

Measuring Burnout in Employed University Students: White Paper, Phase II

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First described by Freudenberger in 1974, the burnout syndrome (or “burnout”) has emerged as a key construct in the field of organizational research (Schaufeli, Leiter, & Maslach, 2009). Burnout is characterized as a psychological condition resulting from prolonged exposure to chronic emotional and cognitive stressors in the workplace (Maslach, 2003; Woodhead, Northrop, & Edelstein, 2016). Past research has shown burnout to be related to negative organizational (e.g., poor job performance, absenteeism, and turnover intention; Demerouti, Bakker, & Leiter, 2014; Manochehri, & Malekmohammadi, 2015) and individual outcomes (e.g., physical exhaustion and depression; Alarcon, 2011; Maslach, Schaufeli, & Leiter, 2001).

Though burnout is often emphasized with employees in their workplace, limited research has assessed employed student burnout. Many university students report experiences of burnout (Maslach & Jackson, 1981) as they face stress from heavy course loads and time management, and may seek part-time employment (Warren, Lapore, & Mare, 2010) to defray costs associated with attending university (Robotham & Julian, 2006). Unlike non-student employees or unemployed students, employed students have unique challenges in that they must juggle work, academic, and life domains at once. This juggling of multiple domains may make employed students particularly prone to burnout and its consequences.

To the authors’ knowledge, no current measures of burnout have been specifically designed for, or validated using, an employed student sample. Though several measures for student burnout currently exist, such measures, including the Copenhagen Burnout Inventory adapted for students (CBI-SS; Campos, Carlotto & Maroco, 2013), Maslach Burnout Inventory-

Student Survey (MBI-SS; Maslach & Florian, 1988), the Bergen Burnout Inventory (Salmela-Ara., Rantanen, Hyvonen, & Tilleman, 2010), and the Oldenburg Burnout Inventory adapted for students (OLBI-SS; Demerouti, Bakker, Vardakou & Kantas, 2003) have been adapted from existing burnout measures that were not originally developed for use with student samples. These adapted measures are limited in that some include subscales that have low-internal consistency, only assess academic related burnout, and included items that are double-barreled and culturally specific. Further, previous research has been criticized for being atheoretical, as many burnout studies started with the MBI theory without testing it in new contexts and with new samples (Schaufeli & Van Dierendonck, 1993).

Current Study

The current study reports on Phase 2 of an ongoing effort to develop and validate a measure of Employed Student Burnout. In Phase 1 of this project (see Kartolo, Schrammer, Rauti, & Kwantes, 2019), a 128-item measure was generated based on a theoretical conception of stressors in both employment and academic environments, and was pilot tested on employed undergraduate students. The findings from Phase 1 indicated that the measure consists of two domains: apathy and exhaustion, with several salient items loading on each factor.

The purpose of the current study was to validate the Employed Student Burnout measure. In the current study, the initial 128-item measure was shortened and administered to a new sample of employed undergraduate students. Participants also completed measures theoretically related to and distinct from burnout to demonstrate preliminary evidence for convergent and divergent validity.

Method

Data Cleaning

The initial dataset consisted of a sample of 368 participants. After removing cases in which participants responded to the survey twice ($n = 12$), had excessive missing data ($n = 3$), did not start the survey after signing up ($n = 8$), and indicated they were not employed at the time of study ($n = 7$), the final dataset consisted of 331 participants. Little's MCAR test showed that the data were missing completely at random ($p = .10$) and missing values were replaced using multiple imputation.

Participants

Participants in this study were recruited from a pool of undergraduate students at a mid-sized Canadian university. The majority of the sample self-identified as women (81.3%), with 18.1% identified as men, and 0.6% non-binary. The average age of participants was 21 years old ($SD = 3.51$). The sample consisted of 73.7% White or European-Canadian, 2.7% Black-Canadian, 2.4% East Asian, 5.7% South Asian, 11.2% Middle Eastern, 0.9% Latin-Canadian, and 3.3% mixed race. Most students were in their second year of university (31.4%), while 15.4% of participants were in their first year, 24.2% in their third year, and 28.6% in their fourth year or above. The majority of the sample also indicated that they volunteer (59.8%).

Procedure

This study was approved by the university's Research Ethics Board. Participants provided their consent electronically by indicating their agreement to participate and then completed a demographic questionnaire followed by the burnout measure and six additional measures (described below). Participants were compensated with course bonus points.

Measures

Employed Student Burnout Measure. The Employed Student Burnout Measure consisted of 27 items that were retained from the initial measure developed in Phase 1 of this

study (Kartolo, Schramer, Rauti, & Kwantes, 2019). Example items included “I feel my work is meaningless” and “Nothing helps me feel rested.” Items are answered on a scale from 1 (*Never*) to 5 (*All the time*) with higher scores indicating more burnout. It should be noted that 28 items were intended to be retained from the initial measure but one item (“I feel disconnected at work”) was unintentionally left out when creating the online survey.

Maslach Burnout Inventory. The Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981) is a 16-item measure of burnout. This scale measures three domains including emotional exhaustion, depersonalization, and decreased personal accomplishment. Example items on this scale include “I feel emotionally drained from work,” “I just want to do my job and not be bothered” and “I have become more cynical about whether my work contributes anything.” Items are answered on a 7-point scale from 1 (*Never*) to 7 (*Everyday*), with higher scores indicating more burnout. Internal consistency as indicated by Cronbach’s alpha was good ($\alpha = .80$).

Overall Burnout. A single-item asking “How burned out do you feel from work?” was included to assess participants' overall level of burnout from work. This item was answered on a 7-point scale, ranging from 1 (*Not at all*) to 7 (*Completely*) with higher scores indicating more burnout.

Fatigue Assessment Instrument. The Fatigue Assessment Instrument (FAI; Schwartz, Jandorf, & Krupp, 1993) is a 29-item measure of fatigue severity, situation-specific fatigue, consequences of fatigue, and responsiveness to rest or sleep. Example items include “I feel drowsy when I am fatigued,” “Long periods of inactivity brings on my fatigue” and “Fatigue interferes with my physical functioning.” Items are answered on a 7-point scale from 1

(*Completely disagree*) to 7 (*Everyday*), with higher scores indicating more fatigue. Internal consistency as indicated by Cronbach's alpha was excellent ($\alpha = .92$).

Apathy Evaluation Scale. The Apathy Evaluation Scale (AES; Marin, Biedrzycki, & Firinciogullari, 1991) is an 18-item measure of apathy and motivation. Example items include "I am interested in things" and "I have motivation." Items are answered on a 4-point scale ranging from 1 (*Not at all*) to 4 (*A lot*), with higher scores indicating more apathy. Internal consistency as indicated by Cronbach's alpha was good ($\alpha = .83$).

Bored Behaviour Measure. The Bored Behaviour Measure (van Hooft & van Hooft, 2014) is a 6-item measure of occupational boredom. Example items include "I work slowly" and "I take long breaks." Items are answered on a 5-point scale ranging from 1 (*Never*) to 5 (*Always*) with higher scores indicating more boredom. Internal consistency as indicated by Cronbach's alpha was good ($\alpha = .71$).

Occupational Fatigue Exhaustion Recovery Scale. The Occupational Fatigue Exhaustion Recovery Scale (Winwood, Winefield, Daweson, & Lushington, 2005) is a 15-item measure that assesses fatigue and strain in work and home related contexts. Example items include "I often dread waking up to another day of my work" and "My work drains my energy completely everyday." Items are answered on a 7-point scale, ranging from 0 (*Strongly disagree*) to 6 (*Strongly agree*) with higher scores indicating more exhaustion. Internal consistency as indicated by Cronbach's alpha was acceptable ($\alpha = .75$).

The Work Engagement Scale-9. The Work Engagement Scale-9 (Schaufeli, Bakker, & Salanova, 2006) is a 14-item measure of engagement. Engagement is measured by three domains including vigor, dedication, and absorption. Example items include "At my work, I feel bursting with energy," "I am enthusiastic about my job" and "I am proud of the work that I do." Items are

answered on a 7-point scale, ranging from 0 (*Never*) to 6 (*Always*) with higher scores indicating more engagement. Internal consistency as indicated by Cronbach's alpha was excellent ($\alpha = .93$).

Results

Confirmatory Factor Analysis

A confirmatory factor analysis (CFA) was performed in RStudio 3.3.2 using the Lavaan package. Four models were tested (see Table 1 for model fit statistics). The chi-square statistic, incremental (i.e., CFI, TLI), and absolute (i.e., SRMR, RMSEA) fit indices were assessed. The cut-off values recommended by Pituch and Stevens (2016) were used to determine good model fit.

In the first model tested, the factor structure was specified based on the theoretical conceptualization of burnout and the exploratory factor analysis findings from Phase 1 of this study. Model 1 included all 27 items specified on their respective factors. The fit statistics for Model 1 did not meet the recommended cut-off values, indicating that the model fit the data poorly. Model 2 was specified as a bi-factor version of Model 1. The bi-factor version tested whether the items in the scale measure a generalized burnout factor where commonality is shared by the apathy and exhaustion facets, as well as specific domains of apathy and exhaustion where each facet has their own unique variance for burnout over and above the general factor. Though the bi-factor version improved the model fit, six items on the apathy facet were no longer significant (p values $> .05$). In Model 3, these six apathy items were removed. Though model fit improved on all indices, three items were no longer significant on the exhaustion facet (p values $> .05$). In Model 4, these three exhaustion items were removed. Model 4 (shown in Figure 1) was the best fitting model; the standardized parameter estimates for the factor loadings were all

statistically significant (p values $< .001$; see table 2) and all fit indices met or exceeded recommended cut-off values.

Table 1. Model Fit Indices

Model	χ^2	df	CFI	TLI	RMSEA [90% CI]	SRMR	AIC
Model 1	911.92	323	.83	.82	.07 [.07 - .08]	.07	22440.09
Model 2	693.02	296	.89	.87	.06 [.06 - .07]	.05	21195.24
Model 3	371.14	167	.93	.91	.06 [.05 - .07]	.05	17177.80
Model 4	254.03	116	.94	.93	.06 [.05 - .07]	.04	14790.81

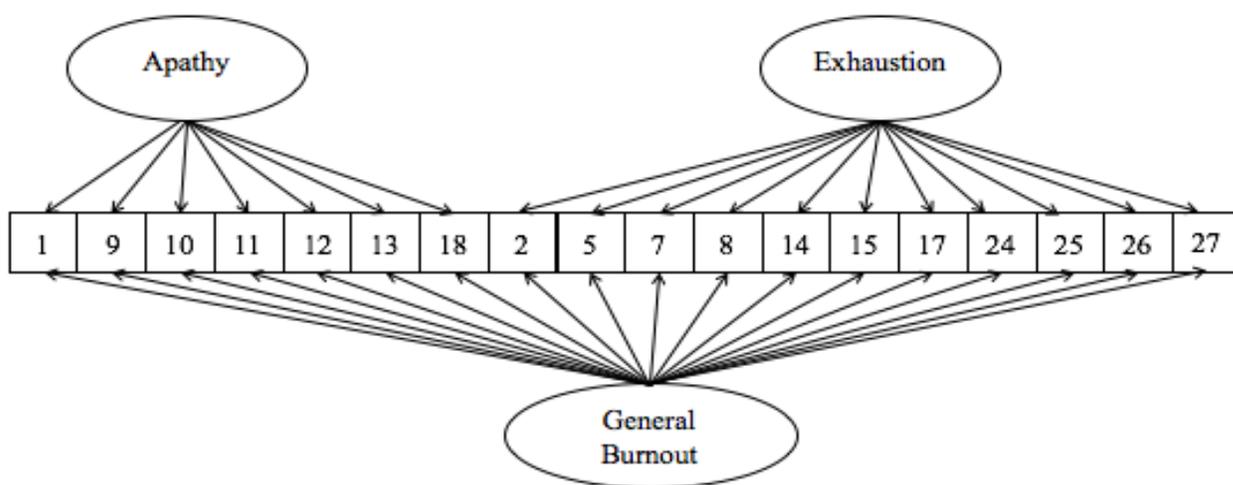


Figure 1. Bi-Factor Model of the Employed Student Burnout Scale.

Table 2. Standardized Latent Variable Factor Loadings

Burnout Items	General Burnout	Apathy	Exhaustion
1. I feel my work is meaningless.	.41	.42	
9. I just want to do nothing at work.	.66	.34	
10. I do not look forward to going into work.	.59	.48	
11. I am not motivated at work.	.57	.44	
12. Work is not fulfilling for me.	.59	.71	
13. I feel as though I am hitting a wall at work.	.64	.48	
18. I feel dissatisfied with work.	.75	.49	
2. I am unable to relax outside of work because of my work.	.55		.27
5. I think my work is making me sick.	.62		.15

7. I do not have the energy to complete my work.	.54	.17
8. I feel like work just never stops.	.75	.24
14. I cannot concentrate.	.56	.32
15. I feel mentally exhausted from work.	.75	.29
17. I feel physically exhausted from work.	.79	.21
24. Thinking about my job makes me tired.	.83	.27
25. No matter what I do, I always feel tired.	.63	.83
26. Nothing helps me feel rested.	.47	1.0
27. I have difficulty sleeping.	.46	.57

Reliability of the Employed Student Burnout Measure was assessed, and evidence for concurrent, convergent and discriminant validity was examined (see Table 3 for descriptive information, inter-correlations, and reliability estimates) and is reported below.

Employed Student Burnout Measure Information

The final 18-item measure consisted of a general burnout factor and separate domains of apathy and exhaustion. The apathy factor includes 7 items related to lack of motivation, desire or attachment to work, while the exhaustion factor includes 11 items related to depletion of physical and emotional resources required to cope with demands of work. Coefficient omega hierarchical, a suitable reliability measure for bi-factor structures (Rodriguez, Riese, & Haviland, 2016), was calculated. The general scale demonstrated strong reliability ($\omega_H = .93$). Reliability for the apathy and exhaustion subscales were strong $\omega_{Hsa} = .90$ and $\omega_{Hse} = .90$, respectively.

Validation

Concurrent Validity. It was expected that the Employed Student Burnout Measure would be positively and strongly correlated with the Maslach Burnout Inventory (MBI) and the single item measuring overall burnout. The relationship between the general factor and subscales

with both burnout measures were in the expected direction and strength, demonstrating concurrent validity.

Convergent Validity. The Employed Student Burnout Measure was expected to be positively correlated with the Fatigue Assessment Instrument (FAI) and the Occupational Fatigue Exhaustion Recovery Scale (OFERS). The relationships were in the expected directions, though the general factor and subscales were more moderately correlated with the FAI and more strongly correlated with the OFERS. This suggests that the current measure of burnout taps into aspects similar to general fatigue and work-related fatigue. The Apathy Evaluation Scale (AES) had a strong positive correlation with general burnout, along with its two subscales. High scores on the AES indicate lower levels of apathy so the positive correlation was unexpected and did not support convergent validity. Phase 3 of this study will revisit this unexpected finding, and in addition, include other measures of apathy.

Divergent Validity. The Employed Student Burnout Measure was expected to be unrelated or weakly related to the construct of boredom and work engagement. The findings show that general burnout and the subscales of apathy and exhaustion were positively but weakly correlated with the Bored Behavior Measure. Further, general burnout and the subscales of apathy and exhaustion were negatively and weakly to moderately correlated with the Work Engagement Scale. These findings support that boredom and work engagement are related but can be distinguishable from the construct of burnout in the current measure.

Table 4
Descriptive Statistics, Zero-Order Correlations, and Alphas

	1	2	3	4	5	6	7	8	9	10
1. General Burnout	.93									
2. Apathy	.88**	.90								
3. Exhaustion	.90**	.66**	.90							
4. Overall Burnout	.63**	.51**	.66*	-						
5. MBI	.71**	.64**	.70**	.65**	.80					
6. FAI	.61**	.48**	.65**	.57**	.51**	.91				
7. Boredom	.33**	.29**	.26**	.21**	.15**	.27**	.77			
8. Occupational Fatigue	.72**	.62**	.74**	.77**	.68**	.62**	.22**	.93		
9. AES	.47**	.45**	.40**	.28**	.27**	.41**	.24**	.41**	.83	
10. Engagement	-.55**	-.64**	-.33*	-.33**	-.34**	-.29**	-.16**	-.43**	-.51**	.93

Note. Overall burnout = general burnout question; MBI = Maslach Burnout Inventory; FAI = Fatigue assessment instrument; AES = Apathy Evaluation Scale. Omega Hierarchical Coefficients (i.e. general burnout, apathy, and exhaustion) and Cronbach Alpha's are **bolded**.
** $p < .001$.

Discussion

This study aimed to validate a novel measure of employed student burnout. The measure demonstrated good reliability and was validated using an employed student sample. The results from this research confirmed the scale assesses domains of apathy and exhaustion, and a third factor of generalized burnout. This differs from the predominant model of burnout (MBI: Maslach & Florian, 1988) as neither cynicism nor a lack of a sense of accomplishment emerged in the employed student sample, neither did apathy nor exhaustion function as a lower order factor of generalized burnout as a bi-factor model provided the best fit to the data.

As a bi-factor model, the results from this research support both a two-dimensional and a unidimensional model of burnout for employed students. The single factor model corresponds to the model proposed by Pines and Aronson (1998). Exhaustion was measured and described as a combination of mental and physical exhaustion, while apathy may be viewed as emotional exhaustion. The model with the best fit to the data was a bi-factor model, however, suggesting that in some ways apathy stands apart and distinct from mental and physical exhaustion.

In a bi-factor model, each item is a reflective indicator of both the general, overarching factor as well as the more specific factors (Wiesner & Schanding, 2013). Each item in the measure is reflective of both burnout generally, as well as one of the more narrowly defined elements of “exhaustion” and “apathy.” This understanding of burnout as a bi-factor model is important as bi-factor models can reduce conceptual ability by allowing an examinations of the specific factors after partialling out the influence of the general factor (Chen et al., 2012) as general burnout can be seen as a common, general factor, but not a higher order factor of exhaustion and burnout. In the case of the factors in this scale, for example, there was

consistency with respect to the significance of the relationships between general burnout, apathy, and exhaustion with the validity measures, the strength of the relationship varied in some cases.

Limitations and Future Directions

The current study was limited in that this version of the Employed Student Burnout Measure did not distinguish between academic work and employment in its items. Therefore, responses could be related to the participants' interpretation of whether the term 'work' referred to their academic work, employment work, or both. Additionally, the current study did not evaluate the fact that employed students juggle multiple life domains which may be pertinent to the experience of burnout in employed students.

In the next phase of this study, the experience of burnout in multiple domains will be investigated to determine if burnout in one domain spills over into other domains or if it is domain specific in employed students. Additionally, the next phase of this study will investigate whether the experience of burnout in multiple domains (e.g., work and academic). This is a first step in investigating whether the experience of burnout leads to cumulative burnout effects, thereby contributing to poorer physical and psychological well-being.

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