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# Are Australian oncology health professionals burning out? A view from the trenches

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## ARTICLE INFO

### Article history:

Received 6 August 2008

Received in revised form 9 September 2008

Accepted 30 September 2008

Available online 14 November 2008

### Keywords:

Cancer

Oncology

Burnout

Psychiatric morbidity

Health professionals

## ABSTRACT

**Objective:** To determine the prevalence and predictors of burnout and psychiatric morbidity in the Australian oncology workforce.

**Method:** A cross-sectional nationwide survey was conducted with 740 (56%) members of the Clinical Oncological Society of Australia.

**Results:** High levels of [emotional] exhaustion were present in 32.8% of participants with direct patient contact (DPC), and 26.7% of those with no direct patient contact (NDPC). The main predictors of burnout were dissatisfaction with leave arrangements for the purpose of preventing or recovering from burnout, increased hours of patient contact, and perceived need for communication skills training.

**Conclusions:** Australian cancer care workers experience considerable occupational distress whilst possessing high levels of personal accomplishment. Regular screening for burnout is recommended with particular focus on those at-risk staff who have a substantial amount of patient contact, neglect to take adequate leave, or who have not attended communication skills training.

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## 1. Introduction

Cancer imposes a significant burden in Australia, with approximately 30,000 deaths and 65,000 new cases diagnosed annually.<sup>1</sup> Increasingly complex cancer care provision can have significant deleterious effects on front-line health care staff, including psychiatric morbidity and professional burnout<sup>2–4</sup>; the latter referring to the erosion of emotional or physical strength and professional engagement as a function of a taxing work environment.<sup>5</sup> The clinical importance of burnout is mediated through increased medical errors<sup>6</sup>, turnover and absenteeism,<sup>7</sup> decreased quality of patient care<sup>8</sup>, patient satisfaction<sup>9</sup> and burnout has a significant impact on the professional and personal lives of affected personnel.<sup>10</sup>

Oncology staff overseas report high levels of burnout and psychological distress<sup>2,11,12</sup>, with reports as high as 56% of US oncologists experiencing an episode of burnout at some stage during their career.<sup>3</sup> Significant predictors of burnout include high workload,<sup>13–17</sup> perceived need for communication skills training<sup>2,18</sup> and a strong perceived interference between work and home life is predictive of job-specific stress.<sup>15,19</sup>

The extent of burnout in the Australian oncology workforce is unknown, with only two published studies on oncology nurses,<sup>20,21</sup> though perceptions suggest high levels. This study reports the prevalence of burnout and psychiatric morbidity amongst a range of professional groups who provide or contribute to cancer care and research in Australia; and the demographic and occupational predictors of burnout. We also

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doi:10.1016/j.ejca.2008.09.029

assessed the perceived causes of professional burnout and strategies for preventing or reducing its impact on cancer care personnel.

## 2. Methods

### 2.1. Sample and procedure

The Clinical Oncological Society of Australia (COSA) is the peak national body representing health professionals from a range of multidisciplinary groups, whose main work is in the area of cancer control. The membership draws from doctors, nurses, scientists and all allied health professional groups involved in cancer control and the clinical care of cancer patients. For the main member groups, it is estimated that COSA represents approximately 20% of oncology nurses in the Australian workforce, while this proportion is higher for medical oncologists (50%), radiation oncologists (60%), surgical oncologists (80%) and oncology pharmacists (75%). COSA members ( $n = 1322$  at May 2007) received a letter from the COSA secretariat with the study information and advice to contact COSA directly if they preferred no contact about the study. Preferred contact details of members who did not contact the COSA office ( $n = 1157$ ) were sent to the researchers for all further communication regarding the study. Members received study information ( $n = 1059$  by email;  $n = 98$  by post), including a URL for accessing the web-based survey and a personal log-in and password; some 'postal members' completed a paper copy of the survey. Non-responders received reminders 2, 3 and 6 weeks after the initial invitation date, with the second reminder to 'postal members' including a paper survey. Completion of the survey was taken as consent to participate. The University of Newcastle Human Research Ethics Committee approved the study.

### 2.2. Instruments

The survey, which was pilot tested with oncologists, nurses and allied health professionals ( $n = 8$ ), included:

**Demographics and work factors:** Age, gender, occupation, qualifications, work location (rural, remote and metropolitan), years of experience in current occupation and cancer care, hours per week of direct patient contact (DPC), hours per week in paid employment, unpaid hours per week as part of employment and dissatisfaction with leave arrangements [for the purpose of preventing or recovering from burnout] (5-point Likert scale: not at all satisfied – very satisfied).

**Professional burnout** was assessed using the standardised and validated Maslach Burnout Inventory. The 22-item Human Services version (MBI-HSS),<sup>22</sup> with three sub-scales of burnout – Emotional Exhaustion, Depersonalisation and Personal Accomplishment – was administered to participants whose work involved DPC. The 16-item General Services version (MBI-GS),<sup>23</sup> with three sub-scales of burnout closely related to those of the MBI-HSS – Emotional Exhaustion, Professional Efficacy and Cynicism – was administered to participants whose work involved no direct patient contact (NDPC). The cut-off scores recommended by the MBI scale developers were applied to indicate low, average or high levels of burnout on each of the sub-scales separately.<sup>22</sup> A single item developed by Schmoldt et al.<sup>24</sup> was also included to assess self-defined burnout, with five response options grouped to reflect 'low', 'moderate' or 'high' burnout (Table 1); and to assess the correlation between this single item and the MBI scores.

**Causes of burnout:** Respondents with moderate or high self-defined burnout levels were asked to nominate, using open-ended responses, the three most important factors contributing to their personal feelings of burnout.

**Prevention of burnout:** All respondents were asked for up to three recommendations regarding strategies that could prevent professional burnout in their own occupation, using open-ended responses.

**Psychiatric morbidity:** The 10-item Kessler Psychological Distress Scale (K-10),<sup>25</sup> a brief screening measure of non-specific psychological distress with strong psychometric properties, has been widely used for routine health surveys in Australia; distress scores are categorised as low (10–19), moderate (20–24), high (25–29) or very high (30–50).<sup>26</sup>

**Communication skills training:** Participation in and perceived current need for communication skills training was assessed by four items developed specifically for this survey, including 'How long ago did you receive your most recent CST?', 'Who provided this training?', 'What is your current need for further CST?' and 'What content areas would you value training in?'.

### 2.3. Statistical analyses

Analyses were conducted using SAS software. The prevalence of high burnout and psychiatric morbidity was calculated. A number of potential predictor variables were investigated in relation to each of the outcome measures.

Univariate analyses were conducted to assess whether each of the 12 potential predictor variables (Table 2) was

**Table 1 – Categorisation of responses on the self-defined burnout scale.**

Level of burnout	Scale item
High 27.7% ( $n = 205$ )	(1) I am definitely burning out and have one or more symptoms of burnout, such as physical and emotional exhaustion (2) The symptoms of burnout that I'm experiencing won't go away. I think about frustration at work a lot (3) I feel completely burned out and often wonder if I can go on. I am at the point where I may need some changes or may need to seek some sort of help
Moderate 63% ( $n = 466$ )	(4) Occasionally I am under stress, and I don't always have as much energy as I once did, but I don't feel burned out
Low 9.3% ( $n = 69$ )	(5) I enjoy my work. I have no symptoms of burnout

**Table 2 – Potential predictor variables investigated for each outcome measure.**

Predictor variable	Outcome		
	MBI-HSS	MBI-GS	K-10
Gender	✓	✓	✓
Age	✓	✓	✓
Work location	✓	✓	✓
Occupation	✓	✓	✓
Years experience in job	✓	✓	✓
Years experience in cancer care	✓	✓	✓
Unpaid hours as% of paid hours	✓	✓	✓
Leave satisfaction	✓	✓	✓
Hours patient contact	✓		✓
CST (need for)	✓		
CST (recency of last training)	✓		
Self-defined burnout			✓

associated with elevated levels of each outcome measure. MBI burnout scores were dichotomised: high *versus* average or low emotional Exhaustion/Exhaustion; high *versus* average or low Depersonalisation/Cynicism; low *versus* average or high Personal Accomplishment/Professional efficacy and psychiatric morbidity was dichotomised as moderate/high/very high *versus* low. Variables showing an association with each outcome measure at the  $p < .2$  level were entered into logistic regression analyses, as variables not showing a significant difference in univariate analyses still may act as confounders when adjusting for other variables. A backward selection process was adopted, and odds ratios (OR) were calculated for variables found to significantly contribute to the logistic regression model ( $p < .05$ ). Final regression models were reached by including only those variables, which contributed at least one significant odds ratio.

Kendall-Tau b correlation coefficients were used to test the association between self-defined burnout (1 item) and MBI sub-scale scores. Pearson correlation coefficients were used as measures of association between the three MBI sub-scales.

Up to three issues could be listed for each open-ended item on perceived burnout causes and recommended preventive strategies; these open-ended responses were qualitatively analysed by categorising them using inductively derived codes grouped according to emerging domains. Each comment was allocated up to four codes depending on the complexity of the response; comments which were too vague or broad to be categorised were excluded from the qualitative analysis. To remove the effect of some respondents listing very similar issues several times, the proportions reported are of the number of respondents making the comment rather than of the number of comments *per se*.

### 3. Results

#### 3.1. Sample

Of the 1157/1322 COSA members willing to receive the initial survey invitation, nine were ineligible (currently not employed; on extended leave). A total of 740 surveys were completed, representing a response rate of 56% of the known

eligible COSA membership and a consent rate of 64.5% of eligible members who received the study information. Participant demographic and occupational characteristics are shown in Table 3. The estimated proportion of consenting participants relative to the total COSA membership by occupation was 53% for nurses, and 22%, 37%, and 59% respectively for radiation, surgical and medical oncologists.

#### 3.2. Prevalence of burnout and psychiatric morbidity

Approximately one-third of participants with DPC (Table 4) and over one-quarter of those with NDPC (Table 5) had high levels of Emotional Exhaustion using the validated MBI measure; rates consistent with those from the single item self-defined burnout scale (Table 1).

Less than 10% of participants with patient contact exhibited high Depersonalisation, while 27% of those without patient contact scored high on the comparable construct of Cynicism. Participants demonstrated high levels of personal accomplishment (57%) and the related professional efficacy (49%).

The self-defined burnout item was more strongly correlated with the emotional exhaustion sub-scale ( $r = .56$ ,  $p < .001$ ) than with the Depersonalisation ( $r = .30$ ,  $p < .001$ ) or Personal Accomplishment ( $r = -.18$ ,  $p < .001$ ) sub-scales, reinforcing the importance of emotional exhaustion in the understanding of burnout. A similar pattern was observed for scores on the MBI-GS. For the MBI-HSS, the highest level of association was between Emotional Exhaustion and Depersonalisation ( $r = .57$ ,  $p < .01$ ), with personal accomplishment negatively correlated with both Emotional Exhaustion ( $r = -.17$ ,  $p < .01$ ) and Depersonalisation ( $r = -.21$ ,  $p < .01$ ). A very similar pattern of inter-correlations was observed for the MBI-GS sub-scales.

Moderate to severe levels of psychiatric morbidity, as measured by the K-10, were displayed in 11.2% of the study sample. A one-way ANOVA revealed that this did not vary significantly by professional group [ $F(4,734) = 0.861$ ,  $p = .487$ ].

**Table 3 – Demographic and occupational characteristics of the 740 respondents.**

Characteristic	N (%)	
Gender: female	581 (79%)	
Occupational group	DPC (%)	
Nurse	92%	393 (53%)
Oncologist and palliative care physician	97%	151 (20%)
Other health professionals <sup>a</sup>	86%	91 (12%)
Research and administration	50%	91 (12%)
Other <sup>b</sup>	50%	14 (2%)
	Mean (SD)	
Age	45.7 (9.9)	
Years in current occupation	13.3 (10.5)	
Years in cancer care	14.2 (8.4)	

<sup>a</sup> Occupations included in this group: psychiatrists, psychologists, pharmacists, social workers, dieticians and counsellors.

<sup>b</sup> Occupations included in this group: music therapists, patient advocates and others who self-selected this category.

**Table 4 – Prevalence of burnout in participants whose work involves direct patient contact as measured by the MBI-HSS.**

	Emotional exhaustion <sup>a</sup> N = 622		Depersonalisation <sup>a</sup> N = 622		Personal accomplishment <sup>b</sup> N = 621	
	M = 21.3	SD = 19.5	M = 4.66	SD = 5.10	M = 38.5	SD = 6.43
	n	%	n	%	n	%
High	204	32.80	61	9.81	352	56.68
Average	160	25.72	94	15.11	177	28.50
Low	258	41.48	467	75.08	92	14.81

a High scores indicate higher levels of burnout.

b Low scores indicate higher levels of burnout.

**Table 5 – Prevalence of burnout in participants whose work does not involve direct patient contact as measured by the MBI-GS.**

	Exhaustion <sup>a</sup> N = 101		Cynicism <sup>a</sup> N = 102		Professional efficacy <sup>b</sup> N = 102	
	M = 2.26	SD = 1.54	M = 1.47	SD = 1.25	M = 4.58	SD = 1.17
	n	%	n	%	n	%
High	27	26.73	28	27.45	50	49.02
Average	16	15.84	21	20.59	26	25.49
Low	58	57.43	53	51.96	26	25.49

a High scores indicate higher levels of burnout.

b Low scores indicate higher levels of burnout.

### 3.3. Predictors of burnout

#### 3.3.1. Direct patient contact

For DPC participants, high levels of emotional exhaustion were significantly associated with having high levels of patient contact (>31 h per week) [OR = 2.224, 95% Confidence Interval (CI) 1.26–3.97]; being dissatisfied with one's leave arrangements (OR = 10.7, 95% CI 6.37–17.99) and reporting a moderate to high need for communication skills training (CST) (OR = 2.31, 95% CI 1.33–3.99) (Table 6).

Dissatisfaction with leave arrangements (OR = 6.88, 95% CI 3.01–15.74) and a higher need for CST (OR = 2.43, 95% CI 1.05–5.63) were also predictive of high levels of Depersonalisation and low levels of Personal Accomplishment (OR = 2.08, 95% CI 1.20–3.58; OR = 3.02, 95% CI 1.49–6.13). Results also suggest that low (<10 h/week) compared to moderate (11–20 h/week) levels of patient contact may be most detrimental in terms of increased depersonalisation (OR = 5.26, 95% CI 1.69–16.67) and decreased personal accomplishment (OR = 3.45, 95% CI 1.72–6.67). Oncologists and palliative care physicians were at

**Table 6 – Factors associated with high levels of 'Emotional Exhaustion' on MBI-HSS (n = 615).**

Variable	n	Odds ratio (95% CI)	p
Age			.072
40–49	219	–	
≤39	164	1.64 (1.00–2.67)	
50–59	183	1.26 (0.78–2.03)	
≥60	49	0.60 (0.25–1.43)	
Leave satisfaction			<.001
Quite/very satisfied	240	–	
Somewhat satisfied	175	4.76 (2.78–8.14)	
Not at all/not very satisfied	200	10.71 (6.37–17.99)	
Hours of direct patient contact per week			.002
≤10	124	–	
11–20	163	0.86 (0.47–1.58)	
21–30	158	1.45 (0.81–2.60)	
≥31	170	2.24 (1.26–3.97)	
CST need			.010
No need	163	–	
Some need	308	1.40 (0.86–2.27)	
Moderate/high need	144	2.31 (1.33–3.99)	

Hosmer and Lemeshow goodness-of-fit test: p = 0.486.

considerably higher risk of feeling depersonalised compared to other health professionals (OR = 5.26, 95% CI 1.58–17.54).

### 3.3.2. No direct patient contact

For NDPC participants, univariate and regression analyses revealed no significant associated variables or predictors of Professional Efficacy. A univariate analysis revealed that respondents were significantly more likely to experience high levels of Exhaustion if they were dissatisfied with their leave arrangement ( $\chi^2 = 44.13$ ,  $df = 2$ ,  $p < .01$ ). High cynicism was predicted by dissatisfaction with leave arrangements and years worked in cancer care. Respondents dissatisfied with their leave arrangements had 18 times the odds of high cynicism (OR = 18.31, 95% CI 3.52–95.14), and those who had worked in cancer care for 21 years or more had 10 times the odds of high cynicism (OR = 10, 95% CI 1.72–50) compared to those who had worked in the area for only 6–10 years.

### 3.4. Predictors of psychiatric morbidity

In the overall sample, the risk of having moderate to severe levels of psychiatric morbidity was increased by being dissatisfied with one's leave arrangements (OR = 3.98, 95% CI 1.92–8.25) and having high levels of self-defined burnout, with participants with high self-defined burnout having almost 10 times the odds of having moderate to severe K-10 scores (OR = 9.77, 95% CI 5.38–17.74).

### 3.5. Perceived causes of burnout

The top five perceived causes of burnout identified by respondents with moderate to high levels of self-defined burnout were related to job conditions and organisational issues. Aspects of job conditions perceived to contribute to burnout centred around issues of excessive workload (32.8%); access to, and staff cover for, leave (16.2%) and perceived demands which were considered unrealistic and unachievable, resulting in feelings of frustration and powerlessness (18.6%). The broad organisational issues perceived to contribute to burnout were frustration with poor hospital administration, management being seen as non-responsive or lacking understanding of job requirements (22.1%) and staff shortages, including not having enough experienced and appropriately trained or skilled staff (21.1%).

### 3.6. Prevention of burnout

The top five recommendations for preventing burnout were related to Job Conditions, Personnel and Organisational issues, including better access to leave such as back-fill of staff, enabling leave to be taken and increased annual leave (26.9%) and access to professional development (22.4%), including support for, and access to, further study, research and professional development. The concept of support and access mostly included leave allowances and financial assistance.

Almost 1 in 3 respondents perceived the establishment and access to support networks to be one of the best ways to combat burnout (28.5%). Recommendations included the availability of formal mentoring or peer support networks, regular and formalised debriefing, access to subsidised coun-

selling by counsellor/psychologist with specialised expertise, as well as the encouragement and promotion of social networks at work. Opportunities for teamwork, networking and prevention of professional isolation were also considered important (17.4%).

Over a quarter of respondents referred to a larger and more skilled workforce as the primary issue to be addressed in order to prevent burnout (26.2%), with recommendations ranging from enhanced training and recruitment strategies to funding for more positions and strategies to improve retention of experienced staff.

## 4. Discussion

This study presented a unique opportunity to explore the occupational health and perceptions of a wide range of the clinical and non-clinical oncology workforce and is the first comprehensive survey of this kind conducted in Australia.

Contrary to previous research which has reported above population-average psychiatric morbidity in cancer care workers overseas<sup>2,11,17,27</sup> and in Australia,<sup>21</sup> participants in this survey had comparable morbidity rates (11.2%) to the general Australian population (12.6%).<sup>28</sup> Our finding that the only two factors predicting the presence of psychiatric morbidity were related to burnout (self-defined burnout, and satisfaction with leave arrangements for the purpose of preventing or recovering from burnout) supports the notion of general psychological distress developing subsequent to, and as a result of, the occupational distress characterising burnout, as suggested by Graham and colleagues.<sup>29</sup>

The high burnout levels we detected, both by self-definition and by the standardised and validated Maslach Burnout Inventory, are comparable to published literature.<sup>2,17,21,28,30</sup> However, it is noteworthy that levels of personal accomplishment for participants with DPC were considerably higher than previously reported,<sup>11,17</sup> suggesting that despite feelings of emotional and cognitive exhaustion, Australian clinical cancer care workers achieve a high sense of accomplishment and achievement from their work, perhaps providing a slightly protective effect against emotional fatigue and exhaustion. However, in participants with DPC, personal accomplishment was more weakly associated with depersonalisation and emotional exhaustion than previously reported.<sup>22</sup> This pattern was also evident for the NDPC group, emphasising that the experience of low competence and job efficacy in Australian cancer care workers appears to be derived from sources mostly unrelated to those generating feelings of exhaustion and indifference.

Exhaustion levels were higher amongst participants with DPC, increasing with increasing time spent in DPC. While the emotional aspect of caring for sick and dying patients plays an important role in the exhaustion component of burnout,<sup>3,30</sup> burnout may be mediated by feelings of being overloaded through a high patient load, rather than patient contact *per se*. Our findings support this notion, as the depersonalisation component of burnout was lower in participants with DPC, with greater time spent with patients having a protective, rather than a detrimental, effect. Optimal benefits (increased personal accomplishment, decreased depersonali-



sation) appear to emanate from spending a moderate amount of time in direct patient contact.

The significant relationship between organisational and 'job-specific' characteristics and burnout was further supported by the finding of dissatisfaction with leave arrangements as a significant predictor of burnout. Ozyurt and colleagues<sup>31</sup> found that higher number of vacations taken was associated with decreased burnout, and research by Isikhan and colleagues<sup>19</sup> reported perceived lack of time for family and personal life as contributing to elevated job stress scores.

A consistent significant predictor of high burnout levels on all three sub-scales for participants with DPC was a need for communication skills training. Given that 23% of the cancer care workers with patient contact reported a moderate to high need for further CST; and that 45% of those with a high need for further CST had never received any training, it seems important to ensure staff access to training. A strong link between CST and personal accomplishment has previously been reported.<sup>17,18</sup>

It is noteworthy that the single item self-defined burnout scale was found to be highly correlated with the MBI Emotional Exhaustion sub-scale replicating previous US findings,<sup>32</sup> reinforcing its potential usefulness as a quick screening tool in clinical settings.

The results from the open-ended questions strongly support the quantitative data. Factors surrounding workload and related occupational and system demands, poor access to leave and perceived poor management, were viewed as the main causes of burnout. This is consistent with research identifying insufficient personal and/or vacation time as a main reason for burnout,<sup>3</sup> and that organisational factors may result in greater occupational stress than emotional issues related to caring for dying patients.<sup>33,34</sup>

Strategies suggested for preventing or combating burnout principally addressed access to psychosocial support, adequate leave and professional development together with addressing staff shortages. This strongly echoes the message by Mackereth<sup>35</sup> that both personal and organisational strategies must be implemented in order to reduce burnout. While little previous research has been conducted exploring the effects of 'systemic' changes on burnout levels, a growing body of literature documents the benefits of attending to staff psychosocial and training needs (e.g. [36–38]).

In summary, our findings suggest that the Australian oncology workforce experiences considerable occupational distress similar to cancer care personnel overseas, while possessing high levels of personal accomplishment. Burnout is perceived largely to be an artefact of feeling overworked and unable to take the necessary time off work to prevent, or recover from, burnout with these perceptions strongly supported by the quantitative data. The oncology workers in the current study believe that strategies for addressing burnout should involve improved access to leave as well as attention to staff psychosocial and training needs, with the quantitative results emphasising the importance of regular CST.

On the basis of the current findings, it is recommended that regular screening for burnout and risk behaviours ideally should be incorporated into existing hospital-based OH&S

procedures to enable identification of at-risk staff and early detection of burnout. Particular focus should be on those with substantial amount of patient contact, who neglect to take adequate leave, or on those not having attended communication skills training.

#### 4.1. Limitations

While our response rate is similar to published research, making prevalence rate comparisons appropriate, caution should be exercised in generalising these findings to the total Australian oncology workforce and in particular some of the underrepresented professional groups, such as oncology nurses and oncology social workers, due to the self-selection bias introduced by the survey methodology and by the membership of COSA. Ideally, future research in this area should involve the collection of objective measures of burnout if possible.

#### Conflict of interest statement

None declared.

#### Acknowledgements

This work was commissioned by the Clinical Oncological Society of Australia and funded by Cancer Australia. The assistance of both organisations in facilitating the completion of the research is gratefully acknowledged. However, no contribution was made by the funding source to any aspects of the study. We thank Ms. Margaret McJannett and her team for facilitating the contact with the COSA members; to the COSA Council members for assistance in reviewing the survey; to Christophe Lecathelinais for statistical assistance, the University of Newcastle Corporate Information Unit for online survey administration and, most importantly, the members of COSA who took the time to complete the survey.

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