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# The Occupational Depression Inventory: A new tool for clinicians and epidemiologists

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ABSTRACT

*Background:* Depressive symptoms induced by insurmountable job stress and sick leave for mental health reasons have become a focal concern among occupational health specialists. The present study introduces the Occupational Depression Inventory (ODI), a measure designed to quantify the severity of work-attributed depressive symptoms and establish provisional diagnoses of job-ascribed depression. The ODI comprises nine symptom items and a subsidiary question assessing turnover intention.

*Methods:* A total of 2254 employed individuals were recruited in the U.S., New Zealand, and France. We examined the psychometric and structural properties of the ODI as well as the nomological network of work-attributed depressive symptoms. We adopted an approach centered on exploratory structural equation modeling (ESEM) bifactor analysis. We developed a diagnostic algorithm for identifying likely cases of job-ascribed depression (SPSS syntax provided).

*Results:* The ODI showed strong reliability and high factorial validity. ESEM bifactor analysis indicated that, as intended, the ODI can be used as a unidimensional measure (Explained Common Variance = 0.891). Work-attributed depressive symptoms correlated in the expected direction with our other variables of interest—e.g., job satisfaction, general health status—and were markedly associated with turnover intention. Of our 2254 participants, 7.6% ($n$ = 172) met the criteria for a provisional diagnosis of job-ascribed depression.

*Conclusions:* This study suggests that the ODI constitutes a sound measure of work-attributed depressive symptoms. The ODI may help occupational health researchers and practitioners identify, track, and treat job-ascribed depression more effectively. ODI-based research may contribute to informing occupational health policies and regulations in the future.

## 1. Introduction

Depression is a major contributor to the burden of disease, with more than 300 million individuals affected worldwide [1,2]. The lifetime prevalence of major depression exceeds 15% in countries such as the U.S. and appears to be on the rise for several decades [3–5]. Depressive conditions are primarily characterized by dysphoric mood and anhedonia (i.e., loss of pleasure and interest in activities previously experienced as enjoyable), with suicidal ideation an important severity marker [6–8]. While depression is nosologically defined and diagnosable [6], there is robust evidence that depression is best conceived of as a dimensional phenomenon, on a continuum from euthymia to full-blown depressive disorders [9–11].

From an etiological standpoint, the development of depressive symptoms has been linked to a discrepancy between positive, rewarding experiences on the one hand, and negative, punitive experiences on the other hand [11–13]. Situations involving unresolvable stress, in which individuals are sentenced to endure the harmful effects of stressors that cannot be neutralized, have long been identified as key depressogenic factors [14–17]. Depression is predictive of a constellation of health disturbances and morbidities fostered by unresolvable stress, including immune and neurological alterations [18–20], cardiovascular disease [21,22], diabetes [23], osteoporosis [24], accelerated aging [25], dementia [26], and cancer [27]. Depression is also a prime risk factor for suicide [28], consistent with the view that "suicide occurs when the perspective of dying has become definitely more rewarding than the perspective of going on living" [29] (p. 192). In light of these findings, preventing and treating depression is crucial for promoting individuals' overall health and longevity.

Over the last few decades, depressive symptoms induced by job

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stress and sick leave for mental health reasons have become a focal concern among occupational health specialists [30,31]. In Switzerland, for instance, sick leave for mental health reasons has reportedly increased by 50%–70% in less than 10 years [32]. The cost of depression in the workplace is in billions of U.S. dollars in Western countries and is considered an individual-, an organizational-, and a society-level problem. To date, however, no instrument has been developed to assess depressive symptoms that individuals specifically ascribe to their work [12]. While numerous depression scales are available, such scales assess depressive symptoms without etiological considerations. The absence of a measure of work-ascribed depressive symptoms is problematic for occupational health specialists, for example when it comes to deciding whether work-centered interventions or new labor regulations are needed. Although worryingly high levels of depressive symptoms have been documented in certain occupational groups [33], the extent to which affected individuals consider these symptoms job-related is, in most cases, unclear [34].

The present study introduces the Occupational Depression Inventory (ODI), a measure designed to assess the severity of work-attributed depressive symptoms and establish provisional diagnoses of job-ascribed depression. The ODI thus approaches depression from both a dimensional (quantitative) and a categorical (qualitative) standpoint. We report on the development of the ODI in two languages—English and French—across three countries—the U.S., New Zealand, and France. We scrutinized the psychometric and structural properties of the ODI relying on exploratory structural equation modeling (ESEM) [35]. We used ESEM for the purpose of both exploratory factor analysis (EFA) and bifactor analysis—bifactor analysis is particularly well-suited for examining scale dimensionality [36]. We examined the ODI's nomological network to assess the scale's criterion validity. We inspected the ODI's relationships with a variety of work-contextualized (e.g., job satisfaction) and context-free (general health status) measures. By developing the ODI, our aim is to provide occupational health specialists with a tool that (a) allows for a better identification, monitoring, and treatment of job-ascribed depression and (b) helps to inform occupational health policies and regulations on a global scale. The development of the ODI responds to a long-expressed need for tailored assessment tools in occupational health science [34,37].

## 2. Methods

### 2.1. Study samples

A total of 2254 participants took part in this study. Participants came from three different samples recruited in three different countries. Most of the participants were employed as schoolteachers, an occupational group substantially affected by job stress [12].

The first sample (Sample 1) comprised 1450 French schoolteachers ($M_{AGE}$ = 43.69, $SD_{AGE}$ = 9.56). Eighty-four percent were females. Respondents had been employed in the educational field for 18.56 years on average ($SD$ = 10.07). No compensation was offered. Sample 1 is further described in Supplementary Material 1.

The second sample (Sample 2) consisted of 492 schoolteachers employed in New Zealand ($M_{AGE}$ = 47.09, $SD_{AGE}$ = 11.81). Eighty percent were females. Respondents' mean length of employment was 18.54 years ($SD$ = 12.59). Again, we offered no compensation. Sample 2 is further described in Supplementary Material 2.

The third sample (Sample 3) was recruited through Amazon's Mechanical Turk (MTurk), an open online marketplace (https://www.mturk.com/). Two qualification requirements were specified: (a) U.S. location and (b) full-time employment (i.e., 35 + hours per week). Each respondent was remunerated $0.50. MTurk can be used to obtain high-quality data [38]; employing measures to detect careless respondents is however recommended [39,40]. We relied on the following safeguards. First, we included a bogus item ("On a scale from 0 to 10, and without speculating on possible advances in science, how likely are you to live to 500?"). Participants selecting any other option than "0" were excluded. Second, we included an open-ended, qualitative question about life stress. Any out-of-scope or incomprehensible answer was eliminatory. Third, at the end of the survey, we asked respondents to indicate whether they had responded randomly to any questions. Participants who disclosed random responses were removed from the sample. Of the 350 respondents who initially took the survey, 10.9% ($n$ = 38) were identified as careless and excluded. Fifty-seven percent of the final respondents were females. Respondents' mean age was 41.28 ($SD$ = 9.94). Sample 3 is further described in Supplementary Material 3.

All participants completed Internet surveys administered with Qualtrics (https://www.qualtrics.com/). Internet surveys have proved as reliable and valid as paper-and-pencil surveys [41]. The study was conducted in compliance with the ethical standards of the institutional review board of the University of Neuchâtel.

### 2.2. Measures of interest

#### 2.2.1. ODI

We developed the ODI with reference to the nine diagnostic criteria for major depression of the *Diagnostic and statistical manual of mental disorders*, fifth edition (*DSM-5*) [6]. The ODI thus includes symptom items aiming to assess anhedonia, depressed mood, sleep alterations, fatigue/loss of energy, appetite alterations, feelings of worthlessness, cognitive impairment, psychomotor alterations, and suicidal ideation (Table 1). Consistent with *DSM-5* diagnostic criteria for major depression, respondents are asked to report on symptoms experienced over the past two weeks. Items are rated on a 4-point scale, from 0 for "never or almost never" to 3 for "nearly every day." Instead of assessing depressive symptoms in a "cause-neutral" manner, each ODI item involves causal attributions to respondents' work/job (e.g., "My experience at work made me feel like a failure"). The ODI also includes a subsidiary question related to turnover intention: "If you have encountered at least some of the problems mentioned above, do these problems lead you to consider leaving your current job or position?" Three response options are provided: "yes," "no," and "I don't know." This complementary item is intended to help investigators assess the concrete work implications of the depressive symptoms reported. The instructions to respondents stipulate that the questions asked concern the impact of the respondents' work/job on themselves. In addition, the instructions to respondents emphasize that if respondents experienced the problems presented for reasons they consider *un*connected to their work/job or for reasons they cannot identify, they should select the "never or almost never" option (reflected in a score of 0) when responding.

The ODI was designed to (a) quantify the severity of work-attributed depressive symptoms—dimensional approach—and (b) establish provisional diagnoses of job-ascribed depression—categorical approach.[1] The quantification of work-attributed depressive symptoms is straightforward. Work-attributed depressive symptoms are reflected in the ODI's sum (or mean) score, with higher scores signaling that an individual is more severely affected. For establishing provisional diagnoses of job-ascribed depression, we created an algorithm inspired by the one developed for the PHQ-9 [42], a measure of reference in depression research [3,12]. A provisional diagnosis is produced if an individual exhibits a score of 3 on at least five of the nine ODI's symptom items and one of these symptom items is anhedonia (item 1) or depressed mood (item 2). A score of 3 corresponds to symptoms experienced "nearly every day," a frequency of symptoms that dovetails with *DSM-5* diagnostic criteria for major depression [6]. The *DSM-5* indeed indicates that "[t]he criterion symptoms for major depressive disorder must be present nearly every day to be considered present" (p. 162) [6].

[1] We talk of *provisional* diagnoses because the method of reference for diagnosing clinical forms of depression is the standardized clinical interview [3].

**Table 1**
Occupational Depression Inventory (ODI): Instructions to respondents and items.

| *Instructions to respondents* | | |
|---|---|---|
| The following statements concern the impact your work could have had on you.<br>Please read each statement and indicate how often you experienced the problems mentioned over the PAST TWO WEEKS. Use the scale provided to respond:<br>0 = never or almost never<br>1 = a few days only<br>2 = more than half the days<br>3 = nearly every day<br>Here is an example: "I felt anxious because of my job."<br>• If you did NOT feel anxious because of your job, select 0.<br>• If you felt anxious for reasons that you consider UNCONNECTED TO YOUR JOB (personal problems, marital problems, family problems, health problems, etc.), select 0 as well.<br>• If you felt anxious but don't know why, again select 0.<br>• If it is clear for you that YOUR JOB caused you to feel anxious, select 1, 2 or 3 to indicate how often that happened. | | |
| *Items* | | |
| 1. | Anhedonia | "My work was so stressful that I could not enjoy the things that I usually like doing." |
| 2. | Depressed mood | "I felt depressed because of my job." |
| 3. | Sleep alterations | "The stress of my job caused me to have sleep problems (I had difficulties falling asleep or staying asleep, or I slept much more than usual)." |
| 4. | Fatigue/loss of energy | "I felt exhausted because of my work." |
| 5. | Appetite alterations | "I felt my appetite was disturbed because of the stress of my job (I lost my appetite, or the opposite, I ate too much)." |
| 6. | Feelings of worthlessness | "My experience at work made me feel like a failure." |
| 7. | Cognitive impairment | "My job stressed me so much that I had trouble focusing on what I was doing (e.g., reading a newspaper article) or thinking clearly (e.g., to make decisions)." |
| 8. | Psychomotor alterations | "As a result of job stress, I felt restless, or the opposite, noticeably slowed down—for example, in the way I moved or spoke." |
| 9. | Suicidal ideation | "I thought that I'd rather be dead than continue in this job." |
| SQ | Turnover intention | If you have encountered at least some of the problems mentioned above, do these problems lead you to consider leaving your current job or position? |

*Notes.* ODI forms are available in Supplementary Materials 4 (French version) and 5 (English version). An SPSS syntax implementing the provisional diagnosis algorithm of the ODI is provided in Supplementary Material 6. SQ: subsidiary question.

Importantly, suicidal ideation (item 9) counts even with a score of 1 or 2 (symptoms experienced "a few days only" or "more than half the days"). Suicidal ideation is given a special weight due to its intrinsic gravity and alarm status [6,43].[2] The state of the art indicates that there are no iatrogenic risks of assessing suicidality [45].

The full version of the ODI, which includes detailed instructions to respondents, is available in French in Supplementary Material 4, and in English in Supplementary Material 5. An SPSS syntax implementing the provisional diagnosis algorithm of the ODI is provided in Supplementary Material 6.

#### 2.2.2. Additional measures

In the interest of reducing response burden on participants, single-item measures were employed in all samples for assessing trait anxiety, environmental quality, residential satisfaction, safety in daily life, general health status, social support in work life, social support outside of work, job satisfaction, and life satisfaction—the items are provided in Supplementary Materials 1 to 3.

In Samples 1 and 2, we assessed (cause-neutral) depressive symptoms with the 10-item version of the Center for Epidemiologic Studies Depression scale (CES-D; Cronbach's $\alpha = 0.831$ and 0.850, respectively) [46] and dedication to work with the dedication subscale of the Utrecht Work Engagement Scale-Short Form (UWES-9; Cronbach's $\alpha = 0.855$ and 0.845, respectively) [47]. In addition, willingness to stay in the job and active search for another job/position were assessed in Sample 1, using single-item measures. In Sample 3, we assessed (cause-neutral) depressive symptoms with the depression subscale of the Hospital Anxiety and Depression Scale (HADS-D; Cronbach's $\alpha = 0.869$) [48]. The HADS-D and the CES-D are widely used measures of depression [3].

[2] We did not include an independent "clinical significance" criterion in view of the uncertainty surrounding its use [44].

### 2.3. Data analyses

We examined the factor structure of the ODI based on ESEM EFA (using a geomin rotation) and ESEM bifactor analysis (using a bi-geomin rotation). In the ESEM bifactor analysis, we ascertained whether the ODI can be viewed as essentially unidimensional by scrutinizing the loadings of ODI's items on the General factor and computing the Explained Common Variance (ECV) index. The ECV index reflects the proportion of the common variance extracted that is accounted for by the General factor; ECV values exceeding 0.80 are suggestive of essential unidimensionality [47]. We treated the items as ordinal and employed the weighted least squares—mean and variance adjusted—estimator [49].

In addition, we employed ESEM bifactor analysis to examine the convergent and discriminant validity of the ODI vis-à-vis our cause-neutral measures of depression—the CES-D and the HADS-D. As our goal was confirmatory, we used a partially specified target rotation [35]. Because all three scales are intended to assess depressive symptoms, we expected the ODI to show convergent validity with the CES-D and the HADS-D. We thus anticipated that ODI, CES-D, and HADS-D items would all substantially load on the General factor. However, because the ODI assesses work-attributed depressive symptoms whereas the CES-D and the HADS-D assess depressive symptoms in a cause-neutral manner, we also expected some degree of discriminant validity, as reflected in ECV indices markedly below 0.80. All factor analyses were conducted with Mplus 8 [50].

We estimated the reliability of the ODI based on Cronbach's $\alpha$ and McDonald's $\omega$ [51]. To investigate the ODI's nomological network, we calculated Spearman's rank correlation coefficients. Finally, we relied on analysis of variance and Dunnett's T3 to examine the link between work-attributed depressive symptoms and turnover intention—as assessed by the subsidiary question of the ODI.

## 3. Results

Descriptive statistics pertaining to the measures employed are available in Supplementary Materials 1 to 3. In the three samples, the

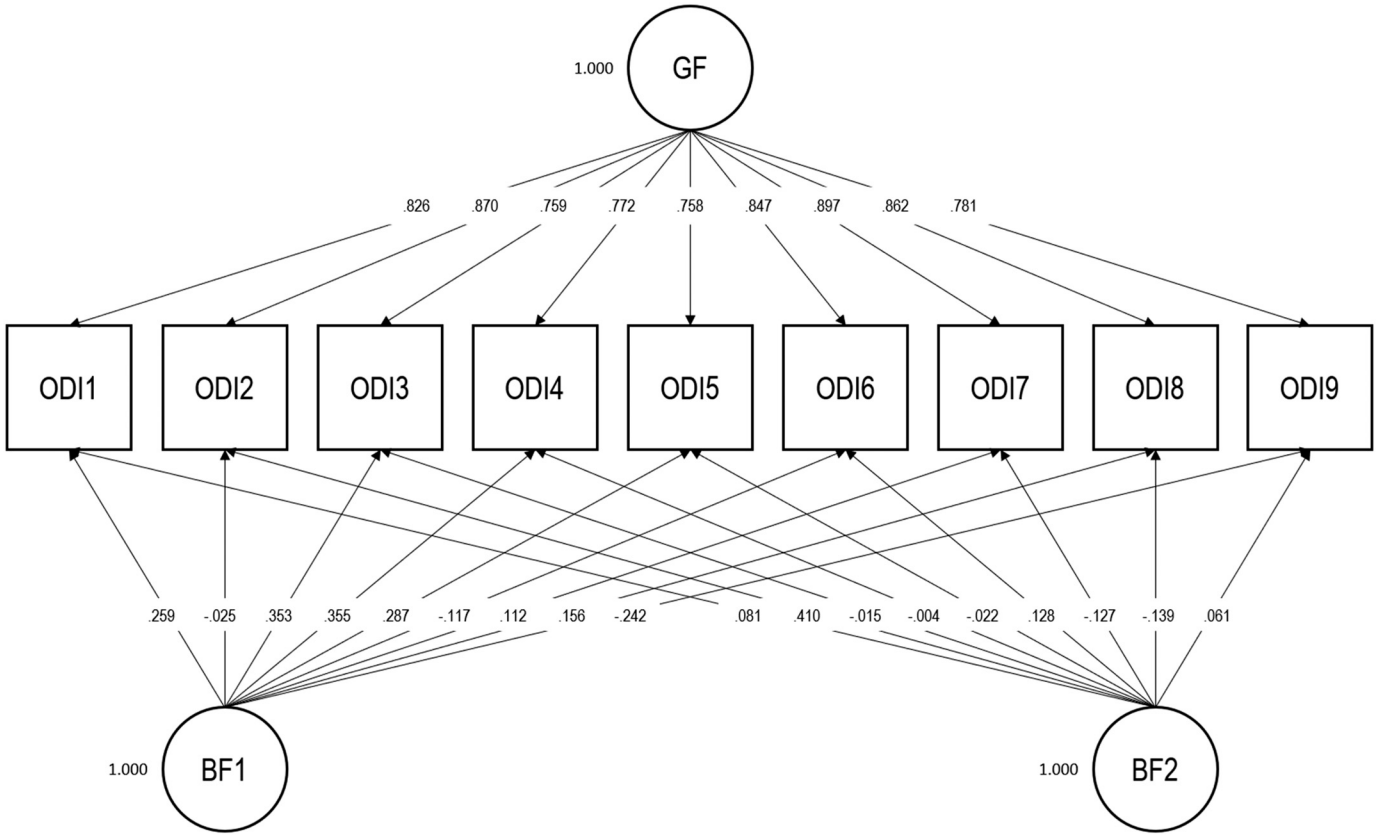


**Fig. 1.** Exploratory structural equation modeling bifactor analysis of the Occupational Depression Inventory (ODI; $N = 2254$). The items load on average 0.819 on the General factor. The items of the ODI are coded ODI1 to ODI9. GF: General factor; BF1: first bifactor; BF2: second bifactor.

*most* frequently endorsed ODI item was fatigue/loss of energy and the *least* frequently endorsed ODI item was suicidal ideation. In Sample 1, 7.7% of the participants ($n = 111$) met the criteria for a provisional diagnosis of job-ascribed depression; in Sample 2, 8.3% ($n = 41$); in Sample 3, 6.4% ($n = 20$). The overall prevalence was 7.6% ($n = 172$). Turnover intention was substantially linked to ODI scores in all samples, $ps < 0.001$ (see Supplementary Materials 1 to 3).

### 3.1. ESEM EFA

ESEM EFAs were indicative of a similar two-factor structure in all samples (Supplementary Material 7). The first factor was dominated by anhedonic/somatic symptom items and the second factor, by dysphoric symptom items. Although no substantial cross-loading was observed (no item loaded ≥0.30 on more than one factor), items 1, 2, 6, and 7 showed some degree of factorial complexity. The two factors correlated 0.752 to 0.843 across the three samples.

**Table 2**
Exploratory structural equation modeling bifactor analysis of the Occupational Depression Inventory (ODI): Explained Common Variance.

| Item | C | I-ECV | ECV |
|---|---|---|---|
| ODI1 | 0.756 | 0.902 | 0.891 |
| ODI2 | 0.925 | 0.818 | |
| ODI3 | 0.700 | 0.823 | |
| ODI4 | 0.722 | 0.825 | |
| ODI5 | 0.657 | 0.875 | |
| ODI6 | 0.747 | 0.960 | |
| ODI7 | 0.834 | 0.965 | |
| ODI8 | 0.787 | 0.944 | |
| ODI9 | 0.672 | 0.908 | |

*Notes.* $N = 2254$. C: communality; ECV: Explained Common Variance; I-ECV: item-level ECV.

### 3.2. ESEM bifactor analysis

Because the basic factor structure of the ODI was similar in the three samples, we conducted our ESEM bifactor analysis merging all datasets ($N = 2254$). Results are summarized in Fig. 1 and Table 2. We extracted two bifactors (one for anhedonic/somatic symptoms and one for dysphoric symptoms) in addition to the General factor. Our bifactor model showed a good fit: RMSEA = 0.044; CFI = 0.999; TLI = 0.996. All ODI items loaded strongly on the General factor—from 0.758 to 0.897—and more strongly on the General factor than on the bifactors. The bifactors did not collapse, however, with some bifactor loadings near or above 0.30 [52]. With a value of 0.891, the ECV index was indicative of essential unidimensionality [36]. Each item-level ECV index exceeded 0.80, suggesting that ODI items contributed homogeneously to the unidimensionality of the measure.

### 3.3. Reliability

Cronbach's $\alpha$ for the ODI was excellent, with values of 0.916 in Sample 1, 0.915 in Sample 2, and 0.931 in Sample 3. McDonald's $\omega$ for the ODI was also highly satisfactory, with values of 0.924 in Sample 1, 0.923 in Sample 2, and 0.938 in Sample 3.

### 3.4. Convergent and discriminant validity

Results regarding the convergent and discriminant validity of the ODI and CES-D are summarized in Supplementary Material 8. We

extracted two bifactors in addition to the General factor because of our focus on two different scales. The targets were defined based on the items belonging to each scale. The model showed a satisfactory fit in both Sample 1 (RMSEA = 0.053; CFI = 0.987; TLI = 0.980) and Sample 2 (RMSEA = 0.057; CFI = 0.984; TLI = 0.977). In both samples, every CES-D and ODI item loaded substantially on the General factor, signaling convergent validity of the two measures. As anticipated, however, the CES-D and the ODI also showed some degree of discriminant validity. The ECV was 0.646 in Sample 1 (ODI scale-level ECV = 0.570) and 0.691 in Sample 2 (ODI scale-level ECV = 0.596).

Results regarding the convergent and discriminant validity of the ODI and HADS-D (Sample 3) can also be found in Supplementary Material 8. As was previously the case, we extracted two bifactors in addition to the General factor. The model showed a satisfactory fit: RMSEA = 0.045; CFI = 0.995; TLI = 0.992. All HADS-D and ODI items loaded substantially on the General factor, signaling convergent validity of the two measures. As expected, some degree of discriminant validity was concomitantly observed. Indeed, the ECV was 0.560 (ODI scale-level ECV = 0.633).

### 3.5. Criterion validity

Correlations among the study variables are displayed in Supplementary Materials 1 to 3. In all samples, work-attributed depressive symptoms correlated in the expected direction with our other variables of interest. Correlations were supportive of the ODI's criterion validity.

Regarding work-contextualized variables, ODI-assessed symptoms correlated substantially with job satisfaction (*rhos* [ρs] from −0.478 to −0.606), dedication to work (ρs of −0.464 and − 0.476), and willingness to stay in the job (ρ = −0.457) and moderately with social support in work life (ρs from −0.211 to −0.438) and active search for another job/position (ρ = 0.331). Regarding context-free variables, ODI-assessed symptoms correlated substantially with (cause-neutral) depressive symptoms (ρs from 0.432 to 0.722), trait anxiety (ρs from 0.451 to 0.478), general health status (ρs from −0.300 to −0.523), and life satisfaction (ρs from −0.360 to −0.507). ODI-assessed symptoms correlated to a (much) weaker extent with social support outside of work (ρs from −0.173 to −0.261), environmental quality (ρs from −0.125 to −0.168), residential satisfaction (ρs from −0.001 to −0.232), and safety in daily life (ρs from −0.187 to −0.298).

## 4. Discussion

The aim of this study was to introduce the ODI, a measure developed to assess the severity of work-attributed depressive symptoms and establish provisional diagnoses of job-ascribed depression. The ODI showed strong reliability and high factorial validity. ESEM bifactor analysis indicated that, as intended, the ODI can be used as a unidimensional measure. Incidentally, our results suggest that the *DSM-5* symptoms defining major depression show appreciable unity [6]. The ODI exhibited both convergent and discriminant validity vis-à-vis cause-neutral depression scales. These results are consistent with the notion that, at the population level, all individuals with a job-ascribed depression should be identified as depressed in a cause-neutral assessment of depressive disorders whereas only some of the individuals identified as depressed in a cause-neutral assessment of depressive disorders should meet the criteria for a job-ascribed depression.

Work-attributed depressive symptoms correlated in the expected direction with both our work-contextualized (e.g., job satisfaction) and our context-free (e.g., general health status) variables of interest, speaking to the criterion validity of the ODI. ODI-assessed symptoms were clearly associated with turnover intention, a finding consistent with the view that the ODI turnover intention item can help assess concrete work implications of the depressive symptoms reported.

Pragmatically speaking, with only nine core items, the ODI is a brief measure that can be completed rapidly. Moreover, scale scoring is straightforward and diagnostic information can be extracted in just a few seconds once the diagnostic procedure is mastered. Such characteristics can be helpful in clinical practice because they facilitate occupational physicians' work while reducing patients' burden. Brevity and coding simplicity are also advantageous in the research context. In epidemiological studies, for instance, survey duration is a significant concern for it bears on participant involvement and attrition, and coding simplicity can render data analysis and reporting less laborious. The qualities of the ODI thus make it a handy and polyvalent tool.

While our study has noticeable strengths, such as the use of advanced statistical techniques, it also has limitations. First, the study samples were self-selected and their representativeness is unclear. Our study may have, for instance, attracted a disproportionately high number of job-stressed individuals. Our prevalence estimates are thus sample-specific and offer no opportunity for generalization. Second, our study involved a limited array of occupations—most of our participants were schoolteachers. Because some jobs may be more likely than others to precipitate depression or to be perceived as depressogenic, we recommend that future studies focus on a much wider range of occupational groups. More broadly, it would be useful to estimate the prevalence of job-ascribed depression at multiple levels of observation, e.g., across countries (based on samples representative of the general working population), occupational categories, and organizations within a given sector of activity. Such a mapping could, for instance, enable us to identify countries, occupational categories, and organizations in which the prevalence of job-ascribed depression is abnormally high. Such information could then help us guide health-promoting interventions. Third, our study had a cross-sectional design. Follow-up studies are needed to examine test-retest reliability as well as sensitivity to change—e.g., by comparing ODI scores before and after work-centered interventions. Fourth, our study is based on self-reported measures. Self-reported measures are subject to response biases (e.g., social desirability bias). This being said, it is well-known that self-reported measures are predictive of objective outcomes. For example, perceived occupational stress is prospectively associated with actual turnover [53], subjective assessments of health status and depressive symptoms predict mortality [54,55], and questionnaire-evaluated suicidal ideation is linked to attempted and completed suicides [56]. At a more general level, patients' inputs constitute key sources of information for researchers and practitioners in identifying symptoms experienced, etiological pathways, and treatment efficacy and side-effects [57,58]. Patients can, in fact, provide information that would be otherwise unavailable because neither technology nor any observer grants access to it [59]. An examination of how the ODI behaves vis-à-vis objective indicators of health and performance should, however, be put high on ODI users' agenda. Fifth, the ODI was examined only in its English and French versions. The ODI should be developed in other languages in the future.

Importantly, in the ODI, the link between depressive symptoms and work is approached through respondents' causal attributions. Causal attributions are an important aspect of how people make sense of their experiences and interpret the events they encounter, thereby contributing to shaping subsequent emotion, motivation, cognition, and action [60]. An idea underlying the use of causal attributions is that individuals are often in a privileged position to synthesize information on what goes wrong in their lives, especially when “low-observability” phenomena are at stake. In many cases, no one else has access to more or better information [59]. However, causal attributions of course go with a risk of misattributions—a risk that exists in the context of both self-reports and clinician-supervised anamnesis and etiological investigations. With respect to the reduction of that risk, we note that the ODI's instructions to respondents have been designed to discourage hasty attributions of depressive symptoms to work (see Table 1).

Through the guidance provided, respondents are primed to pay attention to both nonwork and unidentified depressogenic factors when responding. Respondents are invited to report symptoms only when they feel able to establish a link between their symptoms and their work with clarity. We underline that the reliance on individuals' causal attributions is commonplace in clinical and health research. Major nationwide surveys, such as the *Stress in America*™ survey commissioned by the American Psychological Association [61], have relied on individuals' causal attributions to identify leading sources of stress among the general public. Causal attributions are also key to the diagnosis of several disorders described in the *DSM-5*, such as posttraumatic stress disorder (PTSD), acute stress disorder (ASD), and adjustment disorders (ADs) [6]. The symptoms characterizing PTSD, ASD, and ADs derive their diagnostic value from being imputable to specific traumatic/stressful events. Overall, causal attributions have been fruitfully used in a variety of clinical and health research areas (e.g., common mental disorders, specific forms of self-harm) in the context of etiological investigations [57,62,63].

It might be argued that job-related suffering can already be investigated based on "burnout," a work-contextualized construct that has gained popularity over the last decades [64]. Unfortunately, the burnout construct is plagued by definitional and measurement problems that undermine its usability in occupational health research and practice [34,65,66]. First, the burnout syndrome is nosologically and diagnostically uncharacterized [6,67]. Consequently, cases of burnout cannot be identified and the prevalence of burnout cannot be estimated [37,68,69]. This state of affairs renders the burnout construct virtually impossible to employ in medical decision-making [12,34]. Second, even the most basic aspects of burnout's conceptualization and operationalization remain controversial [34,60,65,66]. As an illustration, from one study to another, burnout has been equated with exhaustion, psychological withdrawal, or professional inefficacy [65,69,70]. Burnout has constituted a catch-all label [71], with no consensual definition available despite nearly 50 years of sustained research. Third, with their narrow symptomatic focus [60,64], assessments of burnout overlook critical signs of suffering in the workplace such as suicidal ideation. Such shortcomings are disquieting because symptoms such as suicidal ideation are crucial to identifying workers who urgently need help [12,52]. As a reminder, there are no identified iatrogenic risks of assessing suicidality [45]. Finally, the extent to which individuals ascribe their burnout symptoms to their occupational activity is unclear. As an illustration, a recent study found that fewer than half of the examined workers considered their job to be the driver of their burnout symptoms [72]. These findings are consistent with the fact that burnout scales such as the Maslach Burnout Inventory include items that involve explicit causal attributions to the job (e.g., "I feel frustrated *by my job*"; "I worry that *this job* is hardening me emotionally"; "I feel burned out *from my work*") but also items that do not ("I feel like I'm at the end of my rope"; "I feel very energetic") [64]. All in all, such observations render the need for a renewed approach to job-related suffering salient.

As underlined by Schwenk and Gold (2018), "[c]linical depressive disorders have more solid grounding, methods of measurement, pathophysiological foundation, and empirically proven approaches to treatment of varying levels of severity [than burnout]" (p. 1110) [34]. The ODI captures burnout researchers' initial intent to assess work-attributed suffering [60,73] while (a) repatriating research on work-attributed suffering to the long-established and well-defined framework of depression research, (b) covering depressive symptoms in their variety (i.e., cognitive, affective, somatic aspects), (c) allowing for the assessment of critical signs of job-related suffering such as suicidal ideation, and (d) providing a diagnostic algorithm to identify likely cases of job-ascribed depression and estimate their prevalence. In the hands of occupational health specialists, the ODI has the potential to resolve many of the long-lamented difficulties linked to the use of the burnout construct [34,37,65].

Before concluding, two points may need to be rendered more explicit regarding what the ODI does and does not assess. First, the ODI intentionally assesses depressive symptoms *in connection to an attributed cause*, namely, perceived job stress. Consequently, investigating whether perceived job stress predicts ODI scores would involve a tautology—often referred to as the triviality or circularity trap [52]. Second, the ODI does *not* involve presuppositions as to the extent to which internal dispositions (e.g., personal incompetence) or external conditions (e.g., management styles setting contradictory or unattainable job objectives) should be held "responsible" for the emergence of the symptoms assessed. "Self-blame" and "self-excuse" issues are not in the scope of what the ODI assesses. In the ODI, causal attributions do not concern internal versus external explanatory factors; causal attributions concern a domain of life—work.[3] On a related note, it is worth remembering that the etiology of depression is best understood through the *dynamic interplay* between internal dispositions and external conditions [11–17].

This study suggests that the ODI constitutes a sound measure of work-attributed depressive symptoms. The ODI may help clinicians and epidemiologists identify, track, and treat job-ascribed depression more effectively. Ultimately, ODI-based research may contribute to informing occupational health policies and regulations.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jpsychores.2020.110249.

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