



# Depersonalised doctors: a cross-sectional study of 564 doctors, 760 consultations and 1876 patient reports in UK general practice

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## ABSTRACT

**Objectives:** The objectives of this study were to assess burnout in a sample of general practitioners (GPs), to determine factors associated with depersonalisation and to investigate its impact on doctors' consultations with patients.

**Design:** Cross-sectional, postal survey of GPs using the Maslach Burnout Inventory (MBI). Patient survey and tape-recording of consultations for a subsample of respondents stratified by their MBI scores, gender and duration of General Medical Council registration.

**Setting:** UK general practice.

**Participants:** GPs within NHS Essex.

### Primary and secondary outcome measures:

Scores on MBI subscales (depersonalisation, emotional exhaustion, personal accomplishment); scores on Doctors' Interpersonal Skills Questionnaire and patient-centredness scores attributed to tape-recorded consultations by independent observers.

**Results:** In the postal survey, 564/789 (71%) GPs completed the MBI. High levels of emotional exhaustion (261/564 doctors, 46%) and depersonalisation (237 doctors, 42%) and low levels of personal accomplishment (190 doctors, 34%) were reported. Depersonalisation scores were related to characteristics of the doctor and the practice. Male doctors reported significantly higher ( $p<0.001$ ) depersonalisation than female doctors. Doctors registered with the General Medical Council under 20 years had significantly higher ( $p=0.005$ ) depersonalisation scores than those registered for longer. Doctors in group practices had significantly higher ( $p=0.001$ ) depersonalisation scores than single-handed practitioners. Thirty-eight doctors agreed to complete the patient survey ( $n=1876$  patients) and audio-record consultations ( $n=760$  consultations). Depersonalised doctors were significantly more likely ( $p=0.03$ ) to consult with patients who reported seeing their 'usual doctor'. There were no significant associations between doctors' depersonalisation and their patient-rated interpersonal skills or observed patient-centredness.

**Conclusions:** This is the largest number of doctors completing the MBI with the highest levels of depersonalisation reported. Despite experiencing substantial depersonalisation, doctors' feelings of

## ARTICLE SUMMARY

### Article focus

- A cross-sectional survey was designed to assess levels of burnout in a census sample of GPs in Essex, UK, and to determine which doctor- or practice-related variables predicted higher levels of burnout.
- In the substudy, patients rated the interpersonal skills of their doctor and independent observers assessed the degree of patient-centredness in a sample of the doctors' audio-taped consultations.

### Key messages

- High levels of burnout were reported in the census survey—46% doctors reported emotional exhaustion, 42% reported depersonalisation and 34% reported low levels of personal accomplishment.
- Doctors' depersonalisation scores could be predicted by a range of variables relating to the individual doctor and their practice, but higher depersonalisation scores were not associated with poorer patient ratings of the doctors' interpersonal skills or a reduction in the patient-centredness of their consultations.
- While the professional practice and patient-centredness of consultations of the GPs in this study were not affected by feelings of burnout, there is a need to offer help and support for doctors who are experiencing this.

burnout were not detected by patients or independent observers. Such levels of burnout are, however, worrying and imply a need for action by doctors themselves, their medical colleagues, professional bodies, healthcare organisations and the Department of Health.

## INTRODUCTION

Medicine is a caring profession, with general practitioners (GPs) forming the largest branch in the UK. With 300 million consultations per year,<sup>1</sup> and the average patient

## ARTICLE SUMMARY

## Strengths and limitations of this study

- A high response rate (71%) was achieved in the census sample of GPs completing the MBI and a subsample of 38 doctors who satisfied the predetermined sample stratification consented to further assessment (patient survey and audio-taping of consultations).
- The study was, however, limited to one county in the UK and thus cannot be extrapolated to other parts of the UK.
- There was a differential response rate by the gender of the participant. Male doctors who were registered with the General Medical Council for >20 years were less likely to respond to the survey than their female counterparts.

having 5.3 general practice consultations a year,<sup>2</sup> GPs have more contact with patients than any other group of doctors. This service is the 'Front Line of the NHS'.<sup>3</sup> GPs deal daily with stressed individuals and their complex medical needs, for example, illness, fear of illness and providing psychological and sociological support for patients and families facing death. Care-giving involves expending psychological energy and, for some doctors, emotional reserves can become depleted. How these responsibilities affect doctors is relatively little known and is an important research topic.

'Burnout' is a word commonly used to mean anything from being tired to having a nervous breakdown. In this study, it is defined as 'a work-related syndrome associated with high scores on the Maslach Burnout Inventory (MBI)'.<sup>4</sup> The MBI is a reliable and validated instrument, which has been used in clinical and educational settings to measure burnout in hospital doctors,<sup>5</sup> medical students,<sup>6,7</sup> general practice registrars<sup>8</sup> and GPs.<sup>9</sup> It has also been used with mental health staff in hospital and community settings, where levels of burnout were found to be higher in community-based jobs.<sup>10</sup> While a number of conceptualisations of burnout exist in the literature (eg, the Demand–Control Karasek model<sup>11</sup>), the MBI conceptualises burnout as an imbalance between 'demands' (ie, perceived work overload) and 'resources' available to the individual (eg, social support, coping skills, autonomy and decision involvement).

The instrument defines three components of burnout: emotional exhaustion, depersonalisation and a reduced sense of personal accomplishment. Emotional exhaustion occurs when workers feel that they can no longer give of themselves psychologically. Depersonalisation occurs when workers have negative and cynical attitudes towards their clients. Personal accomplishment occurs when workers evaluate themselves positively, particularly in relation to their work with their clients.

An early report on GPs in Australia<sup>12</sup> found that up to a third of the doctors reported emotional exhaustion and depersonalisation. Male doctors and younger doctors were found to be particularly affected,

raising the possibility that several years of experience in the job is partially protective against burnout. The MBI has also been used in an important survey of GPs across Europe,<sup>13</sup> including 164 practitioners in the UK. The study found that 43% doctors reported emotional exhaustion, 35% depersonalisation and 32% reduced personal accomplishment. Only one-third of GPs did not score highly on any of the three components.

This research examines the MBI responses of GPs in Essex, UK, and examines for the first time how these responses relate to both personal characteristics of the doctors and characteristics of their practices. It also explores whether the levels of burnout reported on the MBI by a subsample of doctors affected their consultation skills. Particular emphasis is placed on the MBI 'depersonalisation' component, as this is the aspect of burnout most likely to affect patient care since it includes the doctor having 'callous feelings towards recipients'. Since the *Shorter Oxford English Dictionary* defines this as being 'hardened in feeling', 'insensitive' and 'unfeeling', such a response was interpreted to be negative from the patients' perspective.

The research questions were (1) how many GPs working in Essex, UK report high scores for depersonalisation, as measured by the MBI? (2) what doctor and/or practice factors are associated with high scores for depersonalisation? and (3) what impact, if any, does depersonalisation have on doctors' consultations with patients?

## METHODS

A pilot study showed that NHS GPs and their patients were willing to complete the study questionnaires and that tape-recording of consultations (with written consent of patients) was feasible.

## Postal survey of GPs

There were 796 GPs registered on the Essex NHS list, which formed the sampling frame. After excluding those known to have moved out of the area (n=5) and those on long-term sick/maternity leave (n=2), 789 doctors were currently practising in the County of Essex and were eligible to participate in the survey. All were invited to complete the MBI and return this by post to the research team. Responses were scored following the recommended standardised procedure,<sup>4</sup> which categorises each component score into three levels: low, medium or high.

The gender of responding doctors was obtained from the NHS GP database. Their date of registration with the General Medical Council (GMC) was obtained from the publicly available *Medical Register*, from which duration of GMC registration was calculated (in years). GMC registration was dichotomised into approximately equal groups, that is, those registered under 20 years and those registered 20 years and longer.

The MBI manual<sup>4</sup> gives different ranges for different professional groups. So, for GPs, the figures for the medical profession were used.

### Patient survey and audio-taping of consultations

Doctors categorised in the 'low' or 'high' categories based on their MBI responses were selected for further study. To control for the influence of likely confounding factors on burnout scores, stratified sampling was undertaken for both gender and duration of registration with the GMC.

A power calculation indicated that, after stratification for gender and duration of GMC registration, a subsample of 28 doctors was required. To allow for attrition, an additional 12 doctors were approached. A subsample of 40 GPs (20 with high levels and 20 with low levels of burnout) was identified, based on their MBI scores for emotional exhaustion. This is the most widely used subscale of the MBI and one to which doctors themselves relate, as it captures the most important feeling of loss of energy. In line with standard scoring procedure,<sup>4</sup> 'low' emotional exhaustion was defined by a score of 0–18 and 'high' emotional exhaustion as a score of 27–54 on the MBI.

In the main study, we did not have any information about patients' perceptions of their doctors. However, in the second phase, there was a new opportunity to relate doctors' feelings of depersonalisation (the subscale most likely to affect patients), with the patients' and an independent observer's contemporaneous ratings of the doctors' interpersonal skills.

Consent was sought from the selected GPs to visit their practices, to audio-tape a sample of consultations and to distribute survey questionnaires to a sample of their patients. Complete ordinary GP consultations in their practices were recorded, that is, excluding antenatal clinics, home visits and telephone consultations. Consulting sessions were selected by the doctor with all patients being eligible for inclusion in the study.

### Patient survey

Patient views on the consultation were obtained through the Doctors' Interpersonal Skills Questionnaire (DISQ).<sup>14</sup> This measure is widely used for patients consulting in general and hospital practice. Its psychometric properties have been reported.<sup>15</sup>

A researcher approached patients in the waiting room and distributed the DISQ. Patients were excluded from the survey if they were younger than 18 years, not permanently registered (temporary residents), judged to be too ill to participate or attending for new patient health checks. All patients approached were shown this list and excluded themselves if necessary. All DISQ forms were completed by patients after their consultation, on the same days that the audio-recordings were made. The researcher continued to approach patients until 50 completed DISQ forms per doctor were obtained.

Responses on the DISQ were coded and a total interpersonal skills score derived for each patient.<sup>14 15</sup> One

DISQ item asks patients if they are seeing their usual doctor or not on this occasion. From responses to this item, the number of consultations perceived by patients as being with their usual or non-usual doctor was counted.

### Audio-taped consultations

GPs and patients gave consent for their consultations to be audio-taped. Sometimes repeat practice visits were required to obtain 20 usable consultation recordings. The degree of patient-centredness of the consultations was assessed, using the internationally recognised process described in the *Patient Centeredness Manual*.<sup>16 17</sup> This derives a patient-centred score for each consultation with four components: I, II, III1 and III2. Component I refers to a doctor's understanding of the patient's disease and illness. Component II refers to the integrated understanding of the whole person. Component III relates to finding common ground, with part 1 referring to the doctor's expressions and part 2 to the interaction of the patient and doctor expressions. Each component is scored on a scale of 0–100.

To validate the quality of the scoring for patient-centredness, a subsample of consultations were evaluated by two markers and analysed for inter-rater reliability. The reliability test had an overall Cronbach  $\alpha$  of 0.88, which was judged satisfactory.

### Data analysis

Participating doctors were compared to non-participating doctors in terms of their gender and duration of GMC registration ( $\chi^2$  tests). Doctors were categorised as reporting 'high', 'moderate' or 'low' depersonalisation, emotional exhaustion and personal accomplishment based on their responses on the MBI. The relationships between the three subscales were assessed (Pearson's  $r$ ).

Factors associated with depersonalisation were identified by linear regression analyses. Depersonalisation scores were examined in relation to two personal characteristics of the doctor, that is, gender ( $t$  test) and duration of GMC registration (Spearman's  $\rho$ ). Depersonalisation scores were also examined in relation to two practice characteristics, that is, single-handed versus group practice ( $t$  test) and the proportion of patients reporting seeing their usual versus non-usual doctor (Kendall  $\tau$ ). The relationship between doctors' depersonalisation scores and both duration of registration and practice type was investigated (analysis of variance). Individual items in the depersonalisation component of the MBI were analysed to identify which single question had the highest association with the total depersonalisation score (item–total correlation). The relationships between the doctor's self-reported depersonalisation score and their interpersonal skills (DISQ total score) and the observed patient-centredness of their consultations were explored (Kendall  $\tau$ ).

**RESULTS**

Of the 789 GPs approached, 564 (71%) returned a completed MBI. Fourteen doctors actively declined to take part in the survey or returned a blank questionnaire; 211 did not respond. Gender information was available for 521/564 (92%) participating doctors, and the year of GMC registration was available for 526/564 (93%) doctors.

Female doctors (174/204, 85%) were significantly more likely than male doctors (378/527, 72%) to return a completed MBI ( $\chi^2=14.6$ ; df 1;  $p<0.001$ ). Doctors registered for <20 years (273/343, 80%) were more likely to respond to the survey than doctors registered for longer (279/396, 71%) ( $\chi^2=8.2$ ; df 1;  $p=0.005$ ). Female doctors registered for >20 years (73/82, 89%) responded more often than male doctors registered for the same length of time (206/307, 67%) ( $\chi^2=11.2$ ; df 1;  $p<0.001$ ).

**MBI responses**

High levels of burnout were found on all three MBI components (table 1). High scores for emotional exhaustion were found in 261/564 (46%) doctors; high scores for depersonalisation in 237/564 (42%) doctors; and low scores for personal accomplishment in 190/564 (34%) doctors.

As expected, doctors' scores (n=564) on the three MBI subscales were significantly correlated. High levels of depersonalisation were associated with high levels of emotional exhaustion (Pearson  $r=0.57$ ;  $p<0.001$ ) and low levels of personal accomplishment (Pearson  $r=-0.23$ ;  $p<0.001$ ). High levels of emotional exhaustion were associated with low levels of personal accomplishment (Pearson  $r=0.23$ ;  $p<0.001$ ).

Of the six questions comprising the MBI subscale for depersonalisation, the question with the highest correlation (Pearson  $r=0.83$ ) with the total depersonalisation score was question 10, "I've become more callous towards people since I took the job".

**Factors associated with depersonalisation**

The effects of two *personal* characteristics on doctors' depersonalisation scores were explored (table 2): their gender and the duration of their registration with the GMC.

Male doctors (mean score=9.75; SE=0.35; SD 6.75) were significantly more depersonalised than female doctors (mean score=7.82; SE=0.43; SD 5.70). This

gender difference was statistically significant ( $t(550)=3.48$ ;  $p=0.001$ ; mean difference 1.93 (95% CI 0.84 to 3.02)).

Duration of GMC registration was significantly associated with the level of depersonalisation reported by doctors (Pearson  $r=-0.140$ ;  $p=0.001$ ;  $n=552$ ). Those who had been registered for <20 years (mean score=9.85; SE=0.40; SD 6.59) were more depersonalised than doctors registered for 20 years or more (mean score=8.46; SE=0.38; SD 6.34).

The relationship between two *practice* characteristics and doctors' depersonalisation scores was explored: practice size and the proportion of 'usual patients' the doctors' typically see. Doctors in larger practices (mean score=9.35; SE=0.29; SD 6.53) were more depersonalised than doctors in single-handed practices (mean score=6.65; SE=0.72; SD 5.18), and this between-group difference was statistically significant (table 3) ( $t(562)=3.48$ ;  $p=0.001$ ; mean difference 2.69 (95% CI 4.24 to 1.15)).

Further analysis of the combined effect of practice size and the duration of the doctor's registration with the GMC (table 4) revealed that lower scores for depersonalisation were concentrated among doctors who worked single-handedly *and* were registered for 20 years or more (analysis of variance:  $F(1,549)=8.45$ ;  $p=0.004$ ).

DISQ forms were distributed to 1900 patients. A minority of patient respondents (24/1900, 1%) did not complete the item which asked whether they were seeing their usual doctor; thus, 1876 forms could be analysed.

There was a significant association between the doctors' level of depersonalisation and the proportion of 'usual patients' consulting them (table 5) (Kendall  $\tau=-0.29$ ;  $p=0.026$ ). Doctors with higher depersonalisation scores saw a greater proportion of 'usual patients' (562/638, 85% usual patients) than doctors with lower depersonalisation scores (563/746, 75% usual patients).

**Patient survey and audio-taping of consultations**

The stratification system required 28 doctors; 38 doctors were recruited and provided written consent. A total of 760 consultations were audio-taped and suitable for coding (20 per doctor). As described above, assessment of doctors' interpersonal skills by the DISQ was obtained from 1876 patients for 38 doctors (50 patients per doctor). Most respondents (74%) were aged 40 years or older. There was no significant association between doctors' depersonalisation scores and their overall

**Table 1** Levels of burnout reported by 564 general practitioners

MBI subscale	MBI classification		
	Low (score: 0–18)	Moderate (score: 19–26)	High (score: 27–54)
Emotional exhaustion, n (%)	162 (29)	141 (25)	261 (46)
Depersonalisation, n (%)	200 (36)	127 (22)	237 (42)
Personal accomplishment, n (%)	190 (34)	184 (33)	190 (34)

MBI, Maslach Burnout Inventory.

**Table 2** Effect of gender and duration of registration on depersonalisation

Doctors' level of depersonalisation	Mean (SD) depersonalisation scores				
	Gender of doctor		Duration of GMC registration		All doctors
	Male	Female	Under 20 years	20 years or more	
Low	2.7 (1.6) n=125	2.9 (1.7) n=71	2.8 (1.7) n=87	2.8 (1.6) n=109	2.8 (1.6) n=196
Moderate	7.5 (1.2) n=76	7.2 (1.0) n=48	7.5 (1.1) n=55	7.3 (1.1) n=69	7.4 (1.1) n=124
High	15.7 (4.8) n=177	14.8 (4.3) n=55	15.5 (4.6) n=131	15.4 (4.8) n=101	15.5 (4.7) n=232
All groups	9.8 (6.8) n=378	7.8 (5.7) n=174	9.9 (6.6) n=273	8.5 (6.3) n=279	9.1 (6.5) n=552

GMC, General Medical Council.

interpersonal skills as rated by their patients (Kendall  $\tau=-0.01$ ;  $p=0.93$ ;  $n=1900$  patients). DISQ scores were similar for the 'high depersonalisation' doctors (median=87; lower quartile (LQ) 72.5; upper quartile (UQ) 89) and the 'low depersonalisation' doctors (median=83; LQ 79; UQ 89).

For the 760 audio-taped consultations involving the same 38 doctors, no significant association between depersonalisation and patient-centredness of consultations was observed: for all components (Kendall  $\tau=-0.05$ ;  $p=0.66$ ), component I (Kendall  $\tau=-0.01$ ;  $p=0.92$ ), component II (Kendall  $\tau=-0.07$ ;  $p=0.56$ ), component III part 1 (Kendall  $\tau=-0.01$ ;  $p=0.97$ ) and component III part 2 (Kendall  $\tau=0.02$ ;  $p=0.86$ ).

**DISCUSSION**

This is the largest number of GPs ( $n=564$ ) ever to complete the MBI. A high response rate (71%) was achieved in the survey, which compares favourably with the 41% response obtained in a large survey of resident doctors in the Netherlands.<sup>18</sup>

In the second phase of the study, the sample size required by the power calculation was 14 doctors in the high emotional exhaustion group and 14 doctors in the low emotional exhaustion group. In the event, 38 doctors were successfully recruited and the required numbers for each of the stratified subgroups of gender and duration of registration were fulfilled.

Our cross-sectional study found high levels of self-reported burnout in a sample of 564 GPs who completed the MBI. Significant proportions of the responding doctors reported emotional exhaustion (46%), feelings of depersonalisation (42%) and low personal accomplishment (34%). Two doctor-related factors and two practice-related factors were associated with higher levels of depersonalisation. Male doctors, those registered with the GMC for <20 years, those working in group practices and those seeing a higher proportion of 'usual patients' were more likely to report feelings of depersonalisation than their comparators.

The lowest levels of depersonalisation were reported by doctors in single-handed practice, registered with the GMC for 20 years or more. There may be a therapeutic benefit for these doctors from longer relationships with their personal list of patients.

We found that, regardless of their experiences of depersonalisation, doctors were able to maintain a sufficient level of professionalism so that their patients (and the external observers) were unable to detect any effects on their consulting skills. This finding fits with other research,<sup>19</sup> which found that the performance of GPs in terms of their awareness of their patients' psychological problems did not vary with their workload.

Patients' ratings of their doctors' interpersonal skills on the DISQ and the level of patient-centredness independently observed in audio-taped consultations were

**Table 3** Relationship of practice size with depersonalisation scores

Doctor's level of depersonalisation	Mean (SD) depersonalisation score (n = 563)		
	Single-handed	Two or more partners	All doctors
Low	2.3 (1.6) n=25	2.8 (1.6) n=175	2.8 (1.6) n=200
Moderate	7.5 (1.1) n=13	7.4 (1.1) n=114	7.4 (1.1) n=127
High	13.5 (3.4) n=14	15.5 (4.7) n=222	15.4 (4.7) n=236
All groups	6.7 (5.2) n=52	9.4 (6.5) n=511	9.1 (6.5) n=563

**Table 4** Effect of duration of GMC registration and practice size on depersonalisation

	Registered under 20 years	Registered for 20 years or more	Total
Single-handed practice	9.9 n=10	5.9 n=42	6.7 n=52
Practices with two or more partners	9.8 n=263	8.9 n=236	9.4 n=499
Total	9.85 n=273	8.46 n=278	9.1 n=551

GMC, General Medical Council.

not significantly associated with the doctors' self-reported feelings of depersonalisation. So, GPs maintain a professional approach, despite their feelings of burnout.

The survey was limited to one county in the UK; thus, the findings may not be extrapolated across the UK or other countries. In addition, there was a differential response by the gender of the participants: female doctors registered with the GMC for >20 years (89%) were more likely to respond than male doctors registered as long (67%).

There is evidence that burnout in GPs varies between countries. Some of our results replicate those reported in previous studies. For example, researchers in Australia<sup>12</sup> and in Europe<sup>13-18</sup> have reported greater burnout in male than in female doctors, and in those registered for fewer rather than more years. The implication of this work on doctors in different countries and at different stages of their career is that male doctors are more vulnerable than females to depersonalisation. The relative resistance of female doctors to burnout is important. It may occur because women GPs tend to consult more slowly<sup>20</sup> and more often work part time. In this study, information was not available about full-time and part time working.

Previous research<sup>9</sup> has shown that burnout scores are lower in British GPs who work part time. Female GPs are more likely to work part time and stress is 12%–15% more likely for each additional 5 hours per week worked.<sup>21</sup> Another explanation is that female GPs are more patient-centred<sup>20</sup> than male GPs, and this may result in greater professional satisfaction and reduce the likelihood of depersonalisation.

Burnout is emerging as an important work-related problem similar to, but separate from, depression. One important finding by Shanafelt *et al*<sup>22</sup> is that high levels

of depersonalisation (and not high levels of emotional exhaustion) are associated with self-reported suboptimal performance of doctors.

Our study identified two new practice-level characteristics that are associated with burnout in GPs. First, doctors working in group practices reported significantly higher burnout scores than those working in single-handed practices. Working in the community, outside hospital settings, may be intrinsically more stressful since health workers are more exposed there.<sup>10-18</sup> Our finding is, however, disappointing since group practice can, and arguably should, provide support for the members of the group. The finding could be the result of group practice creating extra demands on practitioners, while raising the possibility of interpersonal tensions and conflicts. A second component may be that single-handed doctors have more autonomy and control of their working environment and thus feel less stressed by the working environment, which they can largely control. Regardless of cause, these findings are worrying as group practices are increasing in number and in size.

Our finding that GPs who had high scores for depersonalisation saw significantly more patients who considered them as their usual doctor is also new. These doctors may be less able to cope with new medical problems and manage uncertainty or they may have developed continuous relationships appreciated by patients. This further illuminates the internal working of general practices. The data gathered do not explain this result, but there are several possibilities. First, this finding too may be associated with the working pattern of the doctors. If some doctors are working full-time, with heavy workloads, they may be more liable to become depersonalised, but also be more available and so see more regular patients. This finding suggests that the working pattern in the practice may be more

**Table 5** Classification of consultation type by doctor's depersonalisation

Doctor's level of depersonalisation	Type of consultation (n = 1876 patients)		
	Usual doctor seen, n (%)	Non-usual doctor seen, n (%)	All consultations, n (%)
Low	563 (30)	183 (10)	746 (40)
Moderate	398 (21)	94 (5)	492 (26)
High	562 (30)	76 (4)	638 (34)
All groups	1523 (81)	353 (19)	1876 (100)

important than has previously been understood. A second possibility is that depersonalised doctors perceive new or unknown patients as harder work and so are protecting themselves by seeing relatively more patients whom they know, for example, by arranging proportionately more follow-up consultations. The phenomenon may be a stress response.

Whatever the reasons, a significant group of doctors is in trouble. Other work has shown a relationship between burnout in doctors and errors made.<sup>23</sup> Burnout must therefore always be considered as a health and safety issue and from the patients' perspective. Feeling callous towards patients may be associated with reduced care and compassion provided by depersonalised doctors. This study explored some aspects of clinical performance, such as doctors' interpersonal skills and patient-centredness, but did not examine performance in prescribing or the management of specific diseases. One study of Dutch GPs<sup>24</sup> showed that 'depersonalisation predicted the intensity and frequency of patient demands' 5 years later, after controlling for patient demands at the initial assessment. It suggests that GPs who attempt to gain emotional distance as a way of coping and defending themselves *evoke*, over time, demanding and threatening patient behaviours.

Burnt-out doctors, their behaviour and their patients should be a high priority for future research. Depersonalised doctors are likely to be more pessimistic, and this implication needs further study. Recent research in the social sciences on happiness and pessimism is illuminating with regard to how such feelings affect perceptions. One study concluded that a pessimistic explanatory style was associated with worse outcomes in patients.<sup>25</sup> Being in an optimistic state is also associated with greater productivity while a state of pessimism reduces productivity (Oswald, University of Warwick: personal communication, 2010). Such relationships deserve future research.

The finding that the item referring to 'callous feelings' had the strongest association with the overall depersonalisation score is, as far as we know, new. It underlines how negative feelings towards others are concentrated in the depersonalisation dimension. This feature of the MBI is likely to be of increasing interest in future research on the patient's perspective when receiving care in general practice.

Analyses of burnout, which is defined as a work-related condition, focus attention on the quantity of work which the group studied undertakes. One recent study<sup>26</sup> has reported Norwegian GPs working an average of 45.1 hours per week. In the UK, Hippisley-Cox and Vinogradova<sup>1</sup> reported 300 million GP consultations every year; this equates to about 7000 consultations per GP per year. Future research could consider studying the impact of family life as well.

Burnt-out doctors need help which might be provided in several ways. First, working patterns within general practices can be and are being adjusted. UK general

practice has already lengthened consultations up to a new mean of 11.7 min.<sup>27</sup> This has probably reduced some burnout, in terms of emotional exhaustion and depersonalisation. Second, some group practices have already developed case discussion and other forms of group work, which can provide support for doctors.

One previous study found that family practice residents had higher burnout scores than their tutors.<sup>8</sup> One encouraging implication is that there may be learning or coping effects that come with experience; if so, it may be possible to identify these 'protective' aspects of experience, which can then be taught. Specific education can help to build doctors' coping and stress management strategies and improve their team working and management skills.<sup>28–33</sup> One Norwegian study,<sup>32</sup> with 1-year follow-up, reported a reduction in Maslach scores for doctors to that country's norm after a counselling course.

The burnout levels observed in our study indicate personal distress, so these results deserve attention. First, GPs themselves need to review their work. They are principally responsible for their own arrangements, especially appointment systems and length of consultations, two fundamental features of all general practices. They are largely responsible for their own health. Doctors in group practice may need to think more about stress in their colleagues. The doctors of other doctors may need to consider more whether their colleague could be burnt-out and so not working effectively. National organisations, like the Royal College of GPs and the British Medical Association, may need to review these findings. Finally, all doctors in our survey were working within the NHS, so the NHS locally and nationally needs to review its policies, especially when generating increased pressures for this, the largest group of NHS doctors.

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**Competing interests** None.

**Ethics approval** Ethical approval was given by both the National Multi Centre Ethics Committee (MREC) and South Essex Research Ethics Committee (LREC).

**Contributors** PO conceived the idea for the study, managed the project, drafted the manuscript, commented on later versions and is the data guarantor. CO assisted with the recruitment of doctors, data collection and commented on drafts of the manuscript. DPG supervised the work, commented on and edited drafts of the manuscript. All authors have approved the final version of the manuscript.

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**Data sharing statement** No additional data available.

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## Correction

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**Survey checklist (based on Kelley et al, 2003):**

Item	Description of key point	
1	Explain the purpose or aim of the research, with the explicit identification of the research question	✓
2	Explain why the research is necessary and place the study in context, drawing upon previous work in relevant fields (the literature review).	✓
3	Describe in proportionate detail how the research was done:	✓
(a)	State the chosen research method or methods and justify why this method was chosen.	✓
(b)	Describe the research tool. If an existing tool is used, briefly state its psychometric properties and provide references to the original development work.	✓
(c)	Describe how the sample was selected and how data were collected, including: (i) How potential subjects were identified; (ii) How many and what type of attempts were made to contact subjects; (iii) Who approached potential subjects; (iv) Where potential subjects were approached; (v) How informed consent was obtained; (vi) How many agreed to participate; (vii) How did those who agreed differ from those who did not agree; (viii) What was the response rate?	✓
4	Describe and justify the methods and tests used for data analysis.	✓
5	Present the results of the research. The results section should be clear factual and concise.	✓
6	Interpret and discuss the findings. This 'discussion' should not simply reiterate results; it should provide a critical reflection upon both the results and the processes of data collection. It should assess how well the study met the research question, describe the problems encountered in the research, and honestly judge the limitations of the work.	✓
7	Present conclusions and recommendations.	✓