10.4102/sajip.v29i4.127>
- Schaufeli, W. B., & Enzmann, D. (1998). *The burnout companion to study and practice: A critical analysis*. Taylor & Francis.
- Schonfeld, I. S., & Bianchi, R. (2021). From burnout to occupational depression: Recent developments in research on job-related distress and occupational health. *Frontiers in Public Health, 9*, Article 796401. <https://doi.org/10.3389/fpubh.2021.796401>
- Schonfeld, I. S., & Chang, C.-H. (2017). *Occupational health psychology: Work, stress, and health*. Springer Publishing. <https://doi.org/10.1891/9780826199683>
- Schonfeld, I. S., Verkuilen, J., & Bianchi, R. (2019a). Inquiry into the correlation between burnout and depression. *Journal of Occupational Health Psychology, 24*(6), 603–616. <https://doi.org/10.1037/ocp0000151>
- Schonfeld, I. S., Verkuilen, J., & Bianchi, R. (2019b). An exploratory structural equation modeling bi-factor analytic approach to uncovering what burnout, depression, and anxiety scales measure. *Psychological Assessment, 31*(8), 1073–1079. <https://doi.org/10.1037/pas0000721>
- Schwenk, T. L., & Gold, K. J. (2018). Physician burnout—A serious symptom, but of what? *Journal of the American Medical Association, 320*(11), 1109–1110. <https://doi.org/10.1001/jama.2018.11703>
- Shirom, A. (2005). Reflections on the study of burnout. *Work and Stress, 19*(3), 263–270. <https://doi.org/10.1080/02678370500376649>
- 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 and Stress, 19*(3), 238–255. <https://doi.org/10.1080/02678370500270453>
- Willner, P., Scheel-Krüger, J., & Belzung, C. (2013). The neurobiology of depression and antidepressant action. *Neuroscience and Biobehavioral Reviews, 37*(10 Pt. 1), 2331–2371. <https://doi.org/10.1016/j.neubiorev.2012.12.007>
- Wurm, W., Vogel, K., Holl, A., Ebner, C., Bayer, D., Mörtl, S., Szilagy, I. S., Hotter, E., Kapfhammer, H. P., & Hofmann, P. (2016). Depression-burnout overlap in physicians. *PLOS ONE, 11*, Article e0149913. <https://doi.org/10.1371/journal.pone.0149913>

Received January 19, 2022

Revision received April 20, 2022

Accepted April 20, 2022 ■