



# Burnout as a State: Random-Intercept Cross-Lagged Relationship Between Exhaustion and Disengagement in a 10-Day Study [Response to Letter]

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Beata A Basinska <sup>1</sup>  
Ewa Gruszczyńska <sup>2</sup>

<sup>1</sup>Faculty of Management and Economics, Gdansk University of Technology, Gdansk, Poland; <sup>2</sup>Faculty of Psychology, University of Social Sciences and Humanities, Warsaw, Poland

## Dear Editor,

We are writing in response to the Letter to the Editor by Block, Bair, and Carillo<sup>1</sup> regarding our study,<sup>2</sup> which took a multilevel approach to examine cross-lagged and co-existing relationships between exhaustion and disengagement, measured daily for ten consecutive working days using the Oldenburg Burnout Inventory (OLBI).<sup>3,4</sup> We assessed the job burnout symptoms using only eight items, all of them worded negatively.<sup>1</sup>

Following Block, Bair, and Carillo's<sup>1</sup> request, we are happy to provide supplementary cross-sectional results from the first day of our study. The mean and standard deviation was  $2.34 \pm 0.99$  for exhaustion,  $2.10 \pm 0.80$  for disengagement, and the *t*-paired test was statistically significant ( $t(234) = 5.47, p < 0.001$ ). In addition, a higher level of exhaustion was associated with a higher level of disengagement (Pearson's  $r = 0.72, p < .001$ ).

Furthermore, we have datasets from other studies<sup>5-8</sup> on burnout, in which the first author was involved, that use OLBI as a measurement tool and we are presenting similar analyses based on them as well. The summary is provided in Table 1.

In the study among civil servants,<sup>5</sup> we examined the shape of the relationship between positivity (i.e., the proportion of positive to negative job-related emotions) and job burnout using a cross-sectional and longitudinal approach. Job burnout was measured twice, at a four-month interval. We observed that, at each measurement point, the mean value for exhaustion was significantly higher than for disengagement. This is consistent with results from an academic anesthesia department reported by Block, Bair, and Carillo.<sup>9</sup> We also examined the relationship between positivity and job burnout among a mixed group of police officers and firefighters.<sup>6</sup> Contrary to the aforementioned studies, the results of this study indicated that the mean value for disengagement was higher than for exhaustion. However, it is worth noting that the gender distribution of each group differed greatly. While the majority of civil servants were women (75%), the vast majority of uniformed officers were men (94%). Also, the characteristics of these professions differ substantially. In another study, Basinska, Wiciak, and Dąderman<sup>7</sup> examined the relationship between fatigue, emotion, and job burnout among a group of police officers (15% women) where the results also showed

Correspondence: Beata A Basinska  
Faculty of Management and Economics,  
Gdansk University of Technology,  
Narutowicza 11/12, Gdansk 80-233,  
Poland  
Tel +48 58 647 1899  
Fax +48 58 347 1861  
Email Beata.Basinska@pg.edu.pl

**Table 1** The Difference Between Levels of Exhaustion and Disengagement and the Correlation Between Both Components of Job Burnout in a Cross-Sectional Measurement

Authors	Group	Exhaustion		Disengagement		t	df	p	r
		M	SD	M	SD				
Basinska and Gruszczynska <sup>5</sup>	Civil servants N = 238 time 1 <sup>a</sup>	3.10	1.02	2.68	0.92	9.79	237	< 0.001	0.79
	Civil servants N = 231 time 2 <sup>a</sup>	3.06	0.94	2.69	0.90	9.13	230	< 0.001	0.77
Basinska and Gruszczynska <sup>6</sup>	Police officers and firefighters N = 175 <sup>b</sup>	2.11	0.57	2.17	0.49	-2.41	167	0.017	0.82
Basinska, Wiciak, Dąderman <sup>7</sup>	Police officers N = 169 <sup>b</sup>	2.18	0.65	2.30	0.55	-3.10	168	0.002	0.70
Basinska and Dąderman <sup>8</sup>	Police officers N = 234 <sup>b</sup>	2.25	0.44	2.27	0.51	-0.76	230	0.447	0.55

**Notes:** <sup>a</sup>OLBI-8, five-point scale from 1 (strongly disagree) to 5 (strongly agree); <sup>b</sup>OLBI-16, four-point scale from 1 (agree) to 4 (disagree).

**Abbreviations:** M, mean; SD, standard deviation; t, t-paired test; df, degrees of freedom; p, p-value; r, Pearson's correlation coefficient.

that the level of disengagement was higher than the level of exhaustion. Furthermore, Basinska and Dąderman<sup>8</sup> examined how work values were associated with job burnout and work engagement among police officers (21% women) and found no significant difference between levels of exhaustion and disengagement. Therefore, the findings of cross-sectional comparisons may be influenced by profession as well as gender, or else other contextual and sample-specific factors, and should not be interpreted as universal. Nonetheless, the result replicated in all these studies was a moderate to strong positive correlation between exhaustion and disengagement (range of Pearson's correlation coefficient from 0.55 to 0.82).

Additionally, since Baka and Basinska<sup>4</sup> developed stanine norms for exhaustion and disengagement for the Polish version of OLBI, it is possible to evaluate the level of burnout in a more objective manner for the cited studies. According to these norms, scores above 2.75 for exhaustion and above 2.72 for disengagement indicate a high level of these components. Consequently, the uniformed officers reported, on average, a moderate level of exhaustion and disengagement. However, it should be emphasized that a high level of job burnout (above the cut-off point) is not equivalent to a clinical stage of burnout. In fact, prior studies suggest that exhaustion, in particular, may be strongly associated with a clinical diagnosis of burnout.<sup>10–12</sup> Thus, possible differences in the stage of burnout development between samples is another variable that should be taken into account when interpreting the results.

We would like to thank Block, Bair, and Carillo<sup>1</sup> for their letter as it allowed us to situate our study in a broader context and present additional results for comparison. We also believe that even relatively straightforward analysis may inspire future studies on burnout structure and dynamics, especially if they result in research questions addressed by more advanced models that decompose burnout variance into between-person differences and within-person fluctuations.

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## Disclosure

The authors declare that there is no conflict of interest regarding this communication.

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