

Burnt to a crisp? Understanding drivers of burnout amongst New Zealand workers

Drivers of
burnout
amongst
workers

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Abstract

Purpose – Job burnout is a popular topic for researchers and a pressing issue for employees and employers. However, the most popular measure has become widely critiqued, and a new construct – the Burnout Assessment Tool (BAT) – has been offered as a better way to assess burnout.

Design/methodology/approach – The study uses data from 1,022 employees across a wide range of occupations, sectors and industries. Confirmatory factor analysis (CFA) and odds ratio calculations are explored.

Findings – The present psychometric properties of the BAT construct are supported. Overall, 11.1% of employees met the high burnt-out risk threshold. Determinants of burnt-out risk were explored, with significant findings from high perceptions of organizational support, large firm-size, young age and long work hours found. No gender differences. The odds ratio provides greater insights into the risks associated with factors, especially working 55+ hours/week, which resulted in 580% higher risk of burnt-out risk.

Research limitations/implications – The findings highlight the danger of burnt-out risk and provide a useful benchmark for those exploring the burnt-out risk rate.

Originality/value – The BAT has not been tested in New Zealand across a sample of employees. Given the large size and breadth of employees, this provides useful generalizability to the BAT-NZ. The determinants tested here are all unique to the literature and provide new insights.

Keywords Burnout Assessment Tool, Burnt-out, Determinants, New Zealand, Psychometric properties

Paper type Research paper

Introduction

Schaufeli *et al.* (2019) define job burnout as “a work-related state of exhaustion that occurs among employees, which is characterised by extreme tiredness, reduced ability to regulate cognitive and emotional processes, and mental distancing” (p. 29). Job burnout is an important factor to examine because it can have serious consequences due to strong links with poor mental health (Schaufeli *et al.*, 2019; Sakakibara *et al.*, 2020; Schaufeli *et al.*, 2020a, b) including meta-analytic support (Koutsimani *et al.*, 2019). Further, burnout has meta-analytic support to important workplace outcomes including job satisfaction (Alarcon, 2011) and absenteeism, turnover and job performance (Swider and Zimmerman, 2010). Hence, workers experiencing burnout are less able to work and perform.

While job burnout is a critical issue, there have been strong critiques of the most popular construct: Maslach Burnout Inventory (MBI) and what it does and does not measure. Schaufeli *et al.* (2019, 2020a, b) has led the critique and offered an alternative: the *Burnout Assessment Tool* (BAT). Importantly, the BAT allows researchers to assess burnout more accurately and create an antecedent of wellbeing outcomes. The new BAT construct has already been widely tested across European countries. However, its psychometric properties have only begun to be used in different cultures. For example, De Beer *et al.* (2020) tested the BAT on a sample of Japanese workers, while Haar (2021) has shown good psychometric properties using a sample of managers from New Zealand. New Zealand is important to explore because employers have legislated requirements to ensure worker wellbeing (Haar, 2021) but the prevalence of burnout is poorly understood. Importantly, the BAT includes a cut-off criterion for assessing burnt-out risk – the severest form of burnout.



This can then enable researchers to calculate odds ratios (see [Haar, 2021](#)), “to compare the relative odds of the occurrence” ([Szumilas, 2010](#), p. 227). However, while researchers have well explored job burnout (see [Pradhan and Jena, 2018](#); [Pradhan, 2021](#)), there have been calls for more attention to situations since the COVID-19 outbreak ([Herath and Secchi, 2021](#)). This study adds to the international literature because while the BAT has been established, there is a lack of studies exploring determinants of high burnt-out risk. This is important because often the popular media report on workforces being “burnout”, for example [Doniger \(2021\)](#) reports that “over half of US workers feel “burned out” but they do not articulate what that actually represents. The BAT not only has a strong theoretical and empirical focus on burnout and calculating a high burnt-out rate, but subsequently, this enables odds ratios to be calculated that might highlight the higher risk factors that organizations and individuals can focus on.

The present study uses conservation of resources (COR) theory ([Hobfoll, 2001](#)) to understand how various worker roles and experiences can impact their levels around burnt-out risk and makes three contributions. First, the present study confirms the psychometric properties of the BAT-NZ using a large representative sample of New Zealand employees. Second, it calculates a burnt-out risk rate for New Zealand to enable benchmarking the potential stressors and strains of COVID-19. Importantly, this also provides insights into burnt-out risk rates in a COVID-19 world. Third, by testing important determinants, we gain understanding about the specific challenges that employees face from their organizations and associated roles. This can provide better insights into allaying pressures, for example through enhanced job design. Calculating odds ratios also enables clearer insights into understanding the importance of determinants. Overall, this paper contributes to the burnout literature by providing new insights into burnout and burnt-out risk amongst a large New Zealand sample and provides into the determinants that lead to burnt-out experiences.

Theoretical approach: COR

COR theory is an integrated model of stress with [Ghafoor and Haar \(2019\)](#) stating “that individuals gain, retain and conserve their resources to manage stress and demands from the environment” (p. 12). [Hobfoll et al. \(2018\)](#) state it “begins with the tenet that individuals strive to obtain, retain, foster, and protect those things they centrally value” (p. 104). Hence, COR theory is useful in the study of burnout because it highlights that an employee needs more resources to manage the challenges of the workplace, and those that do not have sufficient resources, might be more likely to experience high burnt-out risk. COR theory has been used to explain burnout using the BAT construct (see [Otto et al., 2021a](#); [Urbanaviciute et al., 2021](#)). Further, it is a core theory associated with job burnout research more generally (e.g. [Pradhan and Jena, 2018](#); [Pradhan, 2021](#)).

Job burnout

Traditional approach. A number of articles critique the MBI and its approach to burnout (see [Schaufeli et al., 2019, 2020a, b](#); [Haar, 2021](#)). In summary, there are issues around skewed respondent answers ([Wheeler et al., 2011](#)) and time distance variations being problematic ([Schaufeli et al., 2020a](#)). Further, the MBI also has the professional efficacy dimension which behaves differently from the other burnout dimensions of emotional exhaustion and cynicism ([Schaufeli et al., 2019, 2020a](#); [Worley et al., 2008](#)). Indeed, there are factor structure issues with the three dimensions (see [Van Heule et al., 2012](#)). In addition, the MBI construct does not allow for a single burnout score and indeed, this is discouraged (see [Maslach et al., 2017](#)). [Schaufeli et al. \(2020a\)](#) suggests this makes the MBI a burnout investigative tool but not a diagnostic tool. This is despite the literature and broader society reflecting that some people feel “burnt-out”. Beyond a lack of the MBI being based on any theoretical notion ([Schaufeli et al., 2019](#)),

there are also issues around important conditions missing from the MBI. For example, reduced cognitive functioning is well established as being a factor in burnout (Deligkaris *et al.*, 2014).

New approach (BAT). The BAT seeks to counter the aforementioned issues and consists of four primary and three secondary dimensions. Haar (2021) notes the BAT can act as “a diagnostic tool for assessing burned-out employees” (p. 4). The BAT was developed through capturing the burnout process, via 49 in-depth interviews with psychologists, general practitioners and occupational physicians (for more details see De Witte and Desart, 2019). De Witte and Desart (2019) note this research focused on the symptomology of burnout and its dynamics including causes. Ultimately, four dimensions represent burnout in the BAT: (1) exhaustion, (2) mental distance, (3) emotional impairment and (4) cognitive impairment. These reflect either the inability (exhaustion, emotional and cognitive impairment) or the unwillingness (mental distance) to exert effort at work (Haar, 2021). *Exhaustion* is characterized by “tense emotional reactions and feeling overwhelmed by one’s emotions. Specific symptoms include feeling frustrated and angry at work, irritability, overreacting, feeling upset or sad without knowing why, and feeling unable to control one’s emotions at work” (Schaufeli *et al.*, 2019, p.27). While a key dimension, exhaustion alone is not sufficient to have burnout issues (De Witte and Desart, 2019).

Schaufeli *et al.* (2019) defines *mental distance* refers to “psychologically distancing oneself from the work is indicated by a strong reluctance or aversion to work” (p. 28). For example, an employee feels psychologically uninterested in their job, leaving them to avoid work contacts and having a cynical attitude (Schaufeli *et al.*, 2019). Haar (2021) reflects that with mental distancing, employees’ function on autopilot. Schaufeli *et al.* (2019) defines *emotional impairment* as “feeling frustrated and angry at work, irritability, overreacting, feeling upset or sad without knowing why, and feeling unable to control one’s emotions at work” (p. 27). De Witte and Desart (2019) note that this refers to the reduced functional capacity to adequately regulate emotional processes, leaving workers unable to control emotions at work (e.g. bursting into tears). The last dimension is *cognitive impairment*, which Schaufeli *et al.* (2019) define as “memory problems, attention and concentration deficits and poor cognitive performance” (p. 27). Such impairment might include symptoms of being absentminded, failing to think clearly and having deficiencies in memory, concentration and attention (Schaufeli *et al.*, 2019). Cognitive impairment leads to absentminded behaviors, poor memory, and ultimately, poor work concentration (De Witte and Desart, 2019).

BAT supporting evidence. The BAT then moved from the construct development stage, and this is assessed using large representative samples of employees from two countries (see Schaufeli *et al.*, 2020a, b). There is strong empirical evidence that the four BAT dimensions relate to a higher-order construct of burnout (see Schaufeli *et al.*, 2020a, b; Spagnoli *et al.*, 2021; Sakakibara *et al.*, 2020; Hadibarjramovic *et al.*, 2020; Haar, 2021). Empirical studies show that BAT is significantly related to detrimental work outcomes – specifically lower work engagement and higher turnover intentions (Sakakibara *et al.*, 2020). It is also detrimentally related to well-being, being positively related to psychological and psychosomatic complaints (Nellestijn, 2019; Spagnoli *et al.*, 2021; Sakakibara *et al.*, 2020). Dispositional factors are also related, with workaholism positively related to burnout (Sakakibara *et al.*, 2020), as is perfectionism concerns (Spagnoli *et al.*, 2021). Otto *et al.* (2021a, b) found towards burnout, that self-efficacy and optimism were negatively related. Hence, the job burnout constructs operates as we would expect.

Schaufeli *et al.* (2020a) use the diagnostic tool to assess employee’s burnout using a traffic light system: (1) *green zone*, employees have low to modest levels of burnout, and this is normal. They are at the lowest risk of becoming burnt-out. (2) *orange zone*, are categorized as being at high risk of burning out, while (3) *red zone* represents the highest-scoring zone and those suffering severe burnout or high burnt-out risk. Haar (2021) reflects that being burnt is

the critical tipping point, where “burnout has become so intense that it severely affects workers” (p. 5). Using pre-COVID-19 data, [Schaufeli et al. \(2020a\)](#) found modest burnt-out rates in the Netherlands (5%) and in Belgium (8%). [Haar \(2021\)](#) reported a burnt-out rate of 11.3% using data from February 2020, a time when COVID-19 was being covered on the New Zealand news, but before any COVID-19 related lockdowns.

The present study initially seeks to investigate the psychometric properties of BAT. [De Beer et al. \(2020\)](#) used seven different cross-national representative samples (Netherlands, Belgium, Austria, Ireland, Finland and Japan) and found support for BAT across all national samples. [Sakakibara](#) also confirmed the BAT-Japan. [Haar \(2021\)](#) similarly found support for BAT using a manager only sample. However, the New Zealand employee population remains untested. Given the consistent evidence around BAT in European samples and the more culturally distinct Japan, it is expected that the BAT factor structure will similarly be robust in New Zealand. I posit the following.

- H1.* The BAT dimensions around (1) exhaustion, (2) mental distance, (3) emotional impairment and (4) cognitive impairment will be robust in a New Zealand sample of employees.

Hypotheses

The next stage develops a number of hypotheses around potential determinants of burnout. The first determinant of burnt-out risk is perceived organizational support (POS), which reflect employee perceptions around how much their organization values them and cares for their wellbeing ([Eisenberger et al., 1986](#)). Under COR theory, high levels of perceived organizational support are seen as providing more resources for employees, because they know that support is available when needed ([Kurtessis et al., 2017](#)). In the context of burnt-out risk, POS “is also valued as assurance that aid will be available from the organization when it is needed to carry out one’s job effectively and to deal with stressful situations” ([Rhoades and Eisenberger, 2002](#), p. 698). Hence, POS reflects an organizational climate where workloads are better managed and employees under greater stress are sought out and helped before they might achieve severe burnout. Meta-analysis supports POS being negatively related to strains ([Rhoades and Eisenberger, 2002](#)) and specifically burnout ([Kurtessis et al., 2017](#)). However, it is currently untested against the BAT and specifically the burnt-out cut-off. Hence, it is expected workers with higher POS will report lower burnt-out rates.

- Hypotheses 2.* POS will be negatively related to burnt-out risk.

The next set of determinants reflects a workplace demographic. [Haar \(2021\)](#) found firm size to be a determinant of burnt-out rates, reflecting that larger-sized firms operate in more competitive environments, which can create additional pressure on workers (see [Haar et al., 2021](#)). However, that study specifically targeted managers. Here though, it is similarly argued that working in a larger-sized firm can expose the employee to greater pressures and bureaucracy and red-tape, acting as a drain on personal resources otherwise used to combat work pressures ([Hobfoll et al., 2018](#)). This also contributes new knowledge to the burnout literature which often ignores the firm-size context. Hence, employees in larger-sized firms are expected to report higher levels of burnt-out risk. This leads to the following.

- H2.* Employees working in larger-sized firms will report higher levels of burnt-out risk.

The next determinants are age and hours worked, with age enjoying solid meta-analytic support, with [Brewer and Shapard \(2004\)](#) finding younger employees are more likely to suffer burnout. In their meta-analysis, [Ng and Feldman \(2010a\)](#) found solid support for age being negatively related to burnout. Under COR theory, it is suggested that younger employees lack the work experience (and coping experience) of older workers and thus are

not able to manage workplace stressors as well. Ultimately, this leaves younger workers more vulnerable to burnt-out risk. Regarding work hours, there is also meta-analytic support towards job stress and mental strains (Ng and Feldman, 2008), with work hours being positively related. Similarly, Amofo *et al.* (2015) conducted a review of studies on medical doctors and found long work hours was “predictive of burnout syndrome” (p. 117). Recently, Pega *et al.* (2021) conducted global research on long work hours and found those working 55 h/week or more were 17% more likely to suffer fatalities via heart disease. Under COR theory, long work hours result in a drain of resources leaving workers with fewer resources to manage their wellbeing, resulting in higher burnout. This leads to the following.

H3. Younger employees will report higher levels of burnt-out risk.

H4. Employees working 55 h or more/week will report higher levels of burnt-out risk.

Regarding gender and burnout, Purvanova and Muros (2010) state there is a common perception that “female employees are more likely to experience burnout than male employees” (p. 168). However, their meta-analysis found that while females reported significantly higher emotional exhaustion than men, men also reported higher depersonalized than women. Given both these MBI dimensions correspond closely to the BAT dimensions of exhaustion and mental distancing and given they provide opposite effects from either gender, it is hypothesized here that gender will have a null effect. Hence, gender is not likely to be significantly related to burnt-out risk. This leads to the final hypotheses.

H5. Burnt-out risk rates will not differ by gender.

Methods

Participants and sample

Data for the present study were collected from a CINT survey panel targeting employees in May 2020. Full ethics was granted for the study. CINT offers an extensive database of thousands of New Zealand employees and is similar to Qualtrics (for similar details see Haar, 2021). These panels invite potential respondents, and they chose to participate (doing the online survey) and are paid for their participation. This survey included a number of entry requirements (1) being in paid work and (2) working at least 20 h/week. Respondents not meeting such criteria are excluded. Participants are removed if they complete the survey too fast or slow. A basic power calculation using standard 95% confidence level, a 5% margin of error and an estimated overall population of three million workers (meeting the above criteria), estimates an ideal sample size of 385 (Qualtrics, 2021). At the 99% confidence level it is $n = 663$ (aligning with Hulley *et al.*, 2013). Overall, a representative sample of New Zealanders was sought, and while 1,000 respondents were targeted, ultimately 1,022 fully completed responses were collected. Similar panel approaches have yielded positive samples (e.g. Ghafoor and Haar, 2019; Haar, 2021). In their meta-analysis between conventional data collection (e.g. mail surveys) and panel sourced data, Walter *et al.* (2019) found no significant difference in data quality between these approaches.

Overall, respondents were fairly even by gender (55% female) and overall had an average age of 39.3 years ($Sd = 13.9$). Thirty three percent of respondents were aged under 30 years, and respondents averaged 33.4 h work/week ($Sd = 11.0$), with four percent reporting 55 h or more. By firm size, 38.0% worked in a larger sized firm with 51+ employees ($Sd = 48.6$) and by sector, 64.3% worked in the private sector, 30.6% the public sector and 5.1% the not-for-profit sector.

Measures

Job Burnout was measured using the 23-items of the BAT scale (Schaufeli *et al.*, 2020a, b), coded 1 = never to 5 = always. Given that this is the first New Zealand employee study, we call the instrument BAT-NZ. The items measure the four core symptoms of burnout: exhaustion (8-items, sample “When I get up in the morning, I lack the energy to start a new day at work”, $\alpha = 0.91$), mental distance (5-items, sample “I’m cynical about what my work means to others”, $\alpha = 0.86$), emotional impairment (5-items, sample “I get upset or sad at work without knowing why”, $\alpha = 0.93$) and cognitive impairment (5-items, sample “When I’m working, I have trouble concentrating”, $\alpha = 0.91$). In their study of 1,500 employees each from the Netherlands and Belgium, Schaufeli *et al.* (2020a, b) showed the data fit the constructs best across the four dimensions, with the four dimensions highly correlated ($0.82 <r> 0.54$), making combining the dimensions appropriate. Here, the constructs were similarly highly correlated ($0.74 <r> 0.61$).

Confirmatory factor analysis (CFA) in AMOS (version 26) was conducted to confirm the BAT-NZ factor structure. Regarding goodness-of-fit indices, common guidelines in the literature were followed (e.g. Hu and Bentler, 1998; Williams *et al.*, 2009): (1) the comparative fit index ($CFI \geq 0.90$), (2) the Tucker–Lewis index ($TLI \geq 0.90$), (3) the root-mean-square error of approximation ($RMSEA \leq 0.08$) and (4) the standardized root mean residual ($SRMR \leq 0.10$). This resulted in a good fit to the data: χ^2 (df) = 1209.6 (224), $CFI = 0.94$, $RMSEA = 0.07$ and $SRMR = 0.05$. The hypothesized construct structure was confirmed by testing alternative CFAs, with BAT dimensions combined (e.g. exhaustion and mental distance, and emotional and cognitive impairment). Chi-squared difference test showed these were all a poorer fit to the data (all $p < 0.001$) compared to the hypothesized model (Hair *et al.*, 2010). Next, we tested a higher-order model with the four dimensions loading onto a single factor (job burnout), and this demonstrated an excellent fit to the data: χ^2 (df) = 1256.8 (229), $CFI = 0.94$, $RMSEA = 0.07$ and $SRMR = 0.06$. Following the logic of Hadzibajramović *et al.* (2020), we combined the dimensions to create the job burnout scale ($\alpha = 0.96$).

Burnt-Out Risk was calculated using guidelines from Schaufeli *et al.* (2020a, b). We focus specifically on burnt-out risk due to this being a new direction in the burnout literature (Haar, 2021). We took the combined job burnout scale and calculated burnt-out risk using the cut-off of ≥ 3.30 , which Schaufeli *et al.* (2020a) refer to as employees suffering serious burnout (in the red zone). Respondents are coded 1 = high burnt-out risk (job burnout Mean ≥ 3.30), or 0 = not at burnt-out risk (job burnout Mean < 3.30). The calculation of the burnt-out risk threshold was done using Rasch analysis (for more details see Hadzibajramović *et al.*, 2020).

Determinants

POS was measured using the 8-item short construct by Eisenberger *et al.* (1986), coded 1 = strongly disagree, 5 = strongly agree. Questions followed the stem “My organization . . .” and a sample item is “The organization really cares about my well-being” ($\alpha = 0.86$). Given the focus on odds-ratios here, I also calculated a high POS at Mean + 1SD (1 = POS ≥ 4.45 , 0 = POS < 4.45). This captured 17.1% of respondents. This reflects those reporting the highest levels of organizational support for employee wellbeing. This is well established in New Zealand (e.g. Haar, 2006).

Firm Size was coded 1 = medium and large sized firms (51 + employees) and 0 = small firms (50 employees or less).

Young Employee was calculated off employee age in years (1 = aged less than 30 years, 0 = over 30 years).

55 Hours Work Plus was calculated off employee hours worked/week (1 = 55 h/week or more, 0 = 54 h/week or less).

Gender was coded 1 = female, 0 = male.

Controls. Given meta-analytic support for tenure on job outcomes including health related (Ng and Feldman, 2010b), *Job Tenure* (years) was controlled for.

Analysis

Hypothesis 1 was tested above using CFA in AMOS (version 26). **Hypotheses 2–5** were tested in SPSS (version 26) using binary regression with burnt-out as the dependent variable. Bootstrapping (5,000 times) was used, and confidence intervals were calculated. All analyses have job tenure included as a control variable.

Results

The CFA in AMOS (detailed above) supports **Hypothesis 1**. Descriptive statistics for the study variables are shown in **Table 1**.

Table 1 shows that the individual BAT dimensions, the overall job burnout construct and burnt-out risk are all significantly correlated to POS (all $r > 0.25$, $p < 0.01$). Dichotomous variables are not shown (although the burnt-out rate is provided due to its central focus here). The analysis showed 11.1% of respondents reported being burnt out.

Results of the odds-ratio (from the binary regression) are shown in **Table 2**.

With the dependent variable burnt-out risk, the results of and resulting odds-ratios are presented here for the various antecedents. **Table 1** shows POS is significantly and negatively correlated with burnt-out risk ($r = -0.16$, $p < 0.01$). High POS was used for the odds-ratio calculations. Overall, significant odds-ratios are found for high POS (83.7% less burnt-out risk, $p < 0.001$), employees working in larger-sized firms (213.6% more burnt-out risk, $p < 0.001$), younger workers (211.2% more burnt-out risk, $p < 0.001$) and those working 55 h/week or more (580.5% more burnt-out risk, $p < 0.001$). As expected, there are non-significant effects from gender (110.7%, $p = 0.494$). These findings support **Hypotheses 2–5**. The bottom of **Table 2** shows specific percentage burnt-out rates for each category.

Post-hoc analysis

Beyond the hypothesized relationships, further post-hoc analysis was conducted [1]. The relationships were further explored by gender given this was by itself non-significant (as hypothesized). Here, new measures were created with a female-only focus for POS, firm size, 55+ hours work and young. Odds ratios were recalculated. Towards burnt-out risk, females in a high POS culture had significantly lower burnt-out risk (74.2%, $p = 0.016$), and females in larger-sized firms had significant higher risk (195.9% more burnt-out risk, $p < 0.001$). Females working 55+ hours had significantly higher odds (1,528.3% more burnt-out risk, $p < 0.001$), as did young females (aged under 30 years) had significantly higher odds: (181.8% more burnt-out risk, $p = 0.011$). How these findings compare to the original hypotheses are discussed below.

Discussion

The first focus of the present study was to establish the psychometric properties of the BAT-NZ. This is because the only other analysis of the BAT in New Zealand targeted managers (see Haar, 2021). The confirmation of solid psychometric properties extends the countries that have supported the new BAT construct beyond Netherlands, Belgium, Austria, Ireland, Finland and Japan (De Beer *et al.*, 2020; Sakakibara *et al.*, 2020). Importantly, a nationally representative sample of employees was used, which provides strong confidence these findings can be generalized across the New Zealand population. The analysis confirmed the factor structure of BAT and supported a higher-order construct. Importantly, this study

Table 1.
Correlations and
descriptive statistics of
study variables

Variables	Mean	Sd	1	2	3	4	5	6	7	8
1. Job tenure	6.13	5.81	—							
2. Exhaustion	2.72	0.81	-0.11**	—						
3. Mental distance	2.44	0.86	-0.13**	0.67**	—					
4. Emotional impairment	2.24	0.85	-0.06	0.66**	0.68**	—				
5. Cognitive impairment	2.06	0.85	-0.12**	0.62**	0.63**	0.73**	—			
6. Job burnout	2.36	0.73	-0.12**	0.85**	0.86**	0.89**	0.86**	—		
7. Burnt-out risk	0.11	0.31	-0.05	0.54**	0.58**	0.60**	0.63**	0.68**	—	
8. POS	3.65	0.80	0.04	-0.39**	-0.46**	-0.30**	-0.36**	-0.44**	-0.26**	—

Note(s): $N = 1,022$, * $p < 0.05$, ** $p < 0.01$

Variables	Odds ratio	Burnt-out risk percentages (by groups)	Confidence intervals	<i>p</i> -value
1 High POS	0.163	High POS = 2%, Rest = 13%	LL = 0.06, UL = 0.44	<i>p</i> < 0.001
2 Firm size	2.136	Large-sized Firm = 16%, small-sized Firm = 8%	LL = 1.47, UL = 3.23	<i>p</i> < 0.001
3 55 hours/Week plus	5.805	55 hours/Week Plus = 36%, up to 54 Hours = 10%	LL = 2.46, UL = 10.19	<i>p</i> < 0.001
4 Young worker	2.112	Young Worker = 16%, older Worker = 8%	LL = 1.42, UL = 3.13	<i>p</i> < 0.001
5 Female	1.107	Female = 12%, Male = 10%	LL = 0.77, UL = 1.70	<i>p</i> = 0.494

Note(s): All differences are statistically significant except for gender (# 5). All analyses include job tenure as a control variable

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Table 2.
Odds-ratios to burnt-out risk and details

found a burnt-out rate of 11.1%, which is similar to the 11.3% of managers only from New Zealand (Haar, 2021) albeit that figure was pre-COVID-19. Like the New Zealand managers study, the current finding is significantly higher than the five and eight percent burnt-out rates from the Netherlands and Belgium, respectively (Schaufeli *et al.*, 2020a).

Haar (2021) reflected that the “higher burnt-out rate might reflect the fact the present study is managers only” (p. 14), although a similar rate is found here. This suggests, given the present data collection was in May 2020 compared to February 2020 for the manager only study (Haar, 2021) that the higher burnt-out rate might reflect some COVID-19 related factors. Further investigation is warranted. The odds ratio findings supported the hypotheses including around organizational support. The odds ratio showed that employees working for organizations perceived as being top in caring for employee wellbeing were only 2% likely to have high burnt-out risk, compared to 13% for all others. This supports the broader literature around POS and wellbeing (Rhoades and Eisenberger, 2002) and also burnout (Kurtessis *et al.*, 2017). Similarly, long work hours have been seen as a perennial issue to worker wellbeing (Ng and Feldman, 2008; Amofo *et al.*, 2015), including a global study highlighting the increased death rate (see Pega *et al.*, 2021). The present study reinforces these finding with those working 55 h/week or more having a burnt-out risk rate of 36% compared to 10% for those working lesser hours. This highlights the danger of long work hours towards burnt-out risk.

Beyond the above contributions to the BAT literature, we also found workers in larger-sized firms do react detrimentally to size related pressures (see Haar, 2021), reporting burnt-out rates much higher (16%) compared to those in smaller-sized firms (8%). Similarly, higher burnt-out rates were found for younger workers – those aged under 30 years (16%) compared to older workers (8%). This aligns with meta-analyses (Brewer and Shapard, 2004; Ng and Feldman, 2010a) and highlights a potentially dangerous aspect where so many young employees might experience burnt-out risk. Finally, no gender differences were found, highlighting burnt-out rates might not differ by gender. This does align with the MBI meta-analysis which found gender differences (Purvanova and Muros, 2010), although for both male and female on dimensions that are similar to the BAT. Here it was argued that gender differences might ultimately cancel out in the burnt-out construct and that appears supported.

The post-hoc analysis focused on adding gender to these relationships to explore whether gender, in combination with other factors, produced unique results. The relationships examined were all significant. Interestingly, while a high POS culture had significantly lower

burnt-out risk these odds were less beneficial for females. The most significant change came in females working 55+ hours, whose odds of burnt-out risk increased 15 times, well above the 5.8 times risk when gender is combined. This likely aligns with role theory, which “suggests that demographic differences will result in incongruent role expectations, role pressures, and subsequent role performance” (Michel *et al.*, 2011, p. 700). Interestingly, while being under 30 years is a significant determinant of high burnt-out risk, the odds while still significant, are lower for young females (181.8 versus 211.2% odds).

Overall, the study provides useful insights into our understanding of experiencing burnt-out and the determinants. This adds to our understanding, not only of the burnt-out phenomenon, but also provides a much needed benchmark for burnt-out rates (here in New Zealand), at a time just after the COVID-19 pandemic national lockdown. While other countries still grapple with COVID-19 including continuing lockdowns, the current study does initial arguments about the changing situation facing organizations dealing with COVID-19 (e.g. Herath and Secchi, 2021).

Implications

The current study provides important evidence regarding burnt-out status, which has important implications for human resource (HR) managers and departments. Given the links between quantitative and qualitative work demands and burnout (Sakakibara *et al.*, 2020), an important implication for organizations is managing workloads. Providing managers with training and development around setting suitable workloads for subordinates would be beneficial. Greater job sizing may play a part in managing the burnt-out rate amongst their workforces. Workplaces might also audit and establish their own burnt-out levels, including the danger (orange) zone, and then provide targeted training for employees to recognize the warning signs of burnout. Indeed, focusing on workload issues aligns with New Zealand legislation, around occupational health and safety (see Lamm *et al.*, 2017). Specifically, Haar (2021) noted “The Health and Safety in Employment Amendment Act 2002) highlights that employers are responsible for workplace harm” (p. 15), with such harm including mental harm from work stress.

Importantly, the present study also identifies occupations and groups that are more at risk. This includes young workers, those in larger-sized firms and employees working 55 h/week or more. Interestingly, amongst these variables, long work hours correlated significantly with manager status ($r = 0.12$, $p < 0.01$) and young workers ($r = -0.07$, $p = 0.034$), highlighting that these factors are largely independent (given manager status is small, and young workers is negative). But organizations can use these findings to provide insights into potential threats facing their workforces. Clearly one positive avenue is the development of stronger POS amongst an organization’s workforce. Thankfully, meta-analysis shows us that HR practices (e.g. developmental opportunities) and work conditions (e.g. autonomy) can aid the development of POS (Kurtessis *et al.*, 2017). Similarly, reducing organizational politics and strengthening organizational justice will also help build POS (Kurtessis *et al.*, 2017).

Finally, an implication from the present findings is from the post-hoc analysis. Females benefited slightly less from POS and younger females fared slightly better towards burnt-out risk rates. But, the long work hours (55+) appear critical for females, with 15 times the odds of burnt-out risk. While gender was not expected to link to burnout (see earlier), these analyses suggest that gender alone might not be sufficient to find differences. Instead, it is the role of gender in combination with other factors – here specifically long work hours – that are critical. These findings encourage organization to examine long work hours (especially whether such a culture exists) and exploring workforce labor hours by gender.

There are also multiple research implications from this study. Importantly, the BAT has been used to predict wellbeing outcomes (see Schaufeli *et al.*, 2019; Sakakibara *et al.*, 2020;

Schaufeli *et al.*, 2020a, b), and further replication of these relationships – especially as currently untested in New Zealand – is encouraged. Further, testing moderators to determine whether dispositional factors, such as psychological capital or organizational-based self-esteem (see [Ghafoor and Haar, 2019, 2021](#)), to determine if they play a buffering role in the experiences of burnout is warranted. Given the post-hoc analyses here, including gender (females) as a moderator might be especially useful for researchers. Perhaps in combination with factors as per here, such as gender and POS. Additionally, testing the BAT as a mediator of the influence of leadership or organizational climate towards wellbeing outcomes, might also provide useful insights. Indeed, studies exploring moderated mediation might produce new insights and challenges. Finally, researchers should provide greater attention to gaining burnt-out benchmarks to provide much needed insights into these levels. This might be especially prevalent as the global workforce still largely is dealing with COVID-19. It might be especially important for such levels to be explored over time to determine whether workforce mental health improves once the COVID-19 pandemic becomes well managed.

Limitations

Common method variance (CMV) is a potential concern with many studies. However, the primary function of the present study was to establish the psychometric properties of the BAT-NZ and then conduct binary regression from mainly demographic variables, which are less likely to produce significant effects due to CMV. Further, [Haar *et al.* \(2014\)](#) suggested that alternative CFA model testing provides stronger confidence in study variables, suggesting the psychometric properties of constructs are distinct and thus not conflated by CMV. However, following suggestions from [Podsakoff *et al.* \(2003\)](#), two post-hoc tests were conducted. First, Harman's one factor test produced the largest factor that accounted for 37% of the variance, well below the CMV threshold. Second, [Lindell and Whitney's \(2001\)](#) procedure were conducted, with a partial correlation controlling for an unrelated construct, here job mobility (3-items, [Haar *et al.*, 2021a, b](#), $\alpha = 0.79$). This saw no change in correlation strength, suggesting CMV is not evident. We also acknowledge the survey focused on those working a minimum 20 h/week and thus did not include those only working part-time. However, hours worked did range from 20–66 h/week ($M = 33.4$, $Sd = 11.0$) and thus respondents did report a wide range of work hours. Finally, we acknowledge that the use of panels does not provide a response rate because the numbers of employees who decline the initial email invitation remain confidential from the researcher (see [Haar, 2021](#) for more details). Hence, whether participants reflect a broad range of employees is hard to determine. However, studies have compared panel samples with data from conventional sampling methods and found them to be equivalent (see [Walter *et al.*, 2019](#)). Overall, the study had a large and representative sample of New Zealand employees ($n = 1,022$), spread across a broad range of sectors and industries, providing confidence in the generalizability of the data.

Conclusion

The present study provided useful psychometric evidence for the BAT-NZ. It provided an 11.1% burnt-out rate, which provides New Zealand's first benchmark data on burnt-out risk across the population. Further, the data provide some of the world's first post-COVID-19 outbreak data and show compared to some data pre-outbreak (see [Schaufeli *et al.*, 2020a; Haar, 2021](#)), that the incidence of burnout and burnt-out risk appears to be significantly higher. Overall, the odds ratio analysis highlighted significant differences across support perceptions, firm size, hours worked and age, providing organizations with valuable insights into better understanding the determinants of burnt-out risk. Given that burnt-out

consequences are highly detrimental, this should encourage organizations and HR managers to better manage the critical factors identified. The findings provide a societal-level alarm bell around growing burnout and the wellbeing of New Zealand employees.

Note

1. Endnote: 1 = thanks to an anonymous reviewer for this suggestion.

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Drivers of
burnout
amongst
workers

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