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Psychosocial factors and burnout among oncology nurses in Brunei Darussalam: A pilot study

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Abstract

Background: Existing evidence showed that adverse psychosocial factors contribute to burnout in oncology nurses and impose profound implications to nursing practice. Due to the complexity of this relationship, more studies are still needed.

Objective: To investigate the prevalence and relationship between burnout and psychosocial factors among oncology nurses.

Methods: A descriptive cross-sectional study design was conducted in 2018 using the Maslach Burnout Inventory and the Copenhagen Psychosocial Questionnaire to measure burnout and psychosocial factors, respectively. Descriptive and multivariate regression using maximum likelihood procedures were used for analysis.

Results: Out of three burnout variables, emotional exhaustion demonstrated a highly significant relationship towards psychosocial factors, particularly quality of leadership (p <0.001), justice and respect (p <0.001), and rewards (p <0.001) – congruent to a high prevalence of emotional exhaustion reported.

Conclusion: Improvement in leadership quality, rewards, justice and respect could minimise emotional exhaustion among oncology nurses. These findings further inform management and policymakers to target these specific psychosocial factors in addition to using other interventions to counter the harmful effects of burnout. A positive psychosocial workplace would consequently decrease the risk of nurses' intention to leave, reduce nurse shortages, and increase the quality of patient care.

Keywords

burnout; psychosocial factors; cross-sectional studies; oncology; leadership; respect; nursing; Brunei

Burnout is a chronic response to emotional and interpersonal stressors on the job and is defined by the three dimensions of personal accomplishment, emotional exhaustion and depersonalisation (Maslach & Leiter, 2008). It has been established that burnout is highly prevalent among nurses (Cañadas-De la Fuente et al., 2015). A systematic review by Gómez-Urquiza et al. (2016) showed that nurses present high levels of emotional exhaustion and reduced personal accomplishment. In particular, oncology nurses experience moral distress and burnout because of the intensity and proximity to pain, suffering, and death. In addition, these nurses experiencing burnout often have higher levels of emotional exhaustion (Cheng et al., 2015; Kutluturkan et al., 2016).

Consequences of burnout, such as chronic fatigue and impaired health, have serious implications on both patients' and nurses' safety. For example, high emotional exhaustion and depersonalisation are significantly associated with low patient safety grades (Halbesleben et al., 2008) and anxiety/insomnia, social dysfunction and severe depressive symptoms (Khamisa et al., 2015). Burnout could also lead

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to a shortage of nurses specialising in cancer care since it increases the intention to leave the profession (Lin, 2012).

A previous study has demonstrated promising evidence that burnout could be ameliorated by improving the psychosocial work environment, such as rewards received, reduced work-family conflict, and increased leadership quality (Rahman et al., 2017). However, due to the multi-dimensional factors in the psychosocial work environment, which consists of 28 factors (Kiss et al., 2013). This complex relationship warrants further research to improve understanding and design better interventions. In Brunei, no study has examined burnout among oncology nurses, and this research is timely to shed light on these nurses' levels of burnout. Brunei adopts universal healthcare services where the citizens enjoy free health services. With a large influx of patients at the only cancer centre, it becomes necessary to measure the burnout of nurses, particularly oncology nurses, where evidence is non-existent. Therefore, this study aimed to investigate the relationship between burnout and psychosocial factors in oncology nurses. The secondary aim was to estimate the prevalence of burnout among oncology nurses in the main cancer care centre in Brunei.

Methods

Study Design and Participants

This was a cross-sectional study using self-administered questionnaires on all oncology nurses working in the main cancer care centre.

Instruments

The questionnaire consisted of three sections: First part is the demographic data which collects participants' age, gender, and nationality, duration of work experience, highest qualification, designation, and working hours. The second part gathers data on burnout using the Maslach Burnout Inventory (MBI), and the third part collects data on psychosocial factors using The Copenhagen Psychological Questionnaire (COPSOQ II).

The English version of the Maslach Burnout Inventory (MBI) questionnaire was developed by Maslach and Jackson (1981). The MBI questionnaire was obtained from the Mind Garden website, and permission to use it was granted upon purchasing the License to Produce. It addressed three subscales, namely 1) emotional exhaustion, which measures feelings of being emotionally overextended and exhausted due to work, 2) depersonalisation which measures the unfeeling and impersonal response towards one's service and care treatment; and 3) personal accomplishment, which measures one's successful achievement and competency at work. MBI is a 22 item questionnaire established to measure burnout of people whose job description involved human services (Maslach et al., 2001).

The English version of the Copenhagen Psychological Questionnaire (COPSOQ II) was developed by the National Research Centre for the Working Environment, Denmark. COPSOQ II was obtained from National Research Centre for the Working Environment website and can be used freely for research purposes. The medium version of COPSOQ II was used for this research. It has 87 items measuring 28 psychosocial factors, including quantitative demands, work pace, emotional demands, influence, possibilities of development, the meaning of work, commitment to the workplace, predictability, rewards (recognition), role clarity, role conflicts, quality of leadership, social support from supervisor, social support from colleagues, the social community at work, job satisfaction, work-family conflict, trust regarding management, mutual trust between employees, justice and respect, self-rated health, burnout, stress and sleeping troubles. In addition, offensive behaviours are also to be assessed, including sexual harassment, threats of violence, physical violence and bullying (Kiss et al., 2013).

Data Collection

Data were collected from February to March 2018. All oncology nurses at the only cancer centre in Brunei were recruited for this study. Seventy-one sets of self-administered questionnaires were distributed by the researchers.

Data Analysis

A validation procedure was conducted to re-establish validity and reliability estimates of MBI. Inter-scale correlation (correlation matrix), corrected item-total correlation (CITC), average variance extracted, and Cronbach's alpha were computed to establish discriminant validity, convergent validity, composite reliability and internal consistency reliability, respectively. In addition, Cronbach's alpha coefficient and CITC were also established for COPSOQ II.

Descriptive statistics were calculated for the characteristics of participants. Missing data were replaced with centred mean due to small (less than 5%) missing values. The scores of MBI was reported using proportion based on the categorisation of high, moderate or low. The scores of COPSOQ II were reported using mean and standard deviation for numerical scales and frequency and percentage for categorical scales. Multivariate regression (Structural Equation Modelling) using maximum likelihood procedures (bootstrapping with 1000 subsample and 95% confidence interval) was performed to determine the relationship between psychosocial factors and burnout variables. Statistical analysis was computed with IBM|SPSS v21 and IBM|AMOS v.25. P-value less than 0.05 is considered evidence of statistical effect (two-tailed).

Ethical Considerations

The study was approved by the Institutional ethics review board of the Universiti Brunei Darussalam and the Ministry of Health. The participants were given a week to read the participant information sheet. Those who agreed have signed the written informed consent prior to completing the

survey and returned it to the researchers. Data were taken anonymously to protect the participants' identities.

Results

A total of 63 questionnaires (89% response rate) were used as valid data points for analysis. **Table 1** shows the sociodemographic data of participants. Participants' age ranges from 20 to more than 50 years old. The majority of the participants are female (77.8%), married (55.6%), and local (57.1%). The highest respondents are from the speciality nursing department (33.3%), and most are staff nurses (96.8%). The work experience ranges from 0 to more than ten years. Only 29% of the respondents have oncology nursing qualifications.

Table 1 Sociodemographic information of participants (*N* = 63)

	n	(%)
Age (years)		
20 – 29	19	(30.2)
30 – 39	37	(58.7)
40 – 49	6	(9.5)
More than 50	1	(1.6)
Gender		
Male	14	(22.2)
Female	49	(77.8)
Marital status		
Single	24	(38.1)
Married	35	(55.6)
Widowed/Divorced	4	(6.2)
Nationality		
Local	36	(57.1)
Expatriate	27	(42.9)
Work setting		
Outpatient department	12	(19.0)
Inpatient department	20	(31.7)
Day care unit	10	(15.9)
Speciality nursing	21	(33.3)
Designation		
Nurse manager	2	(3.2)
Staff nurse	61	(96.8)
Experience (years)		
0 – 5	21	(33.3)
6 – 10	15	(23.8)
More than 10	17	(42.9)
Highest education level		
Diploma	33	(52.4)
Advanced diploma	3	(4.8)
Bachelor degree	25	(39.7)
Master degree	2	(3.2)
Oncology nursing qualification		
Yes	18	(28.6)
No (General nursing)	45	(71.4)

n = frequency

Table 2 demonstrates the validity and reliability estimates for MBI. In terms of validity, the instrument was modified corresponding to the changes suggested by participants to improve face and content validity. CITC for all numerical scales range from 0.5 to 0.8, indicating satisfactory to good convergent validity except for Item 14 (CITC=0.148) of emotional exhaustion subscale and Item 18 (CITC=0.119) of personal accomplishment subscale, which showed low correlation with overall items. The correlation matrix showed that personal accomplishment was negatively associated with emotional exhaustion and depersonalisation, which was intended by the scale. In terms of reliability, all the subscales had acceptable to good estimates. The average variance extracted estimates were above satisfactory (above 0.5). Cronbach's alpha coefficient was 0.70 and above, indicating good internal consistency reliability. The cumulative variance explained by these factors for burnout was 70.5%.

Table 2 Correlation matrix, Average Variance Extracted and Cronbach's alpha of MBI scale

	1	2	3	AVE	Alpha
1	1			0.585	0.764
2	-0.12***	1		0.698	0.862
3	-0.22***	0.57***	1	0.573	0.698

1 = Personal accomplishment (8 Items)
2 = Emotional Exhaustion (9 Items)
3 = Depersonalization (5 Items)
AVE = Average Variance Extracted (cut-off 0.5)
Alpha = Cronbach's alpha (cut-off 0.6)
*** Significance at 0.05 level

Table 3 Cronbach's alpha of COPSOQ II

		Cronbach's Alpha
1.	Quantitative demand (4 Items)	0.683
2.	Work pace (3 Items)	0.560
3.	Emotional demand (4 Items)	0.349
4.	Influence at work (3 Items)	0.378
5.	Skill discretion (4 Items)	0.559
6.	Meaning of work (3 Items)	0.634
7.	Commitment to the workplace (4 Items)	0.715
8.	Predictability (2 Items)	0.820
9.	Rewards (3 Items)	0.866
10.	Role Clarity (3 Items)	0.756
11.	Role Conflict (3 Items)	0.398
12.	Quality of Leadership (4 Items)	0.942
13.	Social support (colleague) (3 Items)	0.616
14.	Social support (superiors) (3 Items)	0.910
15.	Social community at work (3 Items)	0.678
16.	Job satisfaction (4 Items)	0.846
17.	Work-family conflict (4 Items)	0.731
18.	Trust (horizontal) (3 Items)	0.567
19.	Trust (vertical) (4 Items)	0.697
20.	Justice and respect (4 Items)	0.829
21.	Sleeping troubles (4 Items)	0.869
22.	Burnout (4 Items)	0.919
23.	Stress (4 Items)	0.856

Table 3 shows the internal consistency reliability coefficients for COPSOQ II. CITC for all numerical scales ranges from 0.4 to 0.6, indicating acceptable convergent validity, except for items in emotional demand, influence at work, skill discretion, role conflict and trust (horizontal), which coincided with low Cronbach's alpha indicating poor internal consistency reliability amongst those subscales. On the other hand, other subscales demonstrated good to excellent internal Cronbach's alpha between 0.7 and 0.9.

Table 4 demonstrated that, in terms of prevalence, we estimated using a 95% confidence interval that personal accomplishment was low to moderate (20% to 43%), emotional exhaustion was high (55% to 79%), and depersonalisation was low (3% to 19%) among the population of oncology nurses in Brunei.

Table 4 Categorisation of burnout among oncology nurses (*N* = 63)

Burnout variables	*n*	(%)
Personal accomplishment		
High	20	(31.7)
Moderate	14	(22.2)
Low	29	(46.0)
Emotional exhaustion		
High	42	(66.7)
Moderate	21	(33.3)
Depersonalisation		
High	7	(11.1)
Moderate	15	(23.8)
Low	41	(65.1)

n = frequency

Table 5 Mean scores and proportion of psychosocial factors using COPSOQ II (*N* = 63)

		Mean	(*SD*)	*n*	(%)
1.	Quantitative demand	3.5	(0.72)		
2.	Work pace	2.4	(0.64)		
3.	Emotional demand	3.2	(0.57)		
4.	Influence at work	3.2	(0.59)		
5.	Skill discretion	2.0	(0.58)		
6.	Meaning of work	1.8	(0.56)		
7.	Commitment to workplace	2.6	(0.84)		
8.	Predictability	2.2	(0.89)		
9.	Rewards	2.7	(0.99)		
10.	Role Clarity	2.0	(0.64)		
11.	Role Conflict	2.9	(0.56)		
12.	Quality of Leadership	2.4	(0.82)		
13.	Social support (colleague)	2.3	(0.78)		
14.	Social support (superiors)	2.4	(1.06)		
15.	Social community at work	1.9	(0.68)		
16.	Job satisfaction	2.0[a]	(0.44)		
17.	Work-family conflict	3.0[a]	(0.61)		
18.	Trust (horizontal)	3.0	(0.66)		
19.	Trust (vertical)	2.9	(0.77)		
20.	Justice and respect	3.1	(0.86)		
21.	Sleeping troubles	3.3	(0.92)		
22.	Burnout	3.2	(0.89)		
23.	Stress	3.5	(0.84)		
24.	Health				
	Excellent			10	(15.9)
	Very good			18	(28.6)
	Fair			28	(44.4)
	Poor			7	(11.1)
25.	Sexual harassment (Yes)			5	(7.9)
26.	Threats of violence (Yes)			10	(15.9)
27.	Physical violence (Yes)			3	(4.8)
28.	Bullying (Yes)			9	(14.3)

SD = Standard deviation, *n* = frequency, Scoring: lowest = 0, highest = 5
a = highest score is 4

Table 5 demonstrated that the participants reported a high level of stress, quantitative demands and sleeping troubles. On the other hand, 44.5% of the participants reported excellent to a very good level of health compared to fair (44.4%) and poor health (11.1%).

Table 6 Multivariate regression results of the relationship between psychosocial factors and burnout variables

	Personal Accomplishment		Emotional Exhaustion		Depersonalization	
	Estimates	P-value	Estimates	P-value	Estimates	P-value
Quantitative demand	**0.348**	**<0.001**	**-0.438**	**<0.001**	-0.109	0.355
Work pace	-0.016	0.103	-0.020	0.858	0.873	0.553
Emotional demand	0.167	0.143	**-0.270**	**0.047**	-0.040	0.753
Influence at work	-0.047	0.717	-0.054	0.728	-0.196	0.097
Skill discretion	**-0.320**	**0.005**	**0.397**	**0.003**	-0.171	0.197
Meaning of work	**-0.420**	**<0.001**	**0.609**	**<0.001**	-0.137	0.378
Commitment to workplace	**-0.290**	**0.004**	**0.570**	**<0.001**	-0.119	0.379
Predictability	-0.198	0.102	**0.258**	**0.074**	**-0.270**	**0.041**
Rewards	-0.116	0.200	**0.719**	**<0.001**	0.094	0.500
Role Clarity	**-0.355**	**0.002**	**0.319**	**0.020**	-0.098	0.481
Role Conflict	0.099	0.425	**-0.302**	**0.042**	0.014	0.927
Quality of leadership	-0.026	0.775	**0.876**	**<0.001**	**-0.499**	**<0.001**
Social support (colleague)	-0.136	0.273	0.240	0.105	0.071	0.638
Social support (superiors)	-0.062	0.587	**0.517**	**<0.001**	-0.093	0.505
Social community at work	-0.094	0.417	**0.373**	**0.007**	-0.047	0.672
Job satisfaction	-0.165	0.130	**0.620**	**<0.001**	0.032	0.830
Work-family conflict	0.197	0.079	**-0.364**	**0.006**	-0.094	0.445
Trust (horizontal)	0.013	0.918	0.215	0.159	**-0.282**	**0.017**
Trust (vertical)	0.039	0.721	**0.622**	**<0.001**	-0.090	0.510
Justice and respect	0.002	0.986	**0.755**	**<0.001**	-0.053	0.737
Sleeping troubles	-0.062	0.550	**-0.583**	**<0.001**	-0.201	0.146
Burnout	0.138	0.125	**-0.590**	**<0.001**	0.167	0.132
Stress	0.096	0.322	**-0.573**	**<0.001**	0.007	0.955
Overall correlations	-0.292	0.530	**0.770**	**<0.001**	0.396	0.522

Estimates = Standardised regression coefficient, bold = significance at 0.05 level

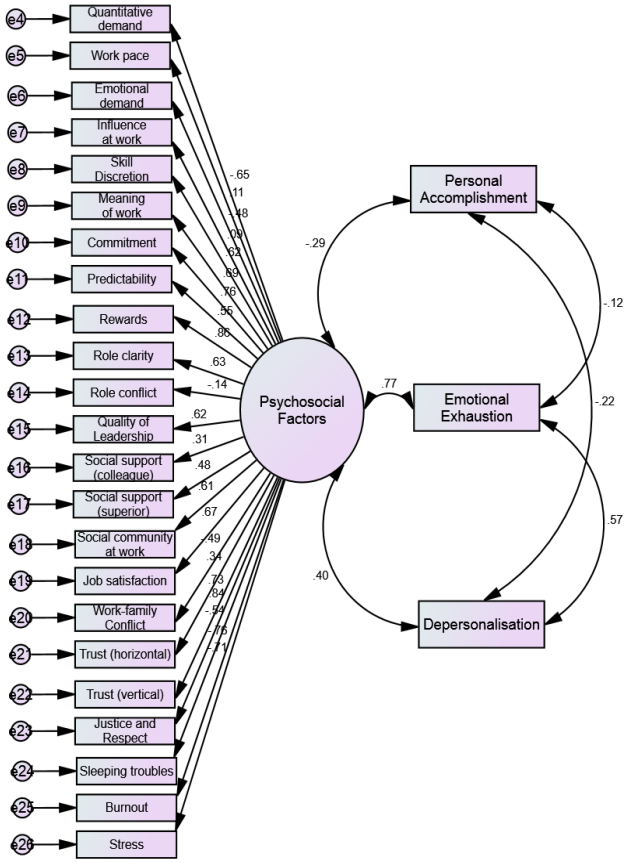

Figure 1 Path model of the relationship between Psychosocial factors and burnout variables

Figure 1 illustrates the overall relationship between psychosocial factors and burnout variables. It was observed that there was a highly significant relationship between psychosocial factors and emotional exhaustion. **Table 6** shows that emotional exhaustion had a high positive significant relationship towards the quality of leadership (β = 0.876, *p* <0.001), justice and respect (β = 0.755, *p* <0.001) and rewards (β = 0.719, *p* <0.001). Whilst having a moderate negative significant relationship with sleeping troubles (β = -0.583, *p* <0.001), stress (β = -0.573, *p* <0.001), and work-family conflict (β = -0.364, *p* = 0.006). However, the overall relationship between psychosocial factors and personal accomplishment and depersonalisation was not significant.

Discussion

This study investigated the prevalence of burnout and its relationship with psychosocial factors among oncology nurses using MBI and COPSOQ II. Both measuring tools demonstrated acceptable to good validation estimates except for items in emotional demand, influence at work, skill discretion, role conflict and trust (horizontal) of COPSOQ II. This is congruent to previous studies (Nübling et al., 2006; Ibtissam et al., 2012).

The main finding from this study suggested improving the psychosocial work environment could significantly lower emotional exhaustion. In this study, quality of leadership (extent by which immediate superior is considerate of staff

satisfaction and good development opportunities), justice and respect (fair treatment at work) and rewards (recognition and appreciation by management) were significantly related to emotional exhaustion. Therefore, management and policymakers could consider these specific factors in future policies while also accounting for characteristics of high quantitative demand, stress and sleeping troubles among these oncology nurses. These results were consistent with a previous study demonstrating that oncology nurses experience more emotional exhaustion (Kutluturkan et al., 2016). Another study by Cheng et al. (2015) showed that oncology nurses suffered a high prevalence of emotional exhaustion (45% from 358 nurses) and low personal accomplishment (66.7% from 358 nurses). The main implication is to reduce nurses' intention to leave and retain them to tackle a nurses' shortage as a persistent issue for decades (Brossoit et al., 2020).

Burnout among nurses compromises nurses' and patients' safety (Halbesleben et al., 2008; Pogoy & Cutamora, 2021). Despite the identification of this specific relationship, burnout management should not neglect. On the contrary, it should be complemented by other interventions, which could consist of identifying and recognising the signs and symptoms of burnout such as chronic fatigue, insomnia, forgetfulness, anxiety and depression, isolation and detachment, and lack of productivity and poor performance (Gómez-Urquiza et al., 2016). The sooner the nurses identified the signs, the sooner they can get appropriate interventions. There are also various stress and burnout management approaches, such as counselling, support groups, and relaxation methods (Braunschneider, 2013; Berg et al., 2016).

There should be acknowledging and accepting the expected reality of compassion fatigue and burnout, education on how to recognise symptoms of compassion fatigue and burnout, portray professional coping skills as a team and promote social support and positive relationships, and engage healthcare team in discussions about coping and make it part of regularly scheduled meetings. The management could also develop interventions to reduce burnout among oncology nurses, such as communication and team-building training, feedback techniques, and goal-setting (Maslach & Leiter, 2008).

In terms of study limitations, the results of this study should be interpreted with caution because several COPSOQ II factors had low reliability, such as emotional demand, influence at work and role conflict. Small sample size may impair external validity and hence generalisability as there may be cross-cultural or other demographic differences. Also, a small sample could impair model fitness for the multivariate regression analysis. However, this study aimed not to model the relationship but instead examine how psychosocial factors interact in terms of burnout variables and see the practical significance of this relationship, especially in a small country where a larger sample size requires collaboration with external nations. The cross-sectional and quantitative nature of the study might result in not much depth and limited implications.

Conclusion

This study showed that improvement in quality of leadership, justice and respect and rewards could minimise emotional exhaustion among oncology nurses. Therefore, management and policymakers could target these specific factors in addition to using other interventions to counter the harmful effects of burnout.

Declaration of Conflicting Interest
The authors declare that there is no conflict of interest.

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Authors' Contributions
Conception and design of the study: FAJ, TYC, HK, SS, KHAM, HAR. Acquisition of data: FAJ, SS. Analysis and interpretation of data: FAJ, HAR. Drafted manuscript: FAJ. Revised manuscript: FAJ, TYC, HK, SS, KHAM, HAR. Agreed to submit to the current journal and gave final approval of the version to be published: FAJ, TYC, HK, SS, KHAM, HAR.

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Data Availability Statement
Data belongs to Universiti Brunei Darussalam and is available from the researcher upon reasonable request.

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