BURNOUT IN NEW ZEALAND REGISTERED NURSES: THE ROLE OF WORKPLACE FACTORS

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ABSTRACT

Aims and objectives: To investigate the impact of workplace factors on burnout in New Zealand registered nurses (RNs).
Background: Nursing is characterised by chronic workplace stress. Research examining the role of workplace factors (ie practice environment and bullying) in shaping burnout is scarce.
Methods: A cross-sectional survey was conducted among 480 New Zealand RNs. Burnout was self-reported using the CBI, while practice environment and negative acts in the workplace were self-reported using PES-NWI, and NAQ-R respectively. The STROBE checklist was used for this paper.
Results: For every point increase in PES-NWI, there was a decrease of 6.82, 12.62, and 9.86 points in personal burnout (PB), work-related burnout (WRB), and client-related burnout (CRB) respectively after controlling for demographic and job-related characteristics. For every point increase in NAQ-R, there was an increase of 0.47, 0.50, and 0.20 points in PB, WRB, and CRB respectively after controlling for sample characteristics. These two factors explained for 18.4 percent, 27.6 percent and 12.4 percent of the variation in PB, WRB and CRB respectively. The prevalence of high PB, WRB and CRB was 50.8 percent, 46.5 percent and 16.0 percent respectively.
Conclusion: Workplace factors are associated with burnout in RNs. Health-care organisations and nurse leaders have a duty to provide safe and healthy workplaces that cultivate positive outcomes for nurses and patients. Future efforts to reduce workplace stress and burnout in nurses will need to include initiatives that reduce high workloads, provide greater job flexibility and autonomy, increase collaboration and reduce bullying and harassment.

KEYWORDS

Bullying, harassment, nursing, burnout, workplace, stress

INTRODUCTION

A large body of evidence has emerged showing nurses from different countries and health-care systems are often exposed to high levels of stress in their workplace. These include nurses in Australia (Opie et al., 2011), Greece (Sarafis et al., 2016), the United Kingdom (Marangozov et al., 2017), Nigeria (Faremi et al., 2019), the United States (Roberts & Grubb, 2014), and Iran (Najimi et al., 2012). In a systematic literature review, McVicar (2003) identified several major sources of workplace stress in nurses, including workload/inadequate staff/time pressure, relationships with other clinical staff, leadership/management issues, professional conflict and the emotional demands of caring, shift work and lack of compensation. McVicar also concedes that it is nearly impossible to ignore the effect that personal circumstances have on a nurse's ability to cope with workplace stress – sometimes easing stress, while at other times compounding difficulties.

Workplace stress in nurses is often associated with reduced job satisfaction (Hayes et al., 2015) and increased risk of burnout. Furthermore, workplace stress (ie inadequate staffing and lack of organisational support) was assessed by nurses as adversely affecting the quality of patient care (Aiken et al., 2002). Burnout is associated with increased absenteeism (Dyrbye et al., 2019) and, ultimately, may result in intent to leave the profession (Heinen et al., 2013).

BACKGROUND AND LITERATURE REVIEW

Within the New Zealand context, there has been a steady stream of research examining workplace stress in nurses. Dewe (1987)

conducted one of the earliest seminal studies on the topic and found several potential sources of stress for nurses, including work overload, difficulties with other staff, difficulties in nursing the critically unwell, concerns over patient treatment and dealing with helplessly ill patients. Later, Watson and Feld (1996) found that nurse-doctor conflict was another major source of stress, followed by workload, inadequate preparation for dealing with the emotional needs of patients and their families, and death and dying. In 2007, a survey of Australian and New Zealand nurses found workplace stress was increasing and the authors predicted that nurses would experience poorer mental and physical health (Chang et al., 2007). Huntington et al. (2008) reported that workload was the most common workplace stressor. Ditzel (2009) found nurses experienced a moderate frequency of perceived job stress, nurses who worked full-time in public hospitals were most susceptible to work stress, high workload was the most significant contributor to job stress, and nurses aged 20 to 30 years experienced the highest frequency of perceived job stress.

In addition to stress, research on burnout in New Zealand nurses is emerging. Hall (2001), in the first study exploring burnout in New Zealand nurses, found nearly a third of nurses were in the advanced phases of burnout. Burnout was strongly associated with age, in particular in the 41-45 years age band. No significant associations were found between burnout and gender, job positions and hours of work. Burnout patterns did not differ across nurse settings. Moloney et al. (2018) showed that work-life interference, workload and emotional demands have the largest effects on burnout. Frey et al. (2018), using hierarchical multiple regression, found the four factors in the model of specialisation (palliative care/other, palliative care education, psychological hardiness and psychological empowerment) significantly predicted burnout ($R^2 = 0.445$).

The International Hospital Outcomes Study (IHOS) (Aiken et al., 2002) is a body of work conducted in the United States over a period of 10 years, culminating in a conceptual framework for determining "good" or "Magnet" hospitals. These hospitals were successful in attracting and retaining nurses, while producing positive nurse and patient outcomes. Integral to positive nurse and patient outcomes were a set of two core hospital-level or organisational features: *nurse staffing,* and *organisational support for nursing care*. This work laid the platform for the development of the Practice Environment Scale – Nurse Work Index (PES-NWI) (Lake, 2002; Lake & Friese, 2006), which measures five key domains of the nursing practice environment. Two domains were specific to the hospital-environment: 1) nurse participation in hospital affairs, and 2) nursing foundations for quality of care. The remaining three domains were specific to the unit: 1) nurse manager ability, leadership and support, 2) staffing and resource adequacy, and 3) collegial nurse-doctor relations.

The Bergen Bullying Research Group (BBRG) has shown in its research that employees who have been exposed to bullying or bullying behaviours reported higher levels of psychological and physical symptoms than others (Mikkelsen & Einarsen, 2001). Also, BBRG has shown individuals who were bullied reported more detrimental outcomes (ie poor sleep quality, reduced job satisfaction) than others who had experienced interpersonal conflict/aggression only (Notelaers et al., 2018). A literature review by the National Institute of Health Norway and BBRG on workplace bullying highlights the undeniable conclusion that exposure to workplace bullying results in a suite of short- and long-term negative mental and physical health outcomes (Nielsen & Einarsen, 2018).

In summary, New Zealand nurses report a range of workplace stressors which, if sustained, can result in burnout. There is an absence of data on the relationship between the practice environment and negative acts in the workplace, and burnout in New Zealand nurses. This requires further investigation. The work of Aiken et al. (2002) and Nielsen et al. (2011) have guided a current project examining resilience in New Zealand nurses (Tabakakis et al., 2019). This study explores the influence of personal, hospital workplace and bullying factors within this population.

Reducing sources of workplace stress and ultimately burnout in nurses needs to become a leading priority for health-care organisations around the globe, especially given the growing global nursing shortage (Drennan & Ross, 2019). This study aimed to investigate the impact of workplace factors, including practice environment and negative acts in the workplace, on burnout in New Zealand registered nurses (RNs).

METHODS

Study population, design and sample

In 2017, New Zealand had 49,933 practising RNs on the Register maintained by the Nursing Council of New Zealand. Ninety-one percent of these were female, 43 percent were 50 years or older and 7 percent identified as Māori (Nursing Council of New Zealand, 2018).

This cross-sectional study was conducted between August 23 and November 4, 2018. Cross-sectional studies are observational and investigate both exposure and outcome at the same time in a set population (Nour & Plourde, 2019). Five thousand RNs were randomly selected from the New Zealand Nurses Organisation (NZNO) database and invited to participate. The NZNO population has a similar demographic profile to the national New Zealand nursing workforce. The email invitation included information about the study, contact details for the research team and a SurveyMonkey link to an anonymous online questionnaire. A participant information sheet was provided at the beginning of the questionnaire, which conformed to ethical procedures. The Strengthening the Reporting of Observational studies in Epidemiology (STROBE) checklist for cross-sectional studies (Von Elm et al., 2007) was used for this paper to ensure clear and complete reporting of study conduct.

Ethics

Ethical approval was obtained from the Central Queensland University Human Research Ethics Committee (CQU HREC) (approval number 2110). Advice was sought from Gary Witte (academic committees and services office manager, University of Otago) on whether ethics approval was also required from an accredited New Zealand-based ethics committee. Given the project received full ethical review from CQU HREC, it was deemed this was not required. This was further supported by NZNO. Māori consultation was undertaken with Karen Keelan (kaitohutohu rangahau Māori/Māori research advisor, University of Otago, Christchurch). Advice was given on data collection and dissemination to Māori stakeholders, including the possibility of providing the questionnaire and interview material in te reo Māori. This was considered, but due to budget constraints, was not feasible.

Variables and measurements

Demographic and job-related characteristics self-reported by the participants included age, gender (male, female, other), ethnicity (seven categories), relationship status (single, in a relationship/defacto/married/cohabitating, other), employment status (full-time, part-time, other), highest nursing qualification (undergraduate, postgraduate, other), years employed as a nurse, place of employment (district health board, non-district health board), and intention to leave in the previous 12 months (yes, no).

The Copenhagen Burnout Inventory (CBI) (Kristensen, Borritz, Villadsen, & Christensen, 2005) is a 19-item measure of fatigue (physical and psychological) and exhaustion in three domains (separate scales): (1) personal burnout, (2) work-related burnout, and (3) client-related burnout. Personal burnout (PB, six items) is an overall state of prolonged physical and psychological exhaustion, regardless of source (generic scale). Work-related burnout (WRB, seven items) is a state of prolonged physical and psychological exhaustion, which is perceived as related to the person's work. Client-related burnout (CRB, six items) is a state of prolonged physical and psychological exhaustion, which is perceived as related to the person's work with clients, which, in this context, is the patients. Items are rated on a series of 5-point Likert scales ("always", "often", "sometimes", "seldom" and "never/almost never"). Scores for all scales range from 0-100. Scores of 50 or greater in each of the three scales indicate a high level of burnout. Higher scores in each domain indicate greater severity of fatigue and exhaustion (burnout). Prevalence of burnout scores are determined by assessing the percentage of individuals with scores ≥50 as a percentage of the overall respondents within each subscale. The CBI has acceptable psychometric properties (Chambers et al., 2016; Fong et al., 2014; Milfont et al., 2008).

The Practice Environment Scale of the Nursing Work Index (PES-NWI) (Lake, 2002) was used to assess the practice environment. The PES-NWI includes 31 items with five subscales, with items scored on a Likert scale. The four responses are: 1=strongly agree, 2=somewhat agree, 3=somewhat disagree and 4=strongly disagree. The five subscales are: 1) nurse participation in hospital affairs (nine items), 2) nurse foundations for quality of care (nine items), 3) nursing unit manager ability, leadership and support of nurses (five items), 4) staffing and resource adequacy (four items), 5) collegial nurse-doctor relations (three items). The PES-NWI has been used in a revised form within the Australian context (Middleton et al, 2008). The revised version has been validated using a Queensland nursing population, demonstrating good psychometric properties (Parker et al, 2010). Response categories were reversed: 1=strongly disagree, 2=somewhat disagree, 3=somewhat agree and 4=strongly agree. A composite (overall) score can be calculated by adding the five subscale scores and taking an average. The composite score was used in this study.

The Negative Acts Questionnaire-Revised (NAQ-R) (Nielsen et al., 2011) was used to assess perceived exposure to negative acts in the workplace. The NAQ-R is a 23-item self-report questionnaire, consisting of three subscales measuring frequency, intensity and prevalence of unwanted and negative behaviour, and workplace bullying within the past six months. The three subscales are: 1) person-related bullying (seven items), 2) work-related bullying (12 items), and 3) physically intimidating bullying (three items). Examples of unwanted behaviour included someone withholding information

Table 1. Sample characteristics

	n	% or mean (SD)
Gender	586	
Male/other	35	6%
Female	551	94%
Average age (years)	559	47.1 (12.77)
Relationship status	586	
Single/other	137	23.4%
In a relationship	59	10.1%
Married/defacto/cohabiting	390	66.6%
Ethnicity	586	
European	430	73.4%
Māori	52	8.9%
Pacific peoples	18	3.1%
Asian	72	12.3%
Middle Eastern/Latin American/African (MELAA)	14	2.4%
Highest nursing qualification	586	
Undergraduate/other	453	77.3%
Postgraduate	133	22.7%
Employment type	586	
Full-time	287	49.0%
Part-time	250	42.7%
Other	49	8.4%
Average years employed as a nurse	586	20.87 (13.80)
Place of employment	586	
District health board	344	58.7%
Non-district health board	242	41.3%
Intention to leave	586	
Yes	305	305 (52%)
No	281	281 (48%)
Average CBI-PB mean score	485	48.55 (19.86)
Average CBI-WRB mean score	485	47.58 (21.53)
Average CBI-CRB mean score	485	24.07 (19.93)
Average PES-NWI mean score	515	2.70 (0.54)
Average NAQ-R score	480	34.27 (12.69)

CPI-PB: Copenhagen Burnout Inventory – Personal Burnout
CBI-WRB: Copenhagen Burnout Inventory – Work-related Burnout
CBI-CRB: Copenhagen Burnout Inventory – Client-related Burnout
PES-NWI: Practice Environment Scale – Nurse Work Index
NAQ-R: Negative Acts Questionnaire – Revised

from you which affects your performance, being ordered to do work below your level of competence, and being exposed to persistent and unjustified criticism. Bullying behaviours included being shouted out, finger pointing, having one's personal space invaded and being threatened. The first 22 items assess a respondent's perception of exposure to unwanted and negative behaviour, which may be deemed bullying if occurring frequently over time (often referred to as the "behavioural method"), while the 23rd item assesses the respondent's overall feeling of being bullied, often referred to as the "self-labelling method". Item 23 was not used in this study. The NAQ-R has five responses: 1=never, 2=now and then, 3=monthly, 4=weekly and 5=daily. Total NAQ-R scores (using first 22 items) range from 22-110, with higher scores indicating heightened intensity. The NAQ-R has good psychometric properties (Einarsen, Hoel, & Notelaers, 2009). The total NAQ-R score was used for this study.

Table 2. Pearson's correlations between scales

	n	Mean	SD	1	2	3	4	5
CBI – personal burnout [1]	485	48.55	19.86	1				
CBI – work related burnout [2]	485	47.58	21.53	.80*	1			
CBI – client-related burnout [3]	485	24.07	19.93	.52*	.64*	1		
PES-NWI composite score [4]	515	2.70	0.54	-.35*	-.46*	-.34*	1	
NAQ-R score [5]	480	17.36	7.05	.40*	.45*	.27*	-.50*	1

PES-NWI: Practice Environment Scale – Nurse Work Index
NAQ-R: Negative Acts Questionnaire – Revised

* Correlation is significant at the <0.001 level (2-tailed)

Data analysis

Analyses were conducted using SPSS, v25.0. Descriptive statistics were presented as mean (SD) for quantitative variables, and frequencies and percentages for categorical ones. The Level 1 prioritised output classification standard was used to categorise ethnicity (Health Information Standards Organisation, 2017). T-test and ANOVA were used to examine associations between the three subscales of CBI and sample characteristics (categorical variables). Pearson's correlations were computed to test associations between burnout with age, years employed as a nurse, PES-NWI composite score and total NAQ-R score. A multiple linear regression was used for multivariable analysis to determine the associations of workplace factors (ie practice environment and bullying) and burnout. Two regression models were run. Model 1 included two workplace factors, ie average PES-NWI mean score and average NAQ-R score. Model 2 included the two workplace factors adjusted for age, gender, relationship status, ethnicity, highest nursing qualification, years employed as a nurse and place of employment. Assumptions were checked and met. Regression coefficients and 95 percent confidence intervals were reported for workplace factors. Cronbach's alphas were calculated for the CBI subscales, PES-NWI and NAQ-R to assess their internal consistency reliability. Missing values were excluded from analyses. All *p* values are two-sided and considered significant if <0.05.

RESULTS

A total of 480 participants completed all questionnaire scales, a response rate of 11.86 percent (586/4, 939; after removing inactive emails). Items within the three subscales of the CBI were well

Table 3. Bivariate associations between burnout and sample characteristics

	n	PB Mean (SD)	WRB Mean (SD)	CRB Mean (SD)
Gender				
Male	23	45.11 (19.61)	46.59 (22.26)	28.08 (27.59)
Female	458	48.72 (19.94)	47.65 (21.55)	23.96 (19.52)
Relationship status				
Single/other	112	48.92 (19.64)	47.70 (22.10)	22.17 (17.95)
In a relationship	51	52.04 (21.88)	52.87 (22.46)	25.00 (20.28)
Married/defacto/cohabiting	322	47.86 (19.60)	46.71 (21.12)	24.59 (20.54)
Ethnicity				
European	367	48.64 (19.34)	46.87 (20.69)	24.11 (19.52)
Non-European	118	48.27 (21.48)	49.82 (23.90)	23.94 (21.24)
Highest nursing qualification				
Undergraduate/other	370	49.16 (19.98)	48.14 (21.83)	25.23 (20.82)
Postgraduate	115	46.59 (19.42)	45.81 (20.53)	20.36 (16.26)
Employment type				
Full time	236	48.45 (20.71)	48.03 (21.79)	23.89 (21.04)
Part-time	209	48.88 (18.70)	47.28 (21.35)	24.10 (19.09)
Other	40	47.40 (21.05)	46.52 (21.45)	25.00 (17.80)
Place of employment				
DHB	299	50.41 (20.30)*	49.95 (21.68)**	26.64 (21.06)***
Non-DHB	186	45.54 (18.80)	43.78 (20.78)	19.94 (17.24)
Intention to leave				
Yes	254	53.99 (19.16)***	54.69 (20.24)***	27.82 (20.23)***
No	231	42.57 (18.91)	39.77 (20.19)	19.95 (18.79)

*p<0.05 (2-tailed), **p<0.01 (2-tailed), ***p<0.001 (2-tailed)

correlated – Cronbach's alphas were 0.90, 0.77 and 0.87 for PB, WRB and CRB respectively. The PES-NWI and NAQ-R showed good internal consistency as reported (Tabakakis et al, 2019). Table 1 (see p11) shows demographic and job characteristics of the sample. Characteristics of our sample are similar to those of the national sample. Note, the n varies across characteristics, as some questions were not answered by all respondents. On average, total PB, WRB and CRB scores were 48.55 (SD=19.86), 47.58 (SD=21.53) and 24.07 (SD=19.93) respectively. PES-NWI score was 2.70 (SD=0.54); and total NAQ-R score was 34.27 (SD=12.67). The prevalence of high PB, WRB and CRB was 50.8 percent, 46.5 percent and 16.0 percent respectively.

Table 2 (see p12) shows the Pearson's correlations between the three subscales of the CBI, PES NWI, and NAQ-R. PB, WRB, and CRB subscale scores were positively correlated with NAQ-R score (r = 0.40, r = 0.45, and r = 0.27 respectively; all *p* values <0.001). PB, WRB and CRB subscale scores were negatively associated with PES-NWI score (r = -0.35, r = -0.46, and r = -0.34 respectively; all *p* values <0.001). PES-NWI score was negatively correlated with NAQ-R score (r = -0.50, *p* <0.001).

Table 3 (see p12) shows bivariate associations between PB, WRB and CRB and sample characteristics. Burnout was not significantly associated with gender, ethnicity, relationship status, highest nursing qualification or employment type (*p* values>0.05). PB, WRB and CRB were significantly associated with intention to leave, having on average 11.42, 14.92 and 7.87 points more than others respectively (*p* values<0.001). PB, WRB and CRB were also significantly associated with place of employment, that is respondents who were employed in a DHB setting had on average 4.87, 14.92 and 6.7 points more than others. Age was negatively correlated with PB (r = -.162, *p* <.001), WRB (r = -.215, *p* <.001), and CRB (r = -.152, *p* <.01). Years employed as a nurse was also negatively correlated with PB (r = -.138, *p* <.01), WRB (r = -.178, *p* <.001), and CRB (r = -.117, *p* <.05).

Multivariable associations between PB, WRB, CRB and workplace factors (ie practice environment and negative acts in the workplace) are presented in Tables 4-6 (see above and p14). Model 1, that included only two workplace factors, explained 18.4 percent, 27.6 percent and 12.4 percent of the variation in PB, WRB and CRB respectively. Both factors were significantly associated with PB, WRB and WRB. For every point increase in PES-NWI, there was a 7.15 decrease in PB, 12.50-point decrease in WRB and 10.11-point decrease in CRB respectively (*p* values <0.001). In contrast, for every point increase in NAQ-R, there was a 0.47-point increase in PB, 0.50-point increase in WRB and 0.20-point increase in PB (*p* values <0.001). The results were similar even after controlling for age, gender, ethnicity, relationship status, years employed as a nurse, highest nursing qualification and place of employment (Model 2 in Tables 4-6). Coefficients for PB, WRB, CRB, and PES-NWI were -6.82, -12.62 and -9.86 respectively (*p* values <0.001). Coefficients for PB, WRB, CRB and NAQ-R were 0.47, 0.50, and 0.20 respectively (*p* values <0.001). Model 2 explained 21.4 percent, 32.6 percent and 17.3 percent of the variation in PB, WRB, and CRB respectively.

Table 4. Multiple linear regression coefficients (95% confidence interval) between workplace factors and personal burnout

	Model 1 (n=480)	Model 2¥ (n=475)	Partial eta squared
PES-NWI	-7.15 (-10.57, -3.72)***	-6.82 (-10.28, -3.37)***	0.031
NAQ-R	0.47 (0.33, 0.62)***	0.50 (0.35, 0.64)***	0.084
Age	–	-0.16 (-0.39, 0.07)	0.004
Gender (M v F)	–	-2.20 (-9.75, 5.35)	0.001
Ethnicity (Euro v non-Euro)	–	2.76 (-1.18, 6.71)	0.004
Relationship status			
Single/other (v M/D/C)	–	1.82 (-6.62, 3.00)	0.002
In a relationship (v M/D/C)	–	-1.95 (-8.86, 4.96)	0.001
Yrs employed as a nurse	–	-0.11 (-0.31, 0.10)	0.002
Highest nursing qual (UG/other v PG)	–	1.45 (-2.32, 5.23)	0.001
Place of employment (DHB v non-DHB)	–	3.43 (0.02, 6.84)*	0.008
	Adjusted R^2 = 0.184	Adjusted R^2 = 0.212	

¥ Controlled for age, gender, ethnicity, relationship status, highest nursing qualifications, years employed as a nurse and workplace type.
PES-NWI = Practice environment scale – nurse work index, NAQ-R = Negative acts questionnaire – revised
M/D/C = married, defacto, cohabiting; UG = undergraduate, PG = postgraduate
* *p* <0.05, ** *p* <0.01, ***p* <0.001

DISCUSSION

Nurses experience high levels of occupational stress. Understanding of the role of workplace factors in shaping burnout in New Zealand RNs is limited. The main goal of this study was to examine the impact of workplace factors on New Zealand RNs' burnout levels.

Our results show that the practice environment and perceived exposure to negative acts in the workplace, including bullying, play a significant role in shaping burnout in New Zealand RNs. For every point increase in PES-NWI, there was a corresponding 7.15-point decrease in PB, 12.50-point decrease in WRB and 10.1-point decrease in CRB. This inverse association is well-supported by previous research exploring the role of the practice environment on nurse burnout, including Swedish medical and surgical RNs (Leineweber et al., 2014), Brazilian primary healthcare nurses (Lorenz & Guirardello, 2014) and Belgian hospital nurses. In addition, for every point increase in NAQ-R, there was a corresponding 0.47-point increase in PB, 0.50-point increase in WRB, and 0.20-point increase in CRB. This result is supported by Kim et al. (2019), who found a significant association between bullying and burnout in Japanese hospital nurses. When compared to these studies, our study sample was, on average, both older and had been employed as nurses for longer.

The burnout subscale scores in our study (PB = 48.55, WRB = 47.58 and CRB = 24.07) were lower than most other studies using nurses and the CBI. Chou et al. (2014) reported PB, WRB and CRB

scores of 60.1, 55.8 and 42.9 respectively in a study involving Chinese medical professionals which included nurses. Differences in mean burnout scores may be attributed to both demographic (ie lower average age of Chinese nurses, 33.9 years) and structural (ie stricter social, economic and political regulation) factors. Nobre et al (2019) reported PB, WRB and CRB scores of 51.4, 58.5 and 53.1 respectively for Portuguese nurses working in an emergency department (ED). It is possible that higher mean scores were reported in the Portuguese study, as the sample included only ED nurses, who were younger (median age = 30.0 years). Equally important was the small sample size in the Portuguese study (n = 32). In contrast, Kristensen et al (2005) reported lower PB and WRB scores for both Danish hospital (PB = 36.9, WRB = 35.0) and district/community (PB = 38.4, WRB = 31.40) nurses than PB and WRB scores found in our study. Also, CRB (24.07) was lower in this study than CRB for both hospital nurses (29.7) and district/community nurses (25.3) (Kristensen et al., 2005). The demographic profile of both studies is quite similar, suggesting differences in in social policy and working conditions between the two jurisdictions may have influenced nurse outcomes.

Published studies reporting prevalence of burnout in nurses using the CBI are scarce. The prevalence of high PB (50.8 percent), WRB (46.5 percent) and CRB (16.0 percent) in this study was lower than PB (59.4 percent), WRB (68.7 percent) and CRB (56.3 percent) in the Portuguese ED nurses study (Nobre et al., 2019). Prevalence in our study was also lower than the prevalence reported in a study involving Chinese nurses (PB = 73.2 percent, WRB = 66.0 percent and CRB = 43.3 percent) (Chou et al., 2014).

To our knowledge, this is the first study to investigate the influence of the practice environment and exposure to negative acts in the workplace on burnout in New Zealand RNs. Also, this is the first study to use the CBI with New Zealand nurses.

Table 5. Multiple linear regression coefficients (95% confidence interval) between workplace factors and work-related burnout

	Model 1 (n=480)	Model 2¥ (n=475)	Partial eta squared
PES-NWI	-12.50 (-16.00, -9.00)***	-12.62 (-16.09, -9.16)***	0.099
NAQ-R	0.50 (0.35, 0.65)***	0.51 (0.36, 0.66)***	0.086
Age	–	-0.24 (-0.47, -0.01)*	0.009
Gender (M v F)	–	-0.02 (-7.60, 7.57)	0.000
Ethnicity (Euro v non-Euro)	–	-0.13 (-4.09, 3.83)	0.000
Relationship status			
Single/other (v M/D/C)	–	2.30 (-6.25, 1.66)	0.003
In a relationship (v M/D/C)	–	-1.98 (-7.66, 3.70)	0.001
Yrs employed as a nurse	–	-0.12 (-0.33, 0.08)	0.003
Highest nursing qual (UG/other v PG)	–	0.90 (-2.89, 4.69)	0.000
Place of employment (DHB v non-DHB)	–	3.94 (0.52, 7.37)*	0.011
	Adjusted R^2 = 0.276	Adjusted R^2 = 0.0.326	

¥ Controlled for age, gender, ethnicity, relationship status, highest nursing qualifications, years employed as a nurse and workplace type.
PES-NWI = Practice environment scale – nurse work index, NAQ-R = Negative acts questionnaire – revised
M/D/C = married, defacto, cohabiting; UG = undergraduate, PG = postgraduate
*p <0.05, **p <0.01, ***p <0.001

Table 6. Multiple linear regression coefficients (95% confidence interval) between workplace factors and client-related burnout

	Model 1 (n=480)	Model 2¥ (n=475)	Partial eta squared
PES-NWI	-10.11 (-13.66, -6.57)***	-9.86 (-13.41, -6.32)***	0.061
NAQ-R	0.20 (0.05, 0.36)***	0.24 (0.09, 0.40)**	0.020
Age	–	-0.22 (-0.45, -0.01)	0.007
Ethnicity (Euro v non-Euro)	–	1.69 (-2.36, 5.73)	0.001
Gender (M v F)	–	4.64 (-3.11, 12.38)	0.003
Relationship status			
Single/other (v M/D/C)	–	-3.67 (-7.71, 0.36)	0.007
In a relationship (v M/D/C)	–	-6.37 (-12.17, 0.57)	0.010
Yrs employed as a nurse	–	-0.06 (-0.27, 0.15)	0.001
Highest nursing qual (UG/other v PG)	–	3.90 (0.03, 7.77)*	0.008
Place of employment (DHB v non-DHB)	–	4.55 (1.05, 8.04)*	0.014
	Adjusted R^2 = 0.124	Adjusted R^2 = 0.18	

¥ Controlled for age, gender, ethnicity, relationship status, highest nursing qualifications, years employed as a nurse and workplace type.
PES-NWI = Practice environment scale – nurse work index, NAQ-R = Negative acts questionnaire – revised
M/D/C = Married, defacto, cohabiting; UG = undergraduate, PG = postgraduate
*p <0.05, **p <0.01, ***p <0.001

LIMITATIONS

This study had some limitations. First, the low response rate may limit the generalisability of the results to all New Zealand nurses. Future research using a shorter questionnaire may reduce response burden and may subsequently increase the response rate. Second, the study did not collect data on stressful life events, which may affect the

outcome of burnout. Third, the cross-sectional design does not allow us to draw conclusions on the causal relationship between burnout, the practice environment and negative acts in the workplace. A longitudinal design with enhanced data collection will improve efforts to uncover these relationships. Finally, studies employing the CBI in health systems like New Zealand are limited, which makes comparisons difficult. More research is needed using the CBI in nursing cohorts in similar health systems.

CONCLUSIONS

The findings show that the practice environment, and repeated exposure to negative acts in the workplace such as bullying, were associated with burnout in RNs. Health-care organisations and nurse leaders have a responsibility to provide safe and healthy workplaces that cultivate positive outcomes for nurses. Future efforts to reduce workplace stress and burnout in nurses will need to include initiatives that limit high workloads, provide greater job flexibility and autonomy, and effectively manage bullying. Nurses will also need to prepare for the realities of shift work and the emotional labour required when making decisions in a context where there are sick patients and stressed people. Emotional intelligence is integral to nurses fulfilling their role, and it is not always taught well.

Specific workplace strategies to enhance the work environment may include ensuring safe staffing levels and appropriate skill mix and employing anti-bullying initiatives. Nursing education needs to have more simulation experiences that introduce students to an environment where multiple sources of stress are occurring, so that students can experience such challenging situations in a safe setting and rehearse responses that will ease, rather than add to tension. Students may also discuss and develop coping resources that expand their individual repertoires and increase their chances of coping in the future. Future research will also be required to examine the impact of such strategies on transforming work environments, easing stress and preventing burnout in RNs.

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