Impact of burnout on empathy

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ABSTRACT

AIM: Burnout has a damaging effect on both the wellbeing of medical professionals and patients alike. Empathy is an important part of the therapeutic relationship and could be damaged by burnout. We aimed to describe the prevalence of burnout, assess levels of empathy and explore the relationship between burnout and empathy among senior medical officers (SMOs). We hypothesised that there would be a negative correlation between empathy and burnout.

METHOD: This was a cross-sectional observational study involving SMOs from a variety of specialities. The focus is on SMOs with relatively prolonged contact times with patients. Email invitations were sent out requesting participation in an electronic survey on the QuestionPro platform. The survey comprised 42 questions enquiring about demographics, empathy (Jefferson Scale of Physician Empathy) and burnout (Copenhagen Burnout Inventory). Correlational analyses were performed.

RESULTS: Three hundred and fourteen invitations were sent out and 178 responses were received (56.7% response rate). Forty-five percent of SMOs surveyed were experiencing high levels of personal burnout. There was a statistically significant negative correlation between empathy and patient-related burnout (p=0.018).

CONCLUSIONS: The results show high levels of personal burnout among SMOs and suggest that empathy reduces as patient-related burnout increases. The nature of this relationship is a complex one, and other contributing variables should be considered.

Burnout—a syndrome that is characterised by emotional exhaustion, depersonalisation and low sense of personal accomplishment—has been associated with a higher frequency of medical errors, lapses in professionalism, impeded learning, problematic alcohol use and suicidal ideation. Burnout is important because it can damage doctors and impair patient care. Burnout is defined as "a state of physical, emotional and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding."[1] Many variables contribute to the development of burnout, such as long hours of work, work-home conflicts, resourcing, managerialism and interpersonal relationships.[2,3]

Empathy helps with becoming a good doctor. It is an extensively discussed concept that plays a role in the therapeutic relationship, as does burnout. The common factor in most definitions of empathy is that it bridges the gap that exists between the self's experiences and the experiences of others.[4–6] Empathy has been described as a way of grasping another's emotions, and thereby it facilitates trust and disclosure in the patient–doctor relationship. Many doctors agree that empathy makes the practice of medicine more satisfying and meaningful.[6]

Our study had a particular focus on one aspect of burnout: that is, its association with empathy. Qualitative and quantitative research around the factors that contribute to burnout has been completed both internationally and in New Zealand.[2,7,8] The objective of this study was to explore the rates of, and relationship between, burnout and empathy among senior medical officers (SMOs). We hypothesised that there would be a negative correlation between empathy and burnout.

Methods

Study design

The study population of this observational cross-sectional study was SMOs employed by the Canterbury District Health Board (CDHB) who come from a variety of specialities and have regular face-to-face contact with patients. The participants were invited to complete an anonymous electronic survey using the QuestionPro platform (QuestionPro Inc. Beaverton, OR US). The survey was comprised of 42 questions enquiring about demographics, empathy (Jefferson Scale of Physician Empathy) and burnout (Copenhagen Burnout Inventory).

Category A ethics approval was granted from the University of Otago Human Ethics Committee (F17/017). The Ngāi Tahu Research Committee was consulted prior to the commencement of the study to ensure acknowledgment of the needs of Ngāi Tahu for Māori development. CDHB Local Authority was also granted.

Setting

The study was performed at the University of Otago (Christchurch campus), and CDHB Local Authority was used to contact CDHB employees via their email addresses. Participants were recruited via email invitation and asked to complete the online survey between 15 December 2017 and 29 August 2018.

Participants

SMOs from the CDHB were invited via mailing lists. Specialities were selected on the basis of having adequate contact time with patients. Speciality groups included those from anaesthesia, medicine, surgery and psychiatry. The surgery group included those who responded from general surgery, obstetrics and gynaecology, vascular, plastics and orthopaedics. The medicine group combined those who responded from general medicine, respiratory, cardiology, oncology and palliative care. As mentioned, we selected specialties that had a relatively prolonged contact time with patients, and specialties that included more substantial numbers of SMOs. The excluded specialties were dermatology, emergency medicine, endocrinology, infectious diseases, intensive care, neonatal medicine, neurology/neurosurgery, ophthalmology, radiology and pathology.

Variables

Empathy

The Jefferson Scale of Physician Empathy is a 20-question validated questionnaire created by Hojat et al at the Jefferson Medical College, Philadelphia, in 2001.[9] Each question is scored on a 7-item Likert-scale, with the total sum relating to each participant's level of empathy. A high level of empathy was defined as any total score greater than 1.5 standard deviations (SDs) above the mean. This is in accordance with the scoring algorithm provided by the authors of the scale.[10]

Burnout

The survey employed the Copenhagen Burnout Inventory (CBI), a 19-question validated questionnaire created in Denmark by researchers Borritz and Kristensen. This questionnaire enquires about burnout in three domains: personal burnout, work-related burnout and patient-related burnout.[11] Each question is scored on a 5-item Likert scale. A high degree of overall burnout is a score of 50 or more in each of the categories.[12] In December 2017, Chambers et al used the CBI to quantify levels of burnout among New Zealand SMOs.[2]

Data sources/measurement

The survey was established and disseminated using QuestionPro®, an online survey platform. We collated demographic data, including age, gender, speciality and ethnicity, as well as the time since the participant's last period of annual leave that was greater than one-week in duration. Scoring of each of the empathy and burnout scales was performed in accordance with scoring guidelines for each of the questionnaires.[10,12] The initial invitation was sent on 15 December 2017 and follow-up invitations (sent to all people who did not respond to the initial invitation) were sent on 23 April 2018 and 2 August 2018.

Study size

A sample size of approximately 180 participants would provide >80% power to show an R^2 of >0.05 for the association between empathy and burnout as statistically significant (2 tailed, α=0.05).

Statistical methods

SPSS version 23 was used for statistical analyses.[13] Frequencies were calculated for demographic variables, and Pearson's correlation coefficients were calculated between the empathy and burnout subscales. Missing answers were replaced using single imputation. Imputations made on the CBI involved completing missing answers with the average calculated from answers scored in the respective subscale. Those who responded to fewer than three or four questions in each subscale were classified as non-responders.[12] Missing answers on the Jefferson Empathy Scale were filled with the average score of completed answers. Those who answered fewer than 16 questions out of the 20-question total were classified as non-responders.[10]

Results

Participants

Three-hundred and fourteen invitations to participate were made. We received 178 responses (56.7% response rate). Table 1 shows the demographics of the 178 participants: 64.6% were male, 72.5% were New Zealand European and the most prevalent age bracket was 41–50 (37.6%). The specialty with the highest response rate was medicine (43.5%).

Main results

44.9% of participants were experiencing high levels of personal burnout, 29.2% were experiencing high levels of work-related burnout and 5.6% were experiencing high levels of patient-related burnout. Five percent of participants were experiencing high levels of burnout in all three domains (personal, work-related and patient-related burnout) (Table 1).

We found a statistically significant negative correlation between empathy and level of patient-related burnout (Table 2).

Other analyses

Specialties

Comparisons of burnout and empathy between specialties are shown in Table 3. These results show the surgery group scored highest in both personal and work-related burnout, with scores of 48.04 (SD 16.74) and 46.32 (SD 19.98) respectively, although this result is not statistically significant.

Table 1: Participant characteristics.

Characteristic	n (%)
Sex	
Male*	115 (64.6%)
Female	62 (34.8%)
Age	
>60	27 (15.2%)
51–60	57 (32%)
41–50	67 (37.6%)
31–40	27 (15.2%)
Ethnicity**	
NZ European	129 (72.5%)
Other	49 (27.5%)
Time since last annual leave	
< 1 month ago	49 (27.5%)
1–3 months ago	72 (40.4%)
3–6 months ago	43 (24.2%)
>6 months ago	11 (6.2%)
Decline to answer	3 (1.7%)
Specialty * (invited)**	
Anaesthesia (61)	29 (16.3%)
Medicine (110)	77 (43.3%)
Surgery (78)	34 (19.1%)
Psychiatry (61)	23 (21.3%)
High degree of burnout (CBI score >50)	
Personal	80 (44.9%)
Work-related	52 (29.2%)
Patient-related	10 (5.6%)
All three above 50	9 (5.1%)

*59% of Canterbury District Health Board SMOs are male.
** 'Others' includes ethnicities with populations < 10. These included Māori, both Māori and Pakeha, English/German, Indian, South African, European, Chinese and unknown mixed/prefer not to answer.
*** 'Medicine' includes: general medicine, respiratory, cardiology, gastroenterology, oncology and palliative care. 'Surgery' includes: general surgery, obstetrics and gynaecology, vascular, plastics and orthopedics.

Table 2: Correlation between empathy and burnout.

	Personal burnout, r (p)	**Work-related burnout , r (p)**	**Patient-related burnout, r (p)**
Jefferson empathy total	-.126 (0.093)	-.0.091 (0.228)	-.223* (0.003)
Personal burnout	1	.812* (0.00)	.513* (0.00)
Work-related burnout	-	1	.634* (0.00)
Patient-related burnout	-	-	1

* = statistically significant result ($p < 0.01$)

Table 3: Empathy and burnout by specialty.

Speciality (n)	**Jefferson empathy total, mean (SD)**	**Personal burnout, mean (SD)**	**Work-related burnout, mean (SD)**	**Patient-related burnout, mean (SD)**
Anaesthesia (29)	110.70 (12.14)	42.24 (15.22)	35.88 (15.31)	19.25 (12.81)
Medicine (77)	112.84 (11.03)	44.91 (18.84)	39.29 (17.82)	23.32 (17.00)
Psychiatry (38)	120.43 (7.54)	40.79 (18.10)	39.09 (16.41)	27.10 (17.33)
Surgery (34)	111.83 (11.48)	48.04 (16.74)	46.32 (19.98)	24.44 (14.33)
Total (178)	113.91 (11.14)	44.19 (17.77)	40.04 (17.76)	23.66 (16.00)
P-value	<0.01	0.33	0.11	0.26

Table 4: Age of SMOs and level of empathy and burnout t-tests.

	Age ≤50, mean (SD)	**Age >50, mean (SD)**	**t**	**p**
Empathy	112.52 (11.45)	115.46 (10.64)	-1.76	0.08
Personal burnout	47.87 (16.37)	40.08 (18.46)	2.99	0.003
Work-related burnout	42.79 (18.04)	39.92 (16.99)	2.22	0.03
Patient-related burnout	24.35 (16.15)	22.87 (15.89)	0.66	0.54

The psychiatry group scored the highest Jefferson empathy total mean score (120.43, SD 7.54). The Jefferson empathy totals were significantly different (F (3, 174)=6.32, p<0.01).

Age

We also found a statistically significant association between age of SMOs and level of burnout (Table 4). When age was split into ≤50 versus >50, those in the <50 bracket scored higher in two domains of burnout (p<0.05, personal and work-related).

Annual leave

Time since last annual leave had an insignificant effect on both the average empathy score and burnout score. See Appendix Table 1.

Qualitative feedback

As well as the survey completion, three people provided anecdotal feedback, which is shown in Appendix Figure 1.

Discussion

The aim of this study was to explore the rates of, and relationship between, burnout and empathy among consultant staff. Our study has found that the prevalence of high levels of personal burnout was 45%. Thirty percent of SMOs scored high levels of work-related burnout and 6% scored high levels of patient-related burnout. High levels of burnout in all three domains of the CBI (personal, work-related and patient-related burnout) was found in 5% of SMOs. Of the 178 subjects, 9 of the 10 patient-related burnout doctors also had personal and work-related burnout—that is, burnout in all three domains. This suggests that patient-related burnout may be a proxy measure of severe burnout. Moreover, there was a negative association between empathy and patient related burnout.

Though these rates of burnout may seem high, rates of burnout among doctors internationally range from 30–70%.[14,15] Chambers et al found in their study of burnout prevalence in New Zealand that 50% of senior doctors and dentists were experiencing high levels of personal burnout.[2]

Other analyses included exploring the relationship between SMO age and level of burnout. We found that those aged <50 were more likely to score higher in two of the domains of burnout. Similar research in New Zealand[2] and abroad[16] has found that those in younger age groups present as being most at risk of high burnout. It has previously been observed that burnout is negatively related to work experience.[17,18] This relationship is possibly due to the added responsibility and relative inexperience to those who are <50, having younger children at home during this period, older SMOs being better able to deal with work-related pressure or the number of hours that SMOs <50 years of age work. Furthermore, it may be that those who experience burnout when <50 go on to leave their job and seldom return—hence excluding them from our analyses in the >50 age bracket.

We found a statistically significant negative correlation between empathy and patient-related burnout. There are three theories that aim to describe the nature of the relationship between empathy and burnout:

1. Burnout reduces one's ability to be empathetic through sheer exhaustion and/or withdrawal.
2. Being empathetic leads to the development of burnout (ie, compassion fatigue).
3. By increasing work satisfaction and self-awareness, empathy may *protect* against burnout.[7,19]

A systematic review conducted by Wilkinson et al (2017) found 8 out of the 10 studies demonstrated a negative correlation between empathy and burnout.[19] The relationship between empathy and burnout is a complex and potentially multi-directional one. Although beneficial in terms of patient outcomes, high levels of empathy have been postulated to cause compassion fatigue and emotional exhaustion, which can lead to burnout.[7,8,19] On the other hand, Zenasni et al (2012) postulate that being empathetic creates a greater awareness of not only your patients' emotions, but also your own. This leads to more self-reflective and meaningful practices that can protect against burnout.[7] It is difficult to grasp how empathy could protect against burnout, but qualitative research in the field suggests this is also a possibility.[8] More likely, however, is that burnt-out (physically and emotionally exhausted) doctors may have a

reduced capacity to empathise with patients. These burnt-out doctors are more likely to withdraw themselves from the therapeutic relationship.[7,8]

Limitations and future directions

The cross-sectional nature of the study comes with limitations in finding causality. The relationship needs to be assessed longitudinally to evaluate causation. It may also be necessary to assess these factors qualitatively in order to gauge a clearer idea of the complex causes of burnout.

Our survey strategy deliberately excluded SMOs who had little to no patient contact. Future research could perhaps include these SMOs and have patient contact hours as an independent variable for predicting the various types of burnout.

Potential confounders that can contribute to levels of empathy and burnout were not controlled for. For example, ill-health and significant home-life stressors were not recorded. Future research should record these and perform a more detailed analysis. Although it's reasonable for this type of study, the response rate of 56.7% may have introduced selection bias. The limitations of our instruments used to assess levels of burnout (CBI) and empathy (Jefferson Scale of Physician Empathy) should be considered. However, we have used the CBI and Jefferson Scale of Physician Empathy because the current literature argues they are acceptable scales to use to measure their respective variables.

We received qualitative feedback addressing the other variables that contribute to burnout (See Appendix Figure 1), although they were not formally explored in this study. These variables have been explored in previous studies and include many factors external to individual SMOs, such as resourcing, work-load and interpersonal relations.[2,3] It would be vital to consider these contributing variables in future research in order to combat burnout and its manifestations.

Given the demonstrably high rates of burnout among SMOs, interventions for physician burnout should be deployed. Two recent editorials in the *New Zealand Medical Journal* have focused on this topic. Muthu[20] stated that "The evidence is clear that caring for others should not come at the expense of the caregivers own physical, mental, spiritual and social wellbeing across their life-course. A comprehensive strategic evidence-based solution with novel approach to the provision of healthcare is required for hospital-based doctors and those in the community," and Muthu described what this might look like. Likewise, Frizelle and Mulder[14] described how burnout might be may better avoided and managed and referred to nine organisational strategies the Mayo Clinic is currently applying to promote physician wellbeing. In addition, a systematic review that identified 13 studies, of which 4 were randomised controlled trials, reported that interventions for physician burnout should use a holistic approach and a wide range of techniques because of the wide range of causes, such as personality factors and the specific issues faced by each physician.[21] Examples of interventions that have shown promise include mindful communication,[22] art therapy and cognitive behavioural therapy (CBT)[23] and support group sessions.[24]

Conclusion

Our study shows high levels of burnout in senior medical officers (SMOs). It also confirms the negative association between empathy and burnout among SMOs. This relationship is an important one to understand in more detail because reducing burnout and enhancing empathy are associated with favourable outcomes for doctors and patients alike.

Appendix

Appendix Table 1: Time since last annual leave >1 week vs. empathy and burnout scores.

	Time since last annual leave (n*)	Mean (SD) **
Empathy	≤ 1 month (49)	114.01(11.79)
	> 1 month (126)	113.87 (10.90)
Personal burnout	≤ 1 month (49)	42.35 (16.78)
	> 1 month (126)	44.74 (18.33)
Work-related burnout	≤ 1 month (49)	40.11 (16.05)
	> 1 month (126)	39.85 (18.48)
Patient-related burnout	≤ 1 month (49)	23.72 (16.58)
	> 1 month (126)	23.45 (15.89)
	Time since last annual leave (n*)	**Mean (SD) ** **
Empathy	< 6 months (164)	113.81 (11.14)
	≥ 6 months (11)	115.45 (11.38)
Personal burnout	< 6 months (164)	44.16 (18.23)
	≥ 6 months (11)	42.80 (12.37)
Work-related burnout	< 6 months (164)	40.25 (18.17)
	≥ 6 months (11)	35.06 (9.69)
Patient-related burnout	< 6 months (164)	23.42 (16.24)
	≥ 6 months (11)	25.00 (13.18)

* Includes three 'Decline to answer'
** P-values all not significant (>0.05)

Appendix Figure 1: Anecdotal comments.

"Excellent survey but my perception of the causes of burnout among SMOs is almost entirely struggles with bureaucracy, inter-SMO conflict and lack of time for quality care. Most of my colleagues are stimulated and energized by patient care and interaction and their struggles are lack of autonomy to address the issues I have mentioned above. This is worth a survey as the causes of burnout."
"The definition of burnout is subjective – what one doctor calls burnout is different fromwhat another will. We manifest burnout in unique ways."
"Surveys are not a good way of getting a response from us. We get too many and they end up in my deleted box."

Competing interests:
Nil.

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