



BURNOUT IN ICELAND

TOTAL SCORES ON THE BURNOUT ASSESSMENT TOOL, SELF-
REPORTED BURNOUT, AND THE IMPACT OF DEMOGRAPHIC
FACTORS

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Thesis of 30 ECTS credits submitted to the Department of Psychology at Reykjavik University in partial fulfilment of the requirements for the degree of **MSc in Clinical Psychology.**

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Foreword and acknowledgements

This MSc thesis in Clinical Psychology was submitted to the Department of Psychology at Reykjavík University. It is worth 30 ECTS credits and was completed over two semesters under the supervision of Linda Bára Lýðsdóttir, Assistant Professor and Director of the MSc program in Clinical Psychology at Reykjavík University, and Brynja Björk Magnúsdóttir, Associate Professor.

During the autumn semester of 2023, Gallup distributed the survey to a sample designed to represent the Icelandic market. In the autumn semester of 2024, the literature related to the assessment of burnout was reviewed. Following that, the data was analysed, and the thesis was written.

I would especially like to thank my supervisors, Linda Bára Lýðsdóttir and Brynja Björk Magnúsdóttir, for their invaluable guidance and support throughout this research process. I am also grateful to my classmates for their close friendship and encouragement over the past two years. At last, I want to thank my husband, my parents, my in-laws, my sister and her husband, and my three children for their help, understanding, and patience while writing this thesis.

Abstract

No study has been conducted on burnout in a general population sample in Iceland. The aim of the present study is to assess total scores on the Burnout Assessment Tool (BAT) among individuals in the Icelandic labor market and to determine whether these scores differ based on gender, age, marital status, household size, the number of children under 18 years of age living in the household, and employment status. Furthermore, to identify the strongest demographic predictors of burnout. Lastly, to explore the association between participants' self-reported burnout and their total scores on the BAT scale. This study is a cross-sectional study. A total of 1,991 individuals, selected to represent the Icelandic labor market, completed the BAT along with background questions. Women reported higher total scores than men, and younger participants, aged 18–29, had the highest total scores of all age groups. Participants who were on leave or both working and studying reported the highest total scores on the BAT scale, while self-employed individuals reported the lowest scores. No significant differences in burnout were found based on marital status, household size, or the number of children under 18 living in the household. A regression analysis showed that gender, age, and employment status explained 7.3% of the variance in total burnout scores, with gender and age having the strongest effects. Self-reported burnout aligned strongly with total BAT scores: participants who believed they were experiencing burnout scored significantly higher than those who did not. Our results support the relevance of demographic factors in understanding burnout, as measured by the BAT.

Keywords: burnout, Burnout Assessment Tool (BAT), burnout total scores, predictors of burnout, self-report of burnout

Introduction

Balancing work, home responsibilities, and caring for children has become a significant challenge, leading many, especially women, to experience burnout in their personal and professional lives (Artz et al., 2022). According to the World Health Organization (WHO) in the International Classification of Diseases (ICD-11), burnout is a syndrome resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions: exhaustion, mental distance or negativity toward one's job, and reduced professional efficacy (World Health Organization, 2022). The concept of burnout has evolved significantly since it first emerged. Initially, the term was informally used by individuals in the 1970s to describe their personal experiences before it was recognized as a subject of academic study (Schaufeli et al., 2009). Freudenberger was the first to introduce burnout as a state of emotional, physical, and mental exhaustion caused by prolonged and excessive stress (Freudenberger, 1974). When the Maslach Burnout Inventory (MBI) was published in 1981, it sparked research on burnout, which identified a three-factor structure characterized by exhaustion, cynicism, and inefficacy (Maslach et al., 2016). Despite its wide use, the MBI has been criticized for its flaws: a narrow conceptualization of burnout, technical and psychometric shortcomings, and poor practical applicability for individual assessment (Schaufeli et al., 2020). The Burnout Assessment Tool (BAT) was developed in response to these criticisms, introducing a revised conceptualization of burnout (Schaufeli et al., 2020). The BAT defines burnout as a work-related state characterized by a four-factor structure with the following core symptoms: Exhaustion, Mental Distance, Emotional Impairment, and Cognitive Impairment (Redelinghuys et al., 2023). As burnout became more widely studied through tools like the MBI and the BAT, research has also explored simpler self-reported measures. For example, a comparison between the MBI and a single-item self-assessment among healthcare professionals found that self-assessments may

underreport burnout prevalence (Knox et al., 2018). However, single-item measures have been shown to measure burnout subscales effectively. West et al. (2009) found that single-item measures for depersonalization and emotional exhaustion provided meaningful information on burnout in medical professions. Similar results were found by Hansen & Girgis (2010) for the emotional exhaustion subscale, although some individuals experiencing burnout did not identify as being burned out. No studies have directly compared single-item burnout measures with the BAT. Nevertheless, one study used four items (BAT4), with one item taken from each BAT subscale: Exhaustion, Mental Distance, Cognitive Impairment, and Emotional Impairment (Hadžibajramović et al., 2024).

Over the past decade, only a few countries have conducted major cross-sectoral surveys addressing burnout. In most countries, research has focused on occupational or sectoral studies, or major cross-sectoral data has explored themes related to burnout, like work stress, intensity, or exhaustion, rather than burnout directly (Aumayr-Pintar et al., 2018). Comparing burnout studies can be especially difficult due to the use of different self-assessment inventories, with the MBI being the most widely used (Aumayr-Pintar et al., 2018; Maslach & Leiter, 2024). Therefore, cross-country comparisons are challenging, as variations in measurement tools can affect reported prevalence rates. For instance, prevalence rates for burnout tend to be higher in studies that use the Copenhagen Burnout Inventory (CBI) compared to ones using the MBI (Alahmari et al., 2022; Reardon et al., 2020). Schaufeli (2018) analyzed the prevalence of burnout across 35 countries revealing highest burnout rates in Eastern and Southeastern Europe, including Poland, Albania, Turkey, and the former Yugoslavian countries, and lowest in Northwestern Europe, such as the Netherlands, Norway, Sweden, Denmark, and Finland. As far as is known, no studies have been conducted on burnout prevalence in the general population of Iceland.

Research on burnout prevalence seems to focus on specific professions rather than comparing prevalence across different fields. Comparing burnout prevalence across professions is challenging due to inconsistencies in definitions and the use of various assessment tools. For example, a systematic review revealed that varying applications of the MBI, alongside the use of multiple other inventories and inconsistent definitions, contributed to substantial variation in reported prevalence rates (Rotenstein et al., 2018). These findings underscore the broader issue in burnout research: methodological inconsistencies make it difficult to draw reliable comparisons across professions.

It is often argued that burnout is more common among women (Maslach et al., 2001). For instance, burnout prevalence among female physicians is higher than among male physicians. This gender difference is linked to workload and job demands, reduced control and flexibility, inequities in organizational culture and compensation, challenges in work–life integration, limited social support and community at work, and lower professional fulfillment (Lyubarova et al., 2023). However, research results vary (Purvanova & Muros, 2010). A systematic review of Chinese medical students found higher burnout among male students (Chunming et al., 2017). In contrast, another systematic review found that burnout was higher among university female students from the Middle East, Latin America, Asia, the United States of America, and Europe, who reported higher levels of burnout than male students (Rosales-Ricardo et al., 2021).

Similarly, there are inconsistent findings on the correlation between demographic variables and burnout, such as age. Meredith et al. (2022) conducted a systematic review of predictors of burnout among U.S. healthcare providers. Some studies found a negative association between age and burnout, others found a positive association, while many found no association. The conclusion suggested that younger participants might be more likely to report burnout. Similar results have been found in studies examining nurses' burnout during

the COVID-19 pandemic, where younger age was one of the main risk factors associated with increased burnout (Galanis et al., 2021). Other studies have found the opposite, where older age was a significant predictor of burnout in medical students (Almutairi et al., 2022).

A meta-analysis found that marital status likely does not significantly impact burnout among nurses (Meredith et al., 2022). Similar results were found in the study by Temel et al. (2020). However, other studies have found that being single, being male, and not having children show a higher level of burnout (Cañadas-De la Fuente et al., 2018). In contrast, another study found higher emotional exhaustion among those in relationships (Załoski & Makara-Studzińska, 2024). Findings on the relationship between having children and burnout are mixed. Some studies find no significant association, while others suggest it is a key predictor (Meredith et al., 2022; Załoski & Makara-Studzińska, 2024). Few, if any, studies have examined the impact of household size on burnout. However, one study found that a larger family size was positively related to burnout recovery (Ugwu et al., 2018).

High job demands, low control, heavy workload, low reward, job insecurity, and negative attitudes increase burnout risk (Aronsson et al., 2017; Shoman et al., 2021). Burnout is especially high among healthcare workers, particularly nurses and physicians (Spencer-Hwang et al., 2024). Research has shown that burnout affects a wide range of helping professions. Among health professionals, social workers have been found to experience higher rates of burnout compared to other professions, such as nurses and physicians (Parola et al., 2017). High burnout rates have also been reported in other care-related and high-stress occupations, such as paramedics, physiotherapists, teachers, and students (Guider et al., 2024; Kagawa et al., 2021; Reardon et al., 2020; Venturini et al., 2024).

The study aims to investigate total burnout scores among people on the labor market in Iceland by (1) examining whether there are statistically significant differences in total scores on the BAT scale based on gender, age, marital status, household size, the number of

children under 18 years old living in the household and employment status and (2) identifying which of those demographic variables serve as the strongest predictors of burnout and (3) exploring if self-reported burnout is associated with the total scores on the BAT scale.

Methods

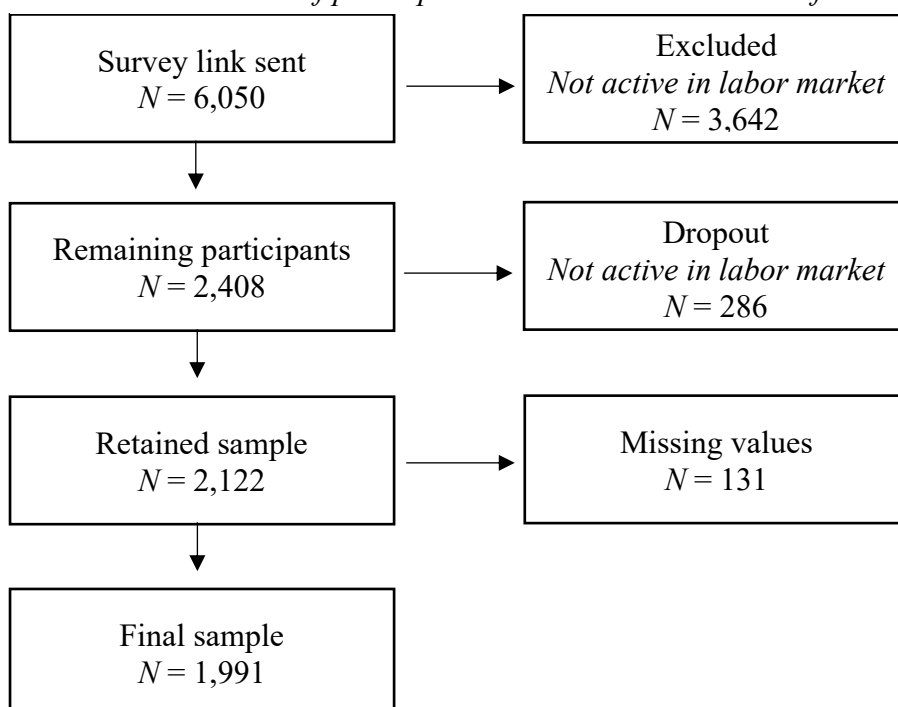
This cross-sectional study was conducted in collaboration between the VIRK Vocational Rehabilitation Fund and the Department of Psychology at Reykjavík University.

Participants

The initial sample consisted of 6,050 individuals from a Gallup Panel. Of these, 3,642 were excluded as they were not active in the labor market. Then, 286 participants were excluded as dropouts, as they were either studying without working, stay-at-home parents, retired, receiving disability benefits, or unemployed. An additional 131 individuals were excluded due to missing total BAT scores, resulting in a final sample of 1,991 individuals (see Figure 1 for CONSORT flow chart).

Figure 1

CONSORT Flowchart of participant selection and the reasons for dropout.



The gender distribution in the sample was nearly equal, with 48.6% identifying as men and 51.4% as women. The mean age for all participants was 48.1 years ($SD = 12.1$, ranging from 19 - 67 years old), with men being significantly older ($M = 49.2$, $SD = 11.8$) than women ($M = 47.1$, $SD = 12.2$), $t(1989) = 3.95$, $p < .001$.

Measurements

Participants completed the Burnout Assessment Tool (BAT-23). They also provided background information, including gender (men, women), age groups (18-29, 30-39, 40-49, 50-59, and 60-67), marital status (married or cohabiting, not married or cohabiting, other, not sure), household size (total number of individuals living in the participant's home), number of children under 18 and employment status (full-time employee, part-time employee, self-employed, studying and working and on leave). Additional background information gathered, such as education, income, residence, and postal code, was not used. Twelve additional researcher-designed questions about perceptions of burnout, work conditions, job demands, mental health and emotional well-being, physical and general health, and external stressors and life circumstances were also not used.

The Burnout Assessment Tool (BAT-23; (Schaufeli & De Witte, 2023) is a self-report questionnaire developed to measure burnout symptoms. The list consists of 23 items presenting four core subscales: Exhaustion (8 items); Mental Distance (5 items); Cognitive Impairment (5 items); and Emotional Impairment (5 items). All items are statements with answers on a 5-point Likert scale, ranging from 1-5 (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always). A total burnout score is calculated by summing the responses across all 23 items, yielding a total score ranging from 23 to 115. The mean score is then calculated by dividing the total score by 23, resulting in a total score that ranges from 1 to 5. Scores represent increasing levels of burnout, from low to high. Although results are always based on mean scores, the term total score is used throughout the present study, as in other studies

(De Beer et al., 2024). The BAT-23 shows high internal consistency, with Cronbach's Alpha higher than 0.90 for the overall scale and 0.80 for the subscales. An Icelandic translation of the work-related BAT-12 demonstrated Cronbach's Alpha values ranging from 0.80 to 0.94 (Þorláksson, 2021). Cronbach's Alpha for the BAT scale in the current study was 0.96.

The researcher designed a self-reported burnout question. Participants were asked to respond with 'yes,' 'no,' or 'do not know' to the question: Do you think you are experiencing burnout at work?

Procedures

Data collection was carried out by Gallup in October 2023 through an online survey sent via email to individuals of the Gallup Panel, which is a weekly survey panel representing a cross-section of the general population in Iceland. Two reminders were sent to encourage participants to complete the survey. All participants were informed that their participation implied consent. Participation was anonymous and voluntary, and participants could stop filling out the questionnaire without providing a reason.

Data analysis

The data was analyzed by using the statistical software Jamovi. Descriptive statistics were conducted to summarize the demographic characteristics of participants as well as the distribution of total burnout scores across demographic variables. Descriptive statistics, such as frequencies and percentages, were calculated for gender, age group, marital status, household size, the number of children under 18 years old living in the household, and employment status. In addition, total BAT scores and standard deviations were calculated across these background groups. A stricter significance threshold of $p < .001$ was applied to reduce the risk of Type 1 Error due to the large sample size. The reliability of the BAT total scale was measured using Cronbach's Alpha (α) and McDonald's Omega (ω).

The distribution of responses for the self-reported experience of burnout was analyzed. Furthermore, the total BAT scores from the self-report were compared using a box plot.

To examine differences in total scores across various groups, seven ANOVAs were conducted in total, one for each quantitative variable: gender, age group, marital status, household size, number of children under 18 years old living in the household, employment status, and a self-report of one's experience of burnout. The analyses tested whether total scores on the BAT differed across groups. When total scores differed, post hoc comparisons were conducted to explore where the difference was. Box plots were used to show total scores on the BAT across demographic variables. Before conducting the ANOVA tests, the assumptions of normality were assessed. This was done by examining box plots and histograms and conducting Shapiro-Wilk tests. The results indicated that the data were acceptable for ANOVA testing.

Finally, a hierarchical linear regression analysis was conducted to examine which demographic variables were the strongest predictors of burnout. The hierarchical linear regression models only included variables significantly associated with the total burnout score.

Results

Total scores for different groups

The total score on the BAT for the total sample was 2.14 ($SD = 0.67$). Table 1 shows total scores and standard deviations for the BAT scale and for the included demographic variables: gender, age, marital status, household size, number of children under 18, and employment status. Both Cronbach's Alpha and McDonald's Omega indicated excellent reliability of the BAT scale as shown in Table 1.

Table 1

Means, standard deviations, p-value, η^2 , and Cronbach's Alpha and McDonald's Omega for the BAT by demographic variables.

Categorical variable	BAT				
	<i>N</i>	%	<i>M (SD)</i>	<i>p</i>	η^2
	1,991		2.14 (0.67)		
Gender				< .001	.02
Men	967	48.6	2.05 (0.62)		
Women	1,024	51.4	2.23 (0.70)		
Age groups				< .001	.045
18-29 years	174	8.7	2.41 (0.72)		
30-39 years	341	17.1	2.28 (0.70)		
40-49 years	475	23.9	2.22 (0.66)		
50-59 years	581	29.2	2.06 (0.64)		
60-67 years	420	21.1	1.96 (0.60)		
Marital status				.004	.008
Married/cohabiting	1,406	70.6	2.11 (0.66)		
Not married/cohabiting	289	14.5	2.21 (0.67)		
Other	23	1.2	2.41 (0.70)		
Do not know	9	0.5	2.44 (0.83)		
Prefer not to answer	264	13.3	2.22 (0.70)		
Household size				.322	.003
1 person	277	13.9	2.13 (0.70)		
2 persons	548	27.5	2.13 (0.69)		

3 persons	382	19.2	2.18 (0.68)		
4 persons	410	20.6	2.18 (0.65)		
5 persons	244	12.3	2.07 (0.62)		
6 or more persons	130	6.5	2.19 (0.63)		
Children in household (< 18)				.004	.008
1 child	375	18.8	2.23 (0.71)		
2 children	337	16.9	2.19 (0.64)		
> 3 children	166	8.3	2.06 (0.61)		
No children	787	39.5	2.09 (0.66)		
Prefer not to answer	326	16.4	2.16 (0.69)		
Employment status				< .001	.031
Full-time employee	1,453	73.0	2.13 (0.65)		
Part-time employee	187	9.4	2.11 (0.64)		
Self-employed	193	9.7	1.98 (0.63)		
Studying and working	106	5.3	2.41 (0.74)		
On leave	52	2.6	2.68 (0.91)		
Cronbach's α			0.96		
McDonald's ω			0.96		

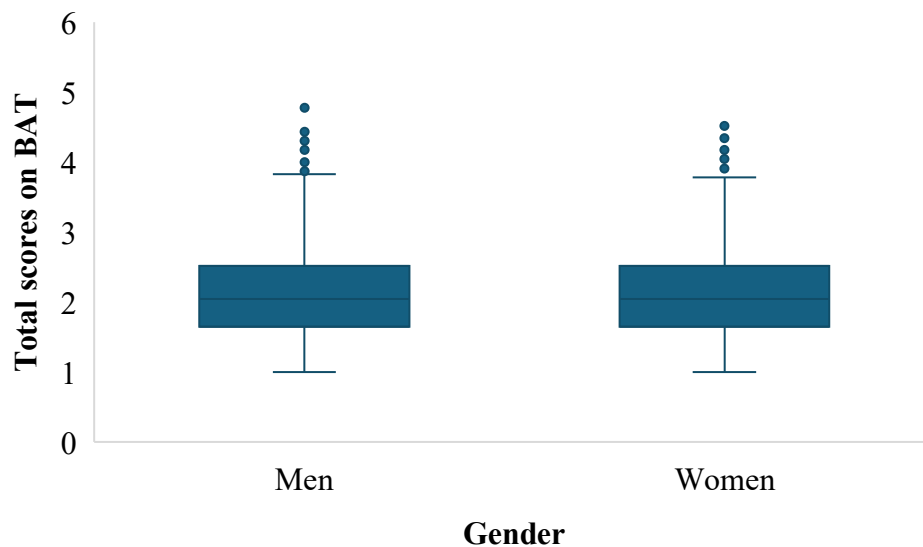
Note. BAT = Burnout Assessment Tool, M = mean, SD = standard deviation, N = sample size, η^2 = eta squared.

Gender

As shown in Table 1, women reported higher total burnout scores than men. Results from an ANOVA revealed a significant gender difference, $F(1, 1989) = 39.6, p < .001, \eta^2 = .02$. In Figure 2, the total scores on BAT by gender are shown.

Figure 2

Comparison of total BAT scores by gender.



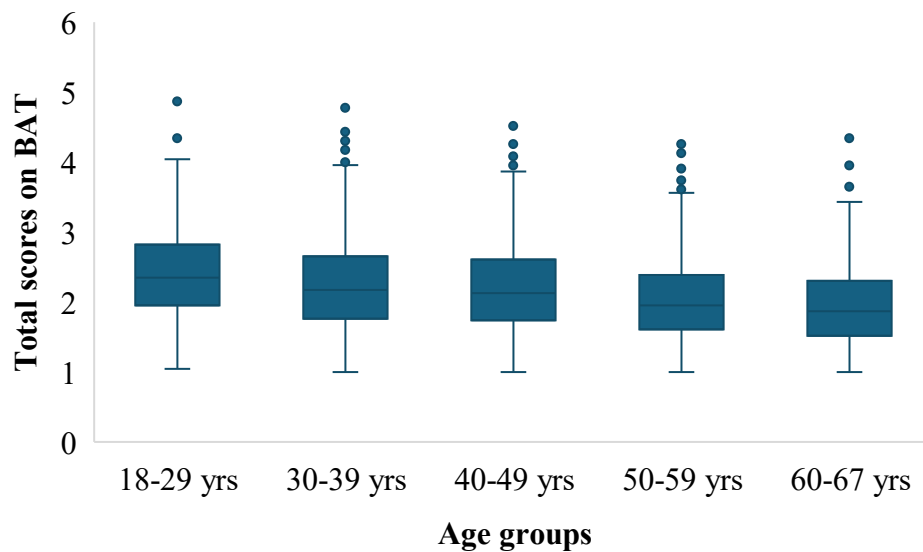
Note. BAT = Burnout Assessment Tool.

Age groups

As shown in Table 1, total burnout scores were highest among the youngest age group (18–29) and lowest among the oldest (60–67), decreasing gradually with age. Results from an ANOVA showed a significant difference between groups, $F(4, 1986) = 23.20, p < .001, \eta^2 = .045$. Post hoc comparisons revealed that ages 18-29 reported significantly higher total scores than those aged 50-59 ($\Delta = 0.35, p < .001, 95\% \text{ CI } [0.36, 0.70]$, Cohen's $d = 0.533$ and aged 60-67 ($\Delta = 0.45, p < .001, 95\% \text{ CI } [0.52, 0.87]$, Cohen's $d = 0.694$). Those aged 30-39 reported higher total scores than those aged 50-59 ($\Delta = 0.22, p < .001, 95\% \text{ CI } [0.20, 0.46]$, Cohen's $d = 0.329$ and 60-67 ($\Delta = 0.32, p < .001, 95\% \text{ CI } [0.35, 0.63]$, Cohen's $d = 0.490$). Finally, ages 40-49 scored significantly higher than those aged 60-67 ($\Delta = 0.26, p < .001, 95\% \text{ CI } [0.27, 0.53]$, Cohen's $d = 0.400$). Other comparisons were not significant. The total scores on BAT by different age groups are shown in Figure 3.

Figure 3

Comparison of BAT total scores across age groups.



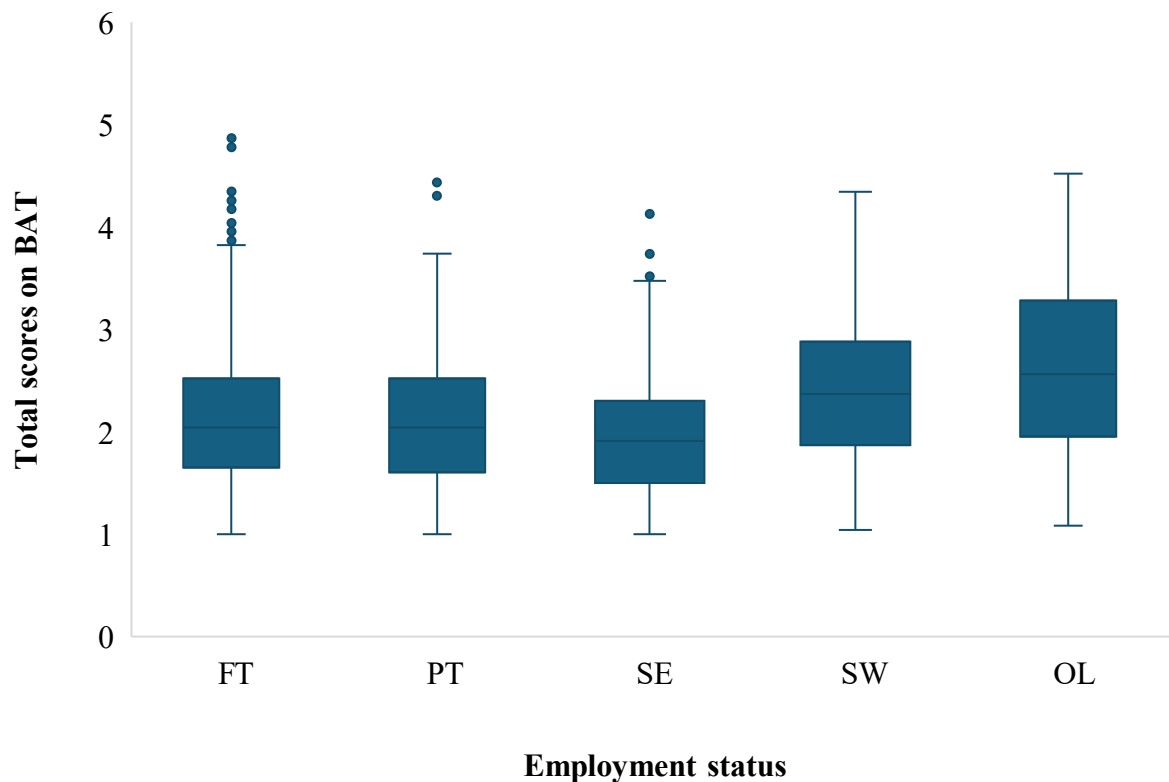
Note. BAT = Burnout Assessment Tool, yrs = years.

Employment status

Burnout was highest among those on leave, followed by individuals both studying and working. Self-employed participants reported the lowest burnout, while full-time and part-time employees had similar scores (see Table 1). An ANOVA revealed a significant effect of employment status on burnout, $F(4, 1986) = 15.9, p < .001, \eta^2 = .031$. Five significant post hoc differences were revealed: full-time employees reported lower total scores than those on leave ($\Delta = -0.54, p < .001, 95\% \text{ CI } [-1.10, -0.55]$, Cohen's $d = -0.823$) and those studying and working ($\Delta = -0.27, p < .001, 95\% \text{ CI } [-0.61, -0.22]$, Cohen's $d = -0.414$). Part-time employees also scored lower than those on leave ($\Delta = -0.57, p < .001, 95\% \text{ CI } [-1.17, -0.55]$, Cohen's $d = -0.863$). Self-employed individuals also reported lower total scores than those on leave ($\Delta = -0.70, p < .001, 95\% \text{ CI } [-1.36, -0.75]$, Cohen's $d = -1.055$) and those studying and working ($\Delta = -0.43, p < .001, 95\% \text{ CI } [-0.88, -0.41]$, Cohen's $d = -0.645$). Other comparisons were not statistically significant. The total scores on BAT by different employment statuses are shown in Figure 4.

Figure 4

Comparison of BAT total scores by employment status.



Note. BAT = Burnout Assessment Tool, FT = full-time employee, PT = part-time employee, SE = self-employed, SW = studying and working, OL = on leave.

Marital status, household size and children in household under 18 years old

An ANOVA showed no significant effect of marital status, $F(4, 1986) = 3.89, p = .004, \eta^2 = .008$, household size, $F(5, 1985) = 1.17, p = .322, \eta^2 = .003$, and children in household under 18 years old, $F(4, 1986) = 3.88, p = .004, \eta^2 = .008$.

Predictive factors of burnout

A hierarchical linear regression analysis was conducted to examine which variables best explained the variance in participants' total burnout scores. Only variables that showed a significant association with the total score on the BAT were examined.

The omnibus ANOVA test revealed significant main effects of gender, age groups, and employment statuses on the dependent variable, $p < .001$. Gender had the largest effect $F(1, 1981) = 24.69, p < .001$, followed by age groups $F(4, 1981) = 15.32, p < .001$ and employment status $F(4, 1981) = 6.90, p < .001$.

The results from the hierarchical regression analysis showed that Model 3, which included gender, age groups, and employment status, explained the most variance in total burnout scores as measured by the BAT ($R^2 = .073, p < .001$), and had the lowest values for the Akaike Information Criterion (AIC) and Root Mean Square Error (RMSE). In Model 1, gender alone accounted for 2% of the variance in total burnout scores ($R^2 = .020, p < .001$). In Model 2, when age was added, it explained an additional 4% of the variance ($R^2 = .040, p < .001$). The addition of employment status in Model 3 accounted for a further 1.3% of the variance ($R^2 = .013, p < .001$) (see Table 2).

Table 2

Model fit measures across three linear regression models.

Model	R	R^2	adj. R^2	AIC	BIC	RMSE	p
1	0.140	0.020	0.019	4018	4035	0.66	< .001
2	0.245	0.060	0.058	3942	3981	0.65	< .001
3	0.270	0.073	0.069	3923	3984	0.64	< .001

Note. R = Correlation coefficient, R^2 = Proportion of variance explained, adj. R^2 = adjusted R-squared, AIC = Akaike Information Criterion, BIC = Bayesian Information Criterion, RMSE = Root Mean Square Error.

In model 3, gender was a significant predictor, with women reporting higher burnout than men ($b = 0.15, SE = 0.03, 95\% \text{ CI } [0.09, 0.21], t = 4.97, p < .001$). Compared to the youngest group (18–29 years), total scores were significantly lower in older age groups,

particularly in the 50–59 ($b = -0.29$, $SE = 0.06$, 95% CI [-0.41, -0.17], $t = -4.82$, $p < .001$) and 60–67 age groups ($b = -0.38$, $SE = 0.06$, 95% CI [-0.50, -0.25], $t = -6.00$, $p < .001$). The age groups 30–39 and 40–49 were not statistically significant. Of the employment status categories, only being on leave was significantly associated with higher burnout than full-time employment ($b = 0.43$, $SE = 0.09$, 95% CI [0.25, 0.61], $t = 4.67$, $p < .001$). Other employment statuses were insignificant, such as part-time, self-employment, and studying and working (see Table 3).

Table 3

Hierarchical Regression Analysis by gender, age groups, and employment status.

Model	Predictor	b	SE	95% Confidence Interval		t	p
				LL	UL		
1	Intercept	2.05	0.02	2.00	2.09	96.03	< .001
	Gender:						
	Women - men	0.19	0.03	0.13	0.25	6.30	< .001
2	Intercept	2.31	0.05	2.20	2.41	43.94	< .001
	Gender:						
	Women – men	0.17	0.03	0.11	0.22	5.70	< .001
	Age groups:						
	30 - 39 and 18 - 29	-0.12	0.06	-0.24	-0.00	-1.98	.048
	40 - 49 and 18 - 29	-0.18	0.06	-0.29	-0.06	-3.03	.002
	50 - 59 and 18 - 29	-0.33	0.06	-0.44	-0.22	-5.87	< .001

	60 - 67 and 18 - 29	-0.43	0.06	-0.54	-0.31	-7.27	< .001
3	Intercept	2.28	0.06	2.17	2.39	40.22	< .001
	Gender:						
	Women - Men	0.15	0.03	0.09	0.21	4.97	< .001
	Age groups:						
	30 - 39 and 18 - 29	-0.11	0.06	-0.24	0.00	-1.81	.07
	40 - 49 and 18 - 29	-0.14	0.06	-0.26	-0.02	-2.26	.02
	50 - 59 and 18 - 29	-0.29	0.06	-0.41	-0.17	-4.82	< .001
	60 - 67 and 18 - 29	-0.38	0.06	-0.50	-0.25	-6.00	< .001
	Employment status:						
	Part-time vs. Full-time	-0.05	0.05	-0.15	0.05	-0.98	.33
	Self-employed vs. Full-time	-0.07	0.05	-0.17	0.02	-1.48	.14
	Studying and working vs.	0.10	0.07	-0.03	0.24	1.43	.15
	Full-time						
	On leave vs. Full-time	0.43	0.09	0.25	0.61	4.67	< .001

Note. b = unstandardized regression coefficient, SE = Standard Error, LL = Lower Level, UL = Upper Level, R = Correlation coefficient, R^2 = Proportion of variance explained, $adj.R^2$ = Adjusted R-squared, AIC = Akaike Information Criterion, BIC = Bayesian Information Criterion, RMSE = Root Mean Square Error.

Self-reported burnout

A one-way ANOVA was conducted to examine whether self-reported burnout was associated with the total score on the BAT. Prior to the analysis, assumptions of normality and homogeneity of variances were checked and met. Following the ANOVA, post hoc

comparisons were carried out, and box plots were used to illustrate total BAT scores across levels of self-reported burnout.

Participants' responses to the self-reported burnout are presented in Table 4.

Table 4

Frequencies of self-reported burnout, along with means, standard deviations, and p-value for differences in total scores on the BAT by self-reported burnout.

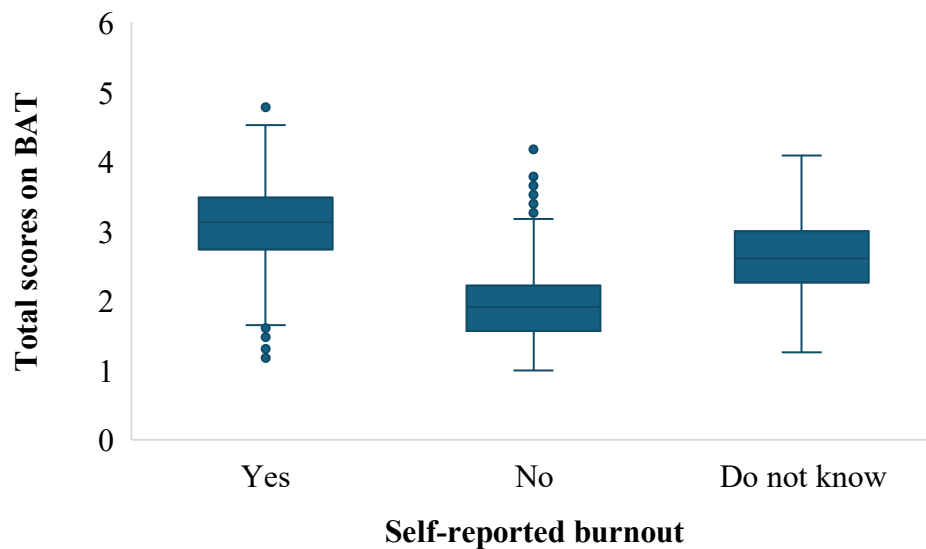
Self-report	<i>N</i>	%	<i>M</i> (<i>SD</i>)	<i>p</i>
				< .001
Yes	251	12.6	3.07 (0.68)	
No	1,524	76.4	1.92 (0.49)	
Do not know	216	11.0	2.63 (0.55)	

Note. *N* = sample size, *M* = mean, *SD* = standard deviation.

When examining self-reported burnout in relation to total scores on the BAT, results showed a statistically significant effect, $F(2, 1988) = 626, p < .001, \eta^2 = .386$. Post hoc comparisons showed that those who reported experiencing burnout scored significantly higher on the BAT than those who did not ($\Delta = 1.15, p < .001, 95\% \text{ CI } [2.05, 2.35]$, Cohen's $d = 2.197$). Similarly, participants who reported experiencing burnout scored significantly higher than those who did not know ($\Delta = 0.44, p < .001, 95\% \text{ CI } [0.66, 1.02]$, Cohen's $d = 0.839$). Participants who reported not experiencing burnout scored significantly lower than those who did not know ($\Delta = -0.71, p < .001, 95\% \text{ CI } [-1.51, -1.21]$, Cohen's $d = -1.358$). Figure 5 shows the total scores on the BAT across self-reports of burnout.

Figure 5

Total scores on the BAT by self-reported burnout.



Note. BAT = Burnout Assessment Tool.

Conclusions

This study aimed to assess total burnout scores among individuals in the Icelandic labor market by examining whether the scores differed based on gender, age, marital status, household size, the number of children under 18 living in the household, and employment status. Furthermore, the aim was to identify which demographic variables served as the strongest predictors of burnout. At last, we aimed to explore whether self-reported burnout was significantly associated with scores on the BAT scale.

When examining total scores on the BAT scale, the results indicated a significant difference in total scores between men and women, with women reporting higher levels of burnout. Previous studies have also shown similar results (Henny et al., 2014; Innstrand et al., 2011; L. Rotenstein et al., 2021; Yan et al., 2022). Many reasons for this gender gap have been identified. It has often been argued that emotional exhaustion is the core component of

burnout, and research shows that women tend to score higher on emotional exhaustion than men (Markus et al., 2018; Purvanova & Muros, 2010). Another study found that women often face challenges such as heavier workload, underrepresentation in leadership positions, pay gaps, limited opportunities for advancement, and harassment (Lyubarova et al., 2023). Other research has shown a positive correlation between levels of burnout and experiences of sexual harassment, with females being more likely than males to report workplace sexual harassment (Cage et al., 2022). These factors ultimately lead to decreased professional fulfillment and higher burnout rates among women. Gender was also one of the strongest predictors of burnout in the present study. That is consistent with results from other studies examining burnout predictors. For instance, Obregon et al. (2020) demonstrated that being female was one of the factors identified as a predictor of medical student burnout. Other studies have found that attitudes toward gender roles largely influence the gender gap in job burnout. Women with traditional views about women's roles in society are significantly more likely to experience job burnout than men (Artz et al., 2022).

Results showed that age groups were a significant predictor of burnout. Specifically, younger age groups scored significantly higher on BAT total scores than older participants. These results align with previous studies (Brewer & Shapard, 2004; Meredith et al., 2022; Moya-Salazar et al., 2023). In Marchand et al. (2018) study, burnout tended to decrease in men as they got older. For women, however, burnout was the highest in the younger and older age groups. Other studies have examined which subscales of burnout affected age; it was found that younger nurses are more vulnerable to emotional exhaustion and depersonalization, while age had a weaker effect on personal accomplishment (Gómez-Urquiza et al., 2017). A study on young people showed that emotional exhaustion was highest in jobs involving manual and interpersonal work, compared to non-manual and interpersonal work (van Veen et al., 2023). Factors that could affect higher levels of burnout

in younger individuals could include that they have high standards of excellence, creating pressure to always do more (Montero-Marin et al., 2014).

Results showed that employment status was a significant predictor of burnout, with individuals on leave reporting significantly higher BAT total scores than those with other employment statuses. While research is limited, one study found that burnout increases the risk of future sickness absence (Toppinen-Tanner et al., 2005). Similarly, Saposnik et al. (2022), reported that nurses experiencing burnout are more likely to take sick leave. Another study showed that taking three weeks of vacation or less per year, and continuing to work during that time off, were both associated with higher rates of burnout (Sinsky et al., 2024). Findings have also shown that vacation temporarily reduces burnout and job stress, but the effects fade within a few weeks (Bloom et al., 2009). Individuals who were both studying and working had the second-highest levels of burnout. Results align with previous studies, where academic burnout is higher than work-related burnout (Drăghici & Cazan, 2022). In contrast, self-employed individuals reported the lowest burnout levels. However, some studies have shown that self-employment is associated with increased risk of burnout among full-time workers (Lin et al., 2020). Total burnout scores were similar between full-time and part-time employees.

These results suggest that, although gender, age, and employment status explain only a small portion of the variance in burnout, they offer important insights into who may be more at risk of experiencing it. Still, other variables most likely play a bigger role in explaining differences in burnout levels. Although some differences in total scores were observed between groups based on marital status, household size, and number of children, none of these differences reached statistical significance. These findings align with previous research by Meredith et al. (2022), which suggests that marital status and having children are likely not significantly associated with burnout levels.

When participants' self-reported burnout was compared with their scores on the BAT, findings showed a clear pattern. Those who believed they were experiencing burnout had the highest total scores, while those who did not experience as being burned out scored significantly lower. Interestingly, participants who responded that they did not know whether they were experiencing burnout scored between these two groups. These findings align with previous research showing that single-item burnout measures can provide meaningful information on burnout (West et al., 2009). These results suggest that individuals may have good self-awareness regarding their experience of burnout.

Strengths and Limitations

One of the key strengths of this thesis is the large sample size on which the analysis is based. A robust sample increases the study's statistical power and enhances the generalizability of the findings to the population. Furthermore, the data was collected by Gallup, one of Iceland's best research companies, known for its high-quality methodology and adherence to professional standards. This adds further credibility to the research process. Finally, the data collection was carried out not long ago, which ensures that the results reflect up-to-date attitudes and circumstances, thereby increasing the relevance and applicability of the findings.

This study has several limitations. First, although the initial sample included 6,050 individuals, a large proportion ($n = 3,642$) were excluded for not being active in the labor market. In 2023, an average of about 7,600 people were unemployed according to the Statistics Iceland's labor market survey (Hagstofan, 2024). Such a large proportion of inactive individuals on the labor market raises concerns about the representativeness of the data. Second, as no established BAT norms exist for the Icelandic population, it was impossible to assess burnout's prevalence. Instead, we had to rely on total scores, which limits comparability with other international studies that report prevalence rates. Third, the

employment status variable had one category, "on leave," which referred to those on sick leave, parental leave, vacation, or another temporary leave from work. These subcategories must be grouped as separate categories for a more precise analysis. Finally, the self-reported burnout question was not taken directly from the BAT. This limits the ability to compare self-reported burnout with total scores and reduces comparability with international research, as the items used are directly from validated burnout instruments.

Future research

Ideally, it would have been valuable to have cut-off scores from the general population in Iceland for comparisons. As for now, BAT cut-off scores are only based on data from people in Flanders, with insufficient data from the Netherlands (Schaufeli et al., 2020). To make the BAT more applicable in Iceland, finding cut-off scores tailored to the Icelandic population would be important. This would require data from healthy working people and people experiencing severe burnout. These cut-off scores would help researchers better understand when employees are at risk of experiencing burnout and make the tool more useful in research and practice.

Total BAT scores have been compared across countries. It would be interesting to compare the total scores on the BAT of the Icelandic population with those reported in other countries and examine whether there is a significant difference. For example, De Beer et al. (2024) compared total BAT scores across nine countries and results showed that Japan had slightly higher scores than the other eight countries included in the analysis.

This study used a single-item question to assess participants' self-reported burnout. Single-item measures are often used for screening and are typically based on subscales from validated burnout questionnaires. So far, no single-item studies have been conducted using the BAT. However, one study has used four items (BAT4)—one statement from each BAT subscale: Exhaustion, Mental Distance, Cognitive Impairment, and Emotional Impairment

(Hadžibajramović et al., 2024). It would be interesting to explore this approach further in an Icelandic context by testing single items from each of the BAT subscales for screening purposes. If these items are found valid and reliable, this method could save time and help organizations in Iceland identify employees at risk of burnout and intervene early with appropriate support.

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