

Physician burnout: a pilot study

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Abstract

This study assesses the level of burnout in a sample of New Zealand physicians, associated work and personal characteristics, and the need for development of a peer supervision or support system. Questionnaires that measured a number of work and personal characteristics, including the Maslach Burnout Inventory, and additional questions regarding mistakes, and need for support, were sent to 83 physicians in the Waikato and Bay of Plenty areas. Of the 50 respondents, 28% experienced high levels of two or three of the three aspects of burnout (emotional exhaustion, depersonalisation, low personal accomplishment). Emotional exhaustion correlated with a greater need for support. Most respondents favoured a one-to-one support system. This study highlights the need for a nationwide survey of physicians to measure levels of burnout with a view to developing a preventative support system.

It is well documented that doctors experience a high level of stress in their profession and that this can lead to physical, psychological and emotional harm, in particular, burnout.¹⁻³ Burnout is a syndrome defined by Maslach and Jackson as consisting of emotional exhaustion, depersonalisation (a tendency to have negative and cynical thoughts towards other people, patients included), and a reduced sense of personal accomplishment.⁴ Burnout is of particular concern in the medical setting as it is believed to reduce the quality of care doctors are able to provide patients.^{1,2}

Researchers in the UK and USA have investigated levels of stress, burnout and associated psychiatric morbidity in health professionals across many specialties, with a view to prevention of these adverse outcomes.^{1,5-11} In previous work the main correlations and possible causes of burnout appear to be lack of autonomy, excessive bureaucratic interference and paperwork, work overload, role conflict, helplessness to influence policy, and lack of variety in one's daily work.^{1,2,3,6,7,12} Burnout has also been correlated with psychological disturbance (assessed using the 12-item general health questionnaire^{6,7}), and greater levels of anxiety and depression.² Age tends to be negatively associated with burnout,^{6,7,12} and although males and females seem to be affected differently by burnout, there is no strong evidence that either are more at risk.²

In New Zealand, the limited research into stress and burnout in doctors has focused on general practitioners,^{13,14} with

little emphasis on the stresses of clinical practice on physicians, and no studies on the impact of burnout. In 2001, Dowell et al reported that 12.5% of 279 physicians described a level of symptoms associated with severe psychological disturbance,¹³ similar to the 9.9% found in 377 GPs in 2000.¹⁴ In addition, physicians reported lower levels of job satisfaction.^{13,14} Pressures facing physicians may well differ from colleagues in general practice. It is, therefore, important to determine the needs of physicians with a view to developing a system to improve their health and well-being, and the quality of patient care.

Research focusing on stress in GPs has prompted the implementation of peer support groups and systems for mentoring.^{8,9,15} These support systems enable GPs to acknowledge, discuss and solve professional and personal problems with peers or a professional supervisor at an early stage, and have been documented to reduce stress and improve morale for those involved.^{8,9,15} Despite the success and benefits of these support systems in general practice, however, there is little confidential support or supervision for physicians.

The aim of this pilot study was to determine the need for a support system for New Zealand physicians by measuring the levels of burnout and effective well-being, in a sample from the Waikato and Bay of Plenty. We report on the impact of work characteristics and educational activities on burnout, how physicians deal with problems due to mistakes in clinical practice, and their views on introducing a system for peer support/supervision.

Methods

The participants were 83 physicians, comprising 76 members of the Royal Australasian College of Physicians in the Waikato and Bay of Plenty area, and seven additional consultants in these areas. All were sent a questionnaire in early December 2002 that was numbered to ensure confidentiality, and accompanied by a letter explaining the purpose of the study. A single reminder letter was sent out one month after the initial questionnaire had been sent.

The questionnaire aimed to assess the following attributes of the participants:

Demographic information: Personal details were obtained on age, gender, marital status, number of dependent children and ethnicity. Details were obtained on qualifications, specialty, number of years employed as a consultant, primary place of employment, and number of hours worked at primary place of employment.

Burnout was assessed using the Maslach burnout inventory (MBI).⁴ The inventory measures the three aspects of burnout; *emotional exhaustion* (feeling emotionally drained), *depersonalisation* (negative/cynical attitudes and feelings about one's patients), *reduced personal accomplishment* (tendency to evaluate one's work with patients negatively). Scores were totalled to give a single figure for each of the three aspects of burnout, but there was no combined total score for burnout. Scores were then assessed as being high, medium or low for each aspect of burnout according to normative ranges for medical workers, found in the MBI.

Work characteristics: Nine work characteristics were assessed as developed by Haynes et al.¹⁶ These characteristics were autonomy and control, feedback, influence over decisions, leader support, professional compromise, role clarity, role conflict, peer support and work demands.

Job satisfaction was assessed using 16 items developed by Warr et al.¹⁷ Total job satisfaction-A is calculated by totalling an individual's scores for the first 15 items, and overall job satisfaction is measured by the response to the 16th item. A second figure for total job satisfaction (total job satisfaction-B) was measured using nine of the first 15 items as selected by Dowell et al.^{14 15} This selection of nine items was found to be more relevant to physicians and GPs than the full 15 questions.

Effective well-being was assessed using three scales developed by Warr.¹⁸ The three scales were anxiety-contentment, depression-enthusiasm, and tiredness-vigour.

Educational activities were assessed by questions developed by Benbow et al.²⁰ The physicians were asked how much time they spent on personal study, research, educational courses, and teaching students or trainees each week. Responses could range from 0 ("0-1/2 hours/week") to 6 (">5 hours/week").

Mistakes and subsequent need for support was assessed using a series of 15 questions developed from Marc et al.²¹ Questions such as "Do you feel the need for support in response to your mistakes?" were scored on a 5-point scale from 1 ("not at all") to 5 ("a great deal"). Responses were defined as "yes" if respondents scored 3 "a moderate amount" or above, and "no" if they scored 1 or 2 "just a little".

The final page of the survey consisted of six questions regarding the relevance of the survey, and of setting up a peer support or supervision system in the respondent's work place, and what type of support service they would prefer. Some questions only offered a selection of answers, for example "If a peer support system was to be developed, would you prefer a one-to-one mentoring or a group support system?" Other questions were left open, for example, "What are the most important and key issues you would want in this peer support programme?"

Table 1
Demographic profile of respondents

		(N = 49)	
Male	42	(86%)	
Female	7	(14%)	
Mean Age (sd) range	46.4	(7.4)	34_69
Married	45	(91%)	
Mean number of dependent children (sd) range	2.2	(1.7)	0_9
Pakeha/ NZ European	42	(86%)	
Other	7	(14%)	
Mean years employed as consultant (sd) range	11.5	(7.3)	
Hours/week at primary place of employment (sd) range	47.2	(11.6)	

Note. One respondent refused to enter demographic details

Table 2

Number and percent of respondents who fall in the low, average and high ranges of burnout for emotional exhaustion, depersonalisation and personal accomplishment

	Number respondents (%) Low Burnout	Number respondents (%) Average Burnout	Number respondents (%) High Burnout
emotional exhaustion			
Maslach Ranges*	≤18	19-26	≥27
Present Study (N=50)	20 (40%)	13 (26%)	17 (34%)
depersonalisation			
Maslach Ranges	≤5	6 - 9	≥10
Present Study (N=50)	23 (46%)	13 (26%)	14 (28%)
personal accomplishment**			
Maslach Ranges	≥40	39 - 34	≤33
Present Study (N=50)	16 (32%)	15 (30%)	19 (38%)

* Ranges established from normative data of 1,104 physicians and nurses in Maslach Burnout Inventory Manual⁴.

** Respondents who score high on personal accomplishment fall in the low range of experienced burnout. Those who score low on personal accomplishment fall in the high range of experienced burnout.

Data was analysed using Microsoft Access, Excel, and *Statistica*®. The differences between sample means and normative data were computed with statistical significance set at $P=0.05$. The strength of relationships between the three aspects of burnout and other study variables were measured using Pearson's correlation coefficients.

Results

Of the 83 physicians surveyed, 50 returned usable questionnaires, giving a response rate of 60%. Of the 49 respondents who completed this section, the mean age was 46.4 years, with 86% being male and 91% married. Most respondents were Pakeha/NZ European (86%), and the other 14% were South African, European, Asian, and Sri Lankan. No physicians in the sample were Māori. The mean number of years employed as a consultant was 11.5, and mean number of hours worked per week at primary place of employment was 47.2. Twenty-four percent of respondents were paediatricians, with the rest representing other specialities.

Overall, sample means were not significantly different to normative data for medical workers in the Maslach Burnout Inventory Manual.⁴ Mean scores (and standard deviations) for emotional exhaustion, depersonalisation, and personal accomplishment were 21.8 (10.6), 7.1 (5.1), and 36.0 (6.5), respectively. However, 34% showed a high degree of emotional exhaustion, 28% showed a high degree of depersonalisation, and 40% showed a level of low personal accomplishment, all of which fall in the range indicating a high risk of burnout. Five respondents (10%) scored in the high range for all three aspects of burnout. They were all married men who worked most of their time in hospital practice. Of these five, one would prefer a one-to-one mentoring programme, two would prefer a peer support group, and two did not answer the open question. Only two individuals (4%) scored in the low category for

all three aspects of burnout. Twenty-eight percent of respondents scored in the high level of burnout on two or more of the burnout subscales.

The only significant correlate between the three subscales of burnout and demographic information was age, which was negatively correlated with emotional exhaustion (Pearson's correlation coefficient -0.35 , $p<0.05$). This relationship suggests that younger physicians are associated with higher levels of emotional exhaustion.

Higher levels of emotional exhaustion correlated significantly with a greater degree of depersonalisation, anxiety, depression, tiredness, and psychological disturbance. Emotional exhaustion was also associated with higher levels of professional compromise, role conflict and work demands, and lower levels of autonomy and control, feedback, role clarity, and job satisfaction.

Higher levels of depersonalisation were associated with lower levels of autonomy and control, and higher degrees of professional compromise and work demands. Higher levels of personal accomplishment were associated with a lower degree of anxiety, depression, tiredness, and psychological disturbance, a higher degree of role clarity, and greater time spent on personal study and teaching. In this sample, none of the three factors of burnout correlated significantly with peer support or leader support, influence over decisions, or amount of time spent on research or attending educational courses.

Correlations between burnout and questions on making mistakes in Clinical Practice, and the subsequent need for support

In general, higher levels of emotional exhaustion were associated with a greater need for support after making mistakes in clinical practice. High emotional exhaustion

scores correlated significantly with greater feelings of self-doubt, disappointment and self-blame in response to mistakes and a greater need for reassurance. Individuals with emotional exhaustion reported a greater need to talk to someone about their mistake, greater need for validation of their decision-making process, and reaffirmation of their professional competence. Depersonalisation was significantly correlated with a greater need to talk to someone about their mistakes, and a greater need for reassurance of personal self-worth. Higher levels of personal accomplishment correlated significantly with respondents being more willing to offer a colleague unconditional support if s/he made a mistake in Clinical Practice.

Twenty-nine participants responded to "What would be the relevance of setting up a peer support programme for your clinical practice?" Of these, 16 (55%) believed this would be relevant, or very relevant, and two (7%) thought this would be somewhat relevant. Three

individuals (10%) thought this would be irrelevant, or of limited relevance. Eight (28%) felt that support already existed in their practice informally, and three of these would welcome formalisation of this support.

In response to "If a peer support programme was developed, would you prefer a one-to-one mentoring or a group support system?" 18 did not answer. Of the 32 who did respond, 17 (53%) would prefer a one-to-one mentoring system, nine (28%) would prefer a peer support system, and three (9%) would like a combination of the two systems. Three (9%) did not want either, one of whom felt they already had support informally at work.

Twenty-two of these respondents went on to list the most important and key issues they would want in such a support system. The most frequently stated responses were confidentiality and trust, the ability to talk about concerns, difficulties and feelings, and for meetings to be regular and in protected time.

Table 3
Pearson's correlation coefficients showing the relationship between the three subscales of the Maslach burnout inventory and work characteristics, job satisfaction, effective well-being, and educational activities

Variable	EE	DP	PA
Maslach burnout subscales			
Emotional exhaustion	-		
Depersonalisation	0.41**	-	
Personal accomplishment	-0.12	-0.19	-
Work characteristics			
Autonomy and control	-0.54**	-0.30*	0.29
Feedback	-0.46**	-0.19	-0.23
Influence over decisions	-0.13	0.03	0.16
Leader support	0.08	0.24	-0.02
Professional compromise	0.35*	0.34*	-0.27
Role clarity	-0.46**	-0.20	0.44**
Role conflict	0.39*	0.24	0.04
Peer support	-0.14	0.17	-0.12
Work demands	0.58**	0.32*	-0.30
Job satisfaction			
Total job satisfaction-B	-0.53**	-0.13	-0.001
Overall job satisfaction	-0.63**	-0.17	0.17
Effective well-being			
Anxiety-contentment	-0.66**	-0.21	0.42**
Depression-enthusiasm	-0.68**	-0.25	0.41**
Tiredness-vigour	-0.70**	-0.16	0.40*
Educational Activities			
Personal study	0.33	-0.04	0.33*
Research	0.13	0.14	0.13
Educational courses	-0.06	0.12	-0.06
Teaching	0.30	-0.12	0.30*

Items in bold indicate significance (*p<0.05, **p<0.005) with respect to the present study. Emotional exhaustion (EE), depersonalisation (DP), personal accomplishment (PA)

Discussion

The 50 Waikato and Bay of Plenty physicians who took part in this study reported levels of the three aspects of burnout similar to normative data from medical workers in the Maslach Burnout Inventory Manual.⁴ Mean scores for these three aspects – emotional exhaustion (21.8), depersonalisation (7.1), and personal accomplishment (36.0) – all fell in the middle ranges for the level of burnout experienced. However, 34% of respondents scored in the high range for emotional exhaustion, 28% scored in the high range for depersonalisation, and 38% scored in the high range for reduced personal accomplishment. Ten percent scored in the high range for all three aspects of burnout, indicating the likely presence of burnout, and 18% scored in the high range for two of the three aspects. These 28% are at greatest risk of suffering from the symptoms of burnout, which are associated with significant personal dysfunctions. Physical exhaustion, increased use of drugs and alcohol, marital and family problems,⁴ anxiety and depressive disorders, psychological dysfunction, reduced job satisfaction, increased job turnover, medical errors, and a reduction in patient care and satisfaction² have all been associated with higher levels of burnout. This pilot study is the first to report on the level of burnout experienced by New Zealand physicians.

The three aspects of burnout were also associated with a range of personal and work characteristics. Emotional exhaustion was negatively associated with age, indicating that younger physicians are at greatest risk of experiencing burnout. This finding supports previous research on burnout in the UK and US, which shows that younger employees are more likely to experience burnout,^{6,7,12} but these studies do not specifically link this to emotional exhaustion.

Correlations between the three burnout subscales and work and personal variables have been researched extensively overseas across many professional groups including nurses, teachers, social workers, and various medical specialities.²⁻⁷ Not all studies agree which factors correlate with which aspects of burnout, but some general trends have emerged. The present study found that emotional exhaustion, in particular, was associated with a lack of autonomy, control and role clarity, and increased role conflict and work demands. These findings reflect the trends from previous studies.^{2 5 12}

Job satisfaction is commonly negatively correlated with burnout,^{1 6} specifically to emotional exhaustion, as was found in the present study, but also with depersonalisation and reduced personal accomplishment.⁶ Ramirez et al suggested that job satisfaction actually protects consultants from burnout.⁷

A study of 1045 psychiatric nurses showed that positive affect was associated with all three factors of burnout,

and negative affect was associated with higher levels of emotional exhaustion and depersonalisation.⁶ The present study showed that anxiety–contentment, depression–enthusiasm, and tiredness–vigour scales significantly correlate with emotional exhaustion and personal accomplishment, but not with depersonalisation.

Previous studies showed that peer cohesion, peer support, and supervisor support correlate with reduced levels of burnout,^{6 12} whereas the present study showed no significant relationship between peer or leader support, and burnout. Leiter et al suggest that professional support plays a dual role of alleviating and aggravating burnout.²² A larger study is needed to confirm such a correlation in a New Zealand-wide survey of physicians.

Amount of time spent on personal study, and teaching students or trainees, significantly correlated with increased personal accomplishment, but had no association with emotional exhaustion or depersonalisation. The relationship of these educational activities with burnout has, to our knowledge, not previously been assessed.

This study is the first to compare how making mistakes in clinical practice, and subsequent feelings, correlate with the three aspects of burnout. Findings suggest that physicians showing high levels of emotional exhaustion report a greater need to talk to someone after making a mistake, and need support. They also have a greater need to be reassured of their personal self-worth, their professional competence, and their decision-making process. This suggests that setting up a peer support or one-to-one supervision system would greatly benefit physicians who are at high risk of burnout.

Of the 32 physicians who responded to the question regarding preferred support, the majority (53%) chose one-to-one supervision, 28% preferred peer-support, and 9% would like a combination of the two. A further 9% were opposed to both these options. From these responses we suggest that if a peer support or supervision service was developed in New Zealand by the RACP, it should be voluntary, and perhaps a component of audit in the maintenance of profession standards programme.

Limitations of this study include response rate, survey length, small sample size and study design. The response rate of 60% is a possible source of error. Larger samples are always desirable for more representative results. This survey was 11 pages long and may have taken a considerable amount of time to complete, which would have been a deterrent to many doctors.

We have been able to identify the level of burnout in a sample of 50 Waikato and Bay of Plenty physicians, determine some correlating factors, and assess the physicians' views on the need for support in their clinical practice. With a larger sample, however, we would be

able to assess which factors best predict burnout using multiple regression techniques.

As a cross-sectional study, the results show the impact of burnout at 'one point in time'. Some respondents mentioned that the timing of the survey coinciding with Christmas could have had some impact on responses. Longitudinal studies, although much more difficult to achieve, would give insight into the development of burnout over time. Such studies may be desirable in the future, but it is important in the first instance to identify how many physicians may be at risk of burnout at one time, as can be done via a cross-sectional study.

Conclusion

This pilot study provided important information on the levels of burnout in Waikato and Bay of Plenty physicians, and work factors and personal characteristics associated with those levels. We recommend a nationwide study to assess burnout in New Zealand physicians as a whole, and the work and personal factors that significantly correlate with burnout in that group. Further studies should also establish physicians' preferences for setting up peer support or supervision services.

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