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The Oldenburg Burnout Inventory:

A Good Alternative to Measure Burnout (and Engagement)

Evangelia Demerouti

Utrecht University, Department of Social and Organizational Psychology,

Utrecht, The Netherlands

and

Arnold B. Bakker

Erasmus University Rotterdam, Department of Work and Organizational Psychology, Rotterdam,

The Netherlands

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Correspondence: Evangelia Demerouti, PhD, Utrecht University, Dept. of Social &  
Organizational Psychology, P.O. Box 80.140, 3508 TC Utrecht, The Netherlands. E-mail:

[E.Demerouti@uu.nl](mailto:E.Demerouti@uu.nl)

### The Oldenburg Burnout Inventory:

#### A Good Alternative for the Assessment of Burnout (and Engagement)

Burnout is a psychological syndrome that may emerge when employees are exposed to a stressful working environment, with high job demands and low resources (Bakker & Demerouti, 2007; Maslach, Schaufeli & Leiter, 2001). Although most scholars agree that burned-out employees are characterized by high levels of exhaustion and negative attitudes towards their work, there are different views on how the syndrome should be operationalized. The central aim of this chapter is to discuss the theoretical background of the recently introduced Oldenburg Burnout Inventory (OLBI; Demerouti, Bakker, Vardakou & Kantas, 2003), and to test the factor structure of the OLBI among Dutch employees working in one of two occupational sectors: health care and white collar work. Our central claim is that the OLBI is a reliable and valid measure for the assessment of burnout (and work engagement) that can be used as an alternative to the widely used Maslach Burnout Inventory (Maslach, Jackson, & Leiter, 1996).

#### *The Maslach Burnout Inventory*

The most commonly used instrument for the measurement of burnout is the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981, 1986; Maslach et al., 1996). The original MBI was based on the following definition of burnout (Maslach & Jackson, 1986, p.1): “Burnout is a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment that can occur among individuals who do ‘people work’ of some kind”. The MBI-Human Services Survey (MBI-HSS) is based on this three-dimensional conceptualization of burnout including the scales of emotional exhaustion, depersonalization and (reduced) personal accomplishment. The three-factor structure of the MBI-HSS has been shown to be invariant across occupations and national contexts (Lee & Ashforth, 1996; Schaufeli & Enzmann, 1998).

However, this version of the MBI has been developed exclusively for use in human services professions. Accordingly, the three sub-scales of the MBI-HSS are only applicable to employees who work with people. Hence, when studying burnout outside the human services, either the MBI should be adapted or an entirely new instrument needs to be developed.

In response to this call, Schaufeli, Leiter, Maslach and Jackson (1996) developed the Maslach Burnout Inventory - General Survey (MBI-GS). Based on the notion that emotional exhaustion, depersonalization and personal accomplishment can be broadened beyond the interpersonal domain that is characteristic for the human services, they included three more generic burnout dimensions that were labeled exhaustion, cynicism and professional efficacy, respectively. Clearly, these MBI-GS subscales parallel those of the original MBI-HSS. However, contrary to slight adaptations in the wording of items in earlier studies, the MBI-GS includes different items that refer to more general, non-social aspects of the job. Several studies have supported the invariance of the MBI-GS factor structure across various occupational groups (Bakker, Demerouti, & Schaufeli, 2002; Leiter & Schaufeli, 1996), and across nations (Richardson & Martinussen, 2004; Schutte, Toppinen, Kalimo & Schaufeli, 2000). Moreover, the studies with the MBI-GS suggest that the phenomenon and process of burnout takes the same form in occupations within and outside human service professions (Leiter & Harvie, 1998; Leiter, Harvie & Frizzell, 1998; Leiter & Schaufeli, 1996).

Unfortunately, the MBI-GS did not overcome one important psychometric shortcoming of the original version of the MBI, namely that the items in each subscale are all framed in the same direction. Accordingly, all exhaustion and cynicism items are phrased negatively, whereas all professional efficacy items are phrased positively. From a psychometric point of view, such one-sided scales are inferior to scales that include both positively and negatively worded items

(Price & Mueller, 1986). It can, for instance, lead to artificial factor solutions in which positively and negatively worded items are likely to cluster (cf., Doty & Glick, 1998). Indeed, some authors (Demerouti & Nachreiner, 1996; Lee & Ashforth, 1990) have criticized the MBI at this point. In addition, Lee and Ashforth (1990) have argued that the item wording can be seen as problematic since it offers an alternative explanation for the strong associations of exhaustion and depersonalization with psychological strain (generally negatively worded), and of personal accomplishment with perceptions of performance (generally positively worded).

### *The Oldenburg Burnout Inventory*

In the present chapter, we propose an alternative measure of burnout, which has originally been constructed and validated among different German occupational groups (Demerouti, 1999; Demerouti & Nachreiner, 1998). This new instrument – the Oldenburg Burnout Inventory (OLBI) – includes positively and negatively framed items to assess the two core dimensions of burnout: *exhaustion* and *disengagement (from work)*. Exhaustion is defined as a consequence of intense physical, affective and cognitive strain, i.e. as a long-term consequence of prolonged exposure to certain job demands. This conceptualization corresponds closely to other definitions of exhaustion (e.g., Aronson, Pines & Kafry, 1983; Shirom, 1989). Contrary to exhaustion as operationalized in the original MBI or MBI-GS, the OLBI covers not only affective aspects of exhaustion but also physical and cognitive aspects. This facilitates the application of the instrument to those workers who perform physical work and those whose job is mainly about processing information.

Whereas depersonalization in the original MBI refers to distancing oneself emotionally from service recipients (e.g., becoming impersonal, callous, hardening), cynicism refers mainly to (lack of) interest in the job and job meaningfulness. In a similar vein, disengagement in the

OLBI refers to distancing oneself from one's work in general, work object and work content (e.g., uninteresting, no longer challenging, but also "disgusting"). Moreover, the disengagement items concern the relationship between employees and their jobs, particularly with respect to identification with work and willingness to continue in the same occupation. Disengaged employees endorse negative attitudes toward their work objects, work content, or work in general. In our conceptualization, depersonalization is only one form of disengagement. More similarities exist between the cynicism and disengagement scale. However, the cynicism-items are more restricted in their content than the disengagement-items.

Professional efficacy is not included in the OLBI as a separate burnout dimension because it is not considered as a core dimension of burnout (Bakker, Demerouti & Verbeke, 2004; Green, Walkey & Taylor, 1991; Shirom, 1989), may also be interpreted as a possible consequence of burnout (Koeske & Koeske, 1989; Shirom, 1989), and is suggested to reflect a personality characteristic similar to self-efficacy (Cordes & Dougherty, 1993). The fact that personal accomplishment is the weakest burnout dimension in terms of significant relationships with other variables (cf., Lee & Ashforth, 1996; Schaufeli & Enzmann, 1998) is another indication of the exceptional status of this particular burnout dimension. Note that the negative instead of positive framing of professional efficacy items, which has been proposed in two recent MBI-studies (Bresó, Salanova, & Schaufeli, 2007; Schaufeli & Salanova, 2007), does not change the established finding that the professional efficacy dimension falls outside the burnout construct.

The factorial validity of the OLBI has been confirmed in studies conducted in Germany (Demerouti, Bakker, Nachreiner, & Ebbinghaus, 2002; Demerouti, Bakker, Nachreiner & Schaufeli, 2001), the United States (Halbesleben & Demerouti, 2005), and Greece (Demerouti et al., 2003). Results of these studies clearly showed that a two-factor structure with exhaustion and

disengagement as the underlying factors fitted better to the data of several occupational groups than alternative factor structures. Additionally, the convergent validity of the OLBI and MBI-GS has been confirmed in the United States (Halbesleben & Demerouti, 2005) and Greece (Demerouti et al., 2003). Following a multi-trait multi-method approach, both studies showed that the estimated correlation between the instruments was higher than  $r = .70$ . Moreover, the parallel scales of both instruments correlated  $r = .48$  or higher. The test-retest reliability of the OLBI has been confirmed for time lags of four months (Halbesleben & Demerouti, 2005). The exhaustion subscale was stable with the auto-correlation being  $.51$ , while the correlation between time 1 and time 2 disengagement was somewhat lower ( $r = .34$ ). Comparable test-retest reliabilities have been found for the MBI (Taris, Le Blanc, Schaufeli & Schreurs, 2005).

#### *Assessing Burnout and Engagement with the OLBI*

A distinctive feature of the OLBI compared to the MBI-GS (and the original MBI) is that the OLBI includes both negatively and positively worded items so that not only one end of the continuum, but both ends are represented. In other words, the exhaustion and disengagement subscales include items that refer to their opposites, namely vigor and dedication, respectively. Positively framed items should be reverse-coded if one wants to assess burnout. Alternatively, we propose that researchers interested in assessing *work engagement* can recode the negatively framed items to measure engagement with the OLBI.

Demerouti and her colleagues (2001, 2003) tested the hypothesis that instruments including positively and negatively worded items can produce artificial factor solutions in which items framed in one way are likely to cluster. Specifically, the two OLBI-studies used confirmatory factor analyses techniques to test the fit of a model with two latent factors: a factor indicated by all positively phrased items and a factor indicated by all negative phrased items

(independent of whether the items belonged to the exhaustion or disengagement dimensions). In both studies, this factor structure was clearly worse than the structure assuming exhaustion and disengagement as underlying factors. This indicates that the wording of the items does not create artificial factor solutions; rather it forces individuals to read and respond carefully to each individual item. Moreover, since the model with exhaustion and disengagement as underlying factors fitted well to the data, these studies suggest that the OLBI can be used to assess burnout *and* work engagement simultaneously.

Maslach and Leiter (1997) agree with our standpoint that burnout and engagement are two opposite poles of one continuum. They rephrased burnout as an erosion of engagement with the job, whereby energy turns into exhaustion, involvement turns into cynicism, and efficacy turns into ineffectiveness. In their view, engagement is characterized by energy, involvement and professional efficacy, which are the direct (perfectly inversely related) opposites of the three burnout dimensions. However, it should be noted that their MBI includes negative items only. Therefore, low mean levels of exhaustion and cynicism cannot be taken as being representative of vigor and dedication. For example, employees who indicate that they are not fatigued at all need not necessarily be full with energy.

Schaufeli and Bakker (2001, 2004) also assume that work engagement is the positive antithesis of burnout, but define and operationalize the engagement concept in its own right with the Utrecht Work Engagement Scale (UWES; Schaufeli & Bakker, 2003; Schaufeli, Salanova, González-Romá & Bakker, 2002). Work engagement is defined as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption. Vigor refers to high levels of energy and mental resilience while working. Dedication refers to a sense of significance, enthusiasm, inspiration, and pride. Vigor and dedication are the direct positive

opposites of exhaustion and cynicism, respectively. The third dimension of engagement is called absorption, which was found to be another constituting element of engagement in 30 in-depth interviews (Schaufeli et al., 2001). Absorption is characterized by being fully concentrated and happily engrossed in one's work, whereby time passes quickly.

González-Romá, Schaufeli, Bakker and Lloret (2006) used the MBI-GS and the UWES to test the hypothesis that items reflecting exhaustion-vigor and cynicism-dedication are scalable on two distinct underlying bipolar dimensions (labelled energy and identification, respectively). Using a non-parametric scaling technique, they showed that these core burnout and engagement dimensions can indeed be seen as opposites of each other along two distinct bipolar dimensions (energy vs. identification). It can be concluded from this study that negatively and positively framed items can be used to assess the core dimensions of burnout *and* engagement.

### *The Present Study*

The central aim of the present study is to examine the psychometric quality of the Oldenburg Burnout Inventory (Demerouti et al., 2003). In addition, we will investigate whether the OLBI can be used to assess both burnout and engagement. We will validate the OLBI in two broad occupational groups: health care professionals and white collar workers. The original definition of burnout included people work as a crucial determinant of burnout, but since the MBI was specifically constructed for the assessment of burnout in this sector, the burnout scores of health care workers could not be compared with other occupations. On the basis of the literature, we formulated the following hypotheses:

*Hypothesis 1:* The OLBI has a two-factor structure including the dimensions of exhaustion and disengagement.



*Hypothesis 2:* A factor structure including exhaustion and disengagement fits better to the data than a factor structure including two factors representing positively and negatively framed items.

*Hypothesis 3:* The factor structure of the OLBI is invariant across health care professionals and white collar workers.

*Hypothesis 4:* Levels of burnout are higher within the health care sector as compared to white collar workers.

## Method

### *Procedure and Samples*

The current study was conducted among eight different groups of Dutch employees, working in one of two occupational sectors (health care and white collar occupations). All studies (except one) were part of regular occupational health assessments. After informative meetings with representatives of the management, personnel departments, and/or employee/ employer committees, all employees received an invitation to participate by e-mail. The e-mail briefly explained the goal of the study, and emphasized the confidentiality and anonymity of the answers. Participants could log in on a secured website with a self-constructed password. They then filled in all questions, and received online feedback about their levels of burnout. Participants from the health care sector worked as a physician, in an academic hospital (response rate: 69%), or in one of two health care institutes (72% and 82%). The study among the physicians was not part of a regular occupational health assessment. The online instrument was part of the online service provided to members of the Royal Dutch Association of Doctors. Therefore, we could not calculate the response rate for this group. The white collar workers who

participated worked as public administrators (response rate 69%), trainers (70%), bank employees (43%), or at a publisher (56%).

The health care sample included 51.2% women and the mean age was 46 years (SD = 9.39). The most frequently mentioned educational level was high school (34.8%) followed by university (23.5%). Most participants had a partner and child(ren) (55.1%), or had a partner without child(ren) (28.0%). The white collar sample included 32.6% women and the mean age was 44.54 years (SD = 9.98). The majority of the participants had a college degree (53.6%). In total, 47.5% of the participants lived with their partner and child(ren), and 33.2% lived only with their partner.

### *Measure*

The *Oldenburg Burnout Inventory (OLBI)* was originally developed in German. For the present research, the OLBI was translated into Dutch and then back-translated to German. The OLBI measures burnout with two dimensions: exhaustion and disengagement. The eight items of the *exhaustion* sub-scale are generic, and refer to general feelings of emptiness, overtaxing from work, a strong need for rest, and a state of physical exhaustion. Example items are “After my work, I regularly feel worn out and weary”, and “After my work, I regularly feel totally fit for my leisure activities” (reversed) (1 = strongly disagree, 4 = strongly agree). *Disengagement* refers to distancing oneself from the object and the content of one’s work and to negative, cynical attitudes and behaviors toward one’s work in general. This sub-scale also comprises eight items, including “I frequently talk about my work in a negative way”, and “I get more and more engaged in my work” (reversed). The answering categories are the same as for exhaustion. For both sub-scales, four items are positively worded and four items are negatively worded.

### Results

Both OLBI dimensions were reliable. The reliability for was both for exhaustion and disengagement .85. There were no substantial differences between the two sectors regarding the internal consistencies of the scales. The bi-variate correlations between the two dimensions of exhaustion and disengagement were for health care and white collar workers .55 ( $p < .001$ ) and .57 ( $p < .001$ ), respectively.

#### *Exploratory Factor Analyses*

In order to test our first hypothesis (suggesting a two-factor structure), we first examined the factor structure of the OLBI with exploratory factor analyses (EFA; principal axis factoring using varimax rotation) for both sectors separately. The rotated factor structure for each sector is displayed in Table 1. Several findings of the EFA are worth noting. The OLBI has a clear structure in health care, with exhaustion items forming the first factor and disengagement items forming the second factor. Only item D6 had double loadings on both factors and therefore it is unclear to which factor it belongs. Results for the white collar workers are fairly similar (including the double loading of item D6). The only difference is that the first factor consisted of the disengagement items and the second factor referred to the exhaustion items. Taken together, these EFA-findings indicate that the factor structure of the OLBI is confirmed for both health care and white collar workers providing support for our first hypothesis.

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Insert Table 1 about here

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#### *Multi-Group Multitrait-Multimethod Analyses*

In a second step, the factor structure of the OLBI in the two sectors was tested by means of multi-group confirmatory factor analysis (CFA) using the AMOS 7 program (Arbuckle, 2006).

Specifically, CFA was used to test Hypothesis 2 stating that the responses on the OLBI items underlie the burnout components (exhaustion and disengagement) or the method of item framing (positive and negative item formulation. This relies on the criteria of Campbell and Fiske (1959) for multitrait-multimethod matrices and corresponds to the methodology proposed by Bagozzi (1993). Specifically, we tested the Trait model, which hypothesizes that the variation in the items can be explained fully by the underlying traits (the burnout components) plus errors, and without any differentiation among item framing. The burnout items were included as observed variables and the burnout components as correlated latent factors. Both exhaustion and disengagement were operationalized by eight items.

The Method model rests on the assumption that the structure is determined not by the burnout components but by whether items were positively or negatively formulated. This model does not take into consideration the different burnout components. It includes the 16 burnout items and two correlated latent method factors. The third model represents the multitrait-multimethod (MTMM) model or the correlated trait / correlated method model (Eid, 2000). This model combines both previous models. It includes again all burnout items and two categories of latent factors: (a) the two burnout components (traits) that are correlated; and (b) the two methods, which also correlate with each other. However, correlations between burnout components and methods were not included. Each item has therefore two loadings: one on a burnout dimension and one on a method factor. In the way we should be better able to uncover the factors that influence responses to the OLBI items than by considering them in separate models.

Table 2 displays the overall fit indices of the competing models for the multi-group MTMM analysis. In general, all models have large chi-squares in relation to the degrees of

freedom indicating a poor fit. This is not unexpected because the chi-square is dependent on sample size.

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 Insert Table 2 about here  
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The MTMM model had a satisfactory fit to the data (fit indices  $> .92$  and  $RMSEA = .05$ ) and proved to be superior to both the Trait and the Method model,  $\Delta \chi^2 (51) = 933.53, p < .001$  and  $\Delta \chi^2 (51) = 1845.80, p < .001$ , respectively. This means that the fit of the MTMM model became poorer when the burnout dimensions were eliminated from the MTMM model (cf., the Method model), than when the two method factors, namely positive and negative wording factors, were eliminated (cf., the Traits model). In a similar vein, the proposed Trait model including the dimensions of exhaustion and disengagement was better than the Method model including the positively and negatively wording factors (its  $\chi^2$  value is 912.21 points higher with equal degrees of freedom). Thus, while differentiation between both the burnout dimensions and the item formulation seems to be substantial, the differentiation between the burnout dimensions is more important. This substantiates Hypothesis 2. Additionally, for health care employees, all items had significant loadings on both types of latent factors, the burnout dimensions and the method factors. For white collar workers, we found that all items loaded on both kinds of latent factors save two exceptions: E4 and E7 had non-significant loadings on the exhaustion factor. In general, the pattern of factor loadings suggests that the loadings were somewhat higher for the two method factors than for the two burnout dimensions.

In order to test Hypothesis 3 (i.e. the factor invariance of the OLBI across health care and white collar workers), we imposed three types of constraints in the MTMM model, representing

three different nested models. Specifically the first model contained equal correlations between the latent factors for both sectors, the second model contained equal factor loadings on the burnout dimensions and the third model contained equal factor loadings on the method factors for both sectors. As can be seen in Table 2, constraining the correlations between the factors to be equal in both groups did not impair the fit of the model to the data, Delta  $\chi^2(2) = .60, n.s.$  Similarly, constraining the factor loadings on the burnout factors to be equal for both sectors did not result in a worse model fit, Delta  $\chi^2(14) = 6.61, n.s.$  However, constraining the factor loadings on the method factors to be equal resulted in a worse model fit, Delta  $\chi^2(14) = 31.62, p < .01.$  These findings indicate that the factor structure of the OLBI is similar for both health care and white collar workers. Both sectors differ, however, in the influence that item framing has on the responses to the OLBI items.

#### *Mean Score Differences*

The two sectors differed significantly (at  $p < .001$ ) in their mean scores on the OLBI dimensions. Specifically, health care workers experienced significantly higher levels of exhaustion (mean = 2.53) and disengagement (mean = 2.38) than white collar workers (mean for exhaustion = 2.28; mean for disengagement = 2.21). This substantiates Hypothesis 4. Inspection of the mean scores on the item level showed that compared to white collar workers, health care workers more frequently agreed with item E1 and less frequently agreed with item D8. Additionally, compared to white collar workers, health care workers more frequently agreed with items E4 and D6 and disagreed with the items E3 and D1.

#### Discussion

This study is important in that it provides evidence for the validity of an alternative burnout measure for health care and white collar workers. Instead of testing the levels and the

factor structure of burnout within health care only, we examined simultaneously workers from a related sector which provided useful insights regarding the levels of burnout, the factor structure of the OLBI and the underlying factors explaining responses to OLBI items in the different sectors.

The findings clearly indicate that the OLBI is a reliable instrument including two moderately high correlating dimensions. The reliability was both for exhaustion and disengagement  $\alpha = .85$ . Results further confirmed that both sectors differed significantly in the levels of burnout. Health care workers experienced significantly higher levels of burnout (both exhaustion and disengagement) than white collar workers. This corresponds with the findings of Demerouti (1999), who found that health care workers reported higher levels of disengagement than white collar workers (air traffic controllers). These differences may be due to the worse working conditions that health care workers are exposed to compared to white collars. In comparison to white collar workers, health care professionals reported to be more frequently tired before going to work and after finishing work. This suggests that their job demands are so high that they cannot recover during off-job time. Moreover, they experience a kind of disillusionment towards their work in general because they do not find interesting aspects in their job any more and they stop feeling engaged in what they do. Demerouti's (1999) study indicated that health care workers are confronted with higher physical and emotional demands and lower job resources including task variety, feedback and participation in decision making than white collar workers. The combination of high job demands and low job resources has been found to be related to high exhaustion and disengagement (Bakker & Demerouti, 2007; Demerouti et al., 2001; Peterson et al., in press).

Results of the EFA and the CFA confirmed that the OLBI has a two-factor structure in both sectors. For both health care and white collar workers, exhaustion and disengagement emerged as clear factors with all items loading on the intending factor except for D6. This item had double loadings and therefore cannot be clearly classified in one of the two burnout dimensions. Future studies with the OLBI within these sectors could drop this item since the scale would have a clearer factor structure and would still remain reliable (with Cronbach's  $\alpha = .84$ ). An important finding of the CFA was not only the confirmation of the suggested two-factor structure for both health care and white collar workers, but also that the factor structure was *invariant* because the factor loadings did not differ between the sectors. Also Demerouti (1999) found that the factor loadings of the OLBI items did not differ substantially between a variety of health care, production and white collar workers.

Perhaps the most interesting question answered by the present study is whether scales that include both positively and negatively formulated items to operationalize the same dimensions include two types of factors, namely the theoretical dimensions and the dimensions concerning the wording of the items. Results suggest that both types of factors influence item responses (at least regarding the OLBI). Failing to differentiate between the exhaustion and disengagement factor resulted in a very unsatisfactory model fit which was substantially worse than failing to differentiate between positively and negatively wording factors. Thus, the underlying, theoretical dimensions of the OLBI were confirmed. However, the results of the MTMM model showed that both kinds of factors are important and that eliminating the method factors resulted in a worse fit of the model to the data. Moreover, the OLBI items had significant loadings on both kinds of factors. This suggests that individuals do not only respond to the



content of the items but are also sensitive to how the content is presented (the positive or negative framing of the items).

González-Romá et al. (2006) offer a statistical explanation for this finding. Accordingly, negatively framed items are not highly and linearly related to positively framed items but show high linear relationships with other negatively framed items. This is particularly the case when Likert-type scales are used. The consequence is that two clusters of highly linearly related items can emerge. Therefore, it is suggested to use non-parametric ways of analyses in future studies with the OLBI, instead of (confirmatory) factor analysis. By applying Mokken analysis, González-Romá et al. (2006) were able to find that exhaustion-vigor and cynicism-dedication were bipolar dimensions, called energy and identification dimensions respectively.

The implication of this discussion is that using one-sided scales makes things simpler because we can never investigate the influence of factors like item framing on the individual responses. However, following such an approach we can never recover the problem that we find relationships between constructs simply because their items are framed the same way. Since the OLBI includes items that measure the whole continuum for both dimensions ranging from vigor to exhaustion and from dedication to disengagement it can be used to measure both burnout and its opposite, work engagement. Energy scores can be obtained adding the four positive, vigor items and the four recoded, exhaustion items. A high score on energy indicates a high level of vigor, whereas a low score on energy indicates a high level of exhaustion. Analogously, identification scores can be obtained by adding the four positively framed engagement items and the four recoded disengagement items. A high score on identification indicates a high level of dedication, whereas a low score on identification indicates a high level of disengagement.

*Conclusion*

In conclusion, this study provided validation evidence for the Oldenburg Burnout Inventory, a measure that is designed to overcome shortcomings of the Maslach Burnout Inventory. While additional validation research is warranted, the present study among a variety of health care and white collar organizations finds support for the internal consistency and factorial validity of the OLBI. Moreover, the present study contributes to the discussion regarding the measurement of burnout and its hypothetical opposite state of work engagement. Our results suggest that the OLBI is able to capture the core dimensions of burnout and its opposite. The differentiation between the dimensions of vigor-exhaustion and dedication-disengagement is more crucial than the differentiation between positively and negatively worded items (that the existing measurement instruments use to measure work engagement and burnout respectively). In our view, this is an important contribution to the literature, as it offers researchers an alternative measure of burnout *and* work engagement with balanced item wording and expanded conceptualization of exhaustion and disengagement/cynicism. The instrument can be used for virtually every job, including health care, and is sensitive enough to uncover differences between jobs. Our study confirms that the classical burnout occupations can be found in health care. Health care professionals experience higher levels of burnout than the broader human service sector with different types of white collar work.

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*Table 1*  
OLBI item/factor loadings

|                                | Health care |             | White collar |             |
|--------------------------------|-------------|-------------|--------------|-------------|
|                                | EX          | DE          | EX           | DE          |
| D1: Interesting aspects        |             | <b>.68</b>  |              | <b>.69</b>  |
| D2: Devaluation of work        | .37         | <b>-.59</b> | .34          | <b>-.55</b> |
| D3: Mechanical execution       |             | <b>-.59</b> |              | <b>-.50</b> |
| D4: Challenging                |             | <b>.73</b>  |              | <b>.76</b>  |
| D5: Inner relationship         |             | <b>-.57</b> |              | <b>-.68</b> |
| D6: Sick about work tasks      | .49         | <b>-.45</b> | -.44         | <b>.48</b>  |
| D7: No other occupation        |             | <b>.61</b>  |              | <b>.59</b>  |
| D8: More engaged               |             | <b>.62</b>  |              | <b>.66</b>  |
| E1: Tired before work          | <b>.64</b>  |             | <b>.58</b>   |             |
| E2: Longer times for rest      | <b>.69</b>  |             | <b>.65</b>   |             |
| E3: Manageable tasks           | <b>-.61</b> |             | <b>-.62</b>  |             |
| E4: Emotionally drained        | <b>.58</b>  | -.40        | <b>.63</b>   | -.35        |
| E5: Fit for leisure activities | <b>-.67</b> |             | <b>-.62</b>  |             |
| E6: Worn out                   | <b>.72</b>  |             | <b>.72</b>   |             |
| E7: Tolerable workload         | <b>-.50</b> |             | <b>-.43</b>  |             |
| E8: Feel energized             | <b>-.50</b> | .38         | <b>-.47</b>  | .36         |

*Note:* The items above are not presented in full, but in coded form. The English translation of the OLBI is available from the first author on request. DE = Disengagement Scale, EX = Exhaustion Scale.



Table 2

*Indices of Overall Fit for Alternative Factor Structures of the OLBI for Health Care (N = 979), and White Collar Workers (N = 644)*

| Model                    | $\chi^2$ | df  | p    | GFI | RMSEA | NFI | CFI | IFI |
|--------------------------|----------|-----|------|-----|-------|-----|-----|-----|
| Traits                   | 1663.90  | 206 | .001 | .88 | .07   | .84 | .86 | .86 |
| Method                   | 2576.17  | 206 | .001 | .76 | .08   | .75 | .76 | .77 |
| MTMM                     | 730.37   | 172 | .001 | .95 | .05   | .93 | .95 | .95 |
| Equal correlations       | 730.97   | 174 | .001 | .95 | .05   | .93 | .94 | .95 |
| Equal loadings - burnout | 936.98   | 186 | .001 | .93 | .05   | .91 | .93 | .93 |
| Equal loadings - method  | 761.99   | 186 | .001 | .94 | .04   | .93 | .94 | .94 |
| Null                     | 10281.68 | 240 | --   | .34 | .16   | --  | --  | --  |

*Note.*  $\chi^2$  = chi-square; df = degrees of freedom; p = significance level; GFI = goodness-of-fit index; RMSEA = root mean square error of approximation; NFI = normed fit index; CFI = comparative fit index; IFI = incremental fit index.