

What are the significant factors associated with burnout in doctors?

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Background	Burnout syndrome is well established as a condition that affects a significant proportion of practising doctors. Although much literature exists on the prevalence of burnout, only specific variables associated with this condition have been analysed.
Aims	To identify and categorize key factors that are associated with burnout across various medical specialities and geographical locations.
Methods	Three electronic databases were searched for literature on the factors associated with burnout published in the past 5 years. Inclusion and exclusion criteria were applied in three stages. We analysed and critically appraised each paper individually, identifying the common themes.
Results	Forty-seven papers were included from the 395 identified by our primary search. Younger age, female sex, negative marital status, long working hours and low reported job satisfaction were found to be predictive of burnout syndrome across the literature. Participation in ‘wellness programmes’ was related to lower burnout incidence. Causation could not be established however, due to the limited number of longitudinal studies.
Conclusions	More prospective studies are required to assess causation. Despite this, our thematic analysis revealed consistent findings across many papers. This information can be used to inform prevention and interventions to tackle burnout. The associated factors should not be addressed individually, as they are inter-related.
Key words	Burnout; depersonalization; doctors; emotional exhaustion; personal accomplishment.

Introduction

Burnout is a syndrome of emotional exhaustion and cynicism that occurs frequently among healthcare professionals. It can be experienced in three dimensions: emotional exhaustion, that is, decreased emotional energy to meet work-related demands; depersonalization, that is, emotional distance from one’s job role and low personal accomplishment, that is, decreased self-worth related to work [1]. A study by Shanafelt *et al.* [2] revealed that 46% of physicians have at least one symptom of burnout. As there is growing evidence that burnout has a negative impact on the quality of doctors’ performance and on patients’ perceptions of outcomes, addressing it is important both for the well-being of physicians and for the quality of patient care. The first step in tackling the threats burnout poses is to identify its most common causes.

The Maslach Burnout Inventory (MBI), the gold standard measure of burnout, is a 22-item self-reported questionnaire used to measure the symptoms of burnout. It was first developed by Maslach in 1981 and is widely used by the literature analysed in this review.

A great deal of literature on the factors contributing to burnout exists. However, individual studies tend to focus on a single factor, such as job satisfaction, or a group of related factors. Additionally, identifying causes of burnout was commonly secondary to an assessment of prevalence. In 2007, Prins *et al.* [3] published a systematic literature review which focused on the prevalence and risk factors of burnout in medical residents. Taking all these factors into consideration our literature review was designed to identify the causes of burnout from 2008 onwards, and to include doctors of all specialities and grades.

The aim of this literature review was to identify and categorize key factors associated with burnout across various medical specialities and geographical locations to help guide prevention and treatment of the condition in the future.

Methods

A systematic literature review was regarded as the appropriate method to collate and analyse the findings from the published studies of interest, allowing the most prominent factors associated with burnout to be ascertained. Three electronic databases, Medline, Embase and HMIC, were searched. The search string is detailed in [Appendix A](#) (available as Supplementary data at *Occupational Medicine Online*). Papers were eliminated by applying our inclusion and exclusion criteria in three separate stages (see Box 1; [Appendices B](#) and [C](#), available as Supplementary data at *Occupational Medicine Online*). Additional manuscripts were also identified from the reference lists. The papers were critically appraised using the Critical Appraisal Skills Programme (CASP) and themes and sub-themes were identified. CASP is highly regarded as an efficient approach to appraising papers (see Box 2). Where different papers recognized similar causes of burnout, the findings were compared and contrasted. The strengths

of each associated factor were determined depending on the number of papers that were in concordance, along with a consideration of the strengths and weaknesses of each individual paper. Ethical approval was not required for this study, as it is a systematic literature review, not including medical records or personal information.

Results

After applying our inclusion and exclusion criteria, we identified 47 suitable papers (see [Table 1](#)). A full description of the papers found by the search and the number of papers excluded at each stage is illustrated diagrammatically in [Appendix D](#) (available as Supplementary data at *Occupational Medicine Online*). The following is a thematic analysis of our findings. The themes presented are those that appeared the most frequently in the literature.

A significant proportion of the literature concluded that there is a greater prevalence of burnout in females, particularly those specializing in surgery. A study carried out in the USA by Dyrbye *et al.* [4] evaluated the differences in burnout and career satisfaction between male and female surgeons. Questionnaires distributed to a study sample of 7858 surgeons revealed that 43% of females were suffering from burnout, compared to 39% of males. The relatively large sample size coupled with the rigorous statistical analysis, including logistic regression, reinforces the validity of this study, although the low response rate (32%) is a limitation, providing a potential source of bias. These findings were supported by Shanafelt *et al.* [5], who conducted a cross-sectional survey of 7197 surgeons throughout the USA. Both studies made use of the MBI. Such evidence was disputed by Soler *et al.* [6] who in a study conducted across Europe found burnout to be more prevalent amongst males. The authors concluded that male gender and other factors contributed to burnout. The sample size was considerably smaller than the previous two however. Additionally, the questionnaire was translated into many different languages. They did not make use of professional translators, instead relying on the family doctors co-ordinating the study to translate it into their native languages. This raises major doubts as to the accuracy and consistency of the translation. Shanafelt

Box 1: Exclusion and inclusion criteria

Exclusion criteria

Articles were excluded if no abstract was available for preliminary review or if they were not available in English. Articles published before 2008 were excluded. Our paper acts updates Prins *et al.*'s [3] systematic review (analysing studies published before 2008), and examines newly reported causes of burnout syndrome with broader search terms. Articles not exclusively focused on doctors were excluded. A brief literature review indicates that doctors' work roles involve stressors specific to those roles; consequently papers concerning professionals in other healthcare roles (such as nurses) were not considered relevant to the research question.

Inclusion criteria

Articles which focused on the occurrence of burnout in doctors, and examined the causes of burnout were included.

Box 2: CASP

Critical Appraisal Skills Programme (CASP):

Are the results of the review valid?

What are the results?

Will the results help locally?

Table 1. Types of studies included (to go after first sentence in results)

Paper type	Number of papers included
Cross-sectional	40
Prospective	2
Mixed methods	2
Literature review	1
Case study	1
Letter	1
Total	47

et al. [7] carried out a cross-sectional study to evaluate personal and professional characteristics associated with burnout and found that as age increased, the risk of burnout decreased. The large sample size allowed them to reach reliable statistical conclusions, but its external validity was reduced as the sample consisted only of members of the American College of Surgeons. Therefore, it would be difficult to generalize these results to doctors from all specialities [7]. Soler *et al.* [6] confirmed the findings of Shanafelt *et al.* in their Europe-wide cross-sectional study, showing a significant correlation between age (or years since graduation) and burnout.

A cross-sectional survey in 127 NHS hospital trusts by Upton *et al.* [8] aimed to identify predictors of burnout in surgeons, but found no significant relationship between burnout and the age of subjects. However, the respondents of this study were predominantly consultants, with only 4% being under 39 years of age, making this an unrepresentative sample from which to draw conclusions. On the whole the evidence suggests that burnout is more prevalent amongst younger doctors. These findings are consistent with more recent studies such as those of Streu *et al.* [9]. At present it is not known whether it is the characteristics of younger doctors' jobs or more general factors associated with age that predisposes them to burnout syndrome, so further research is required in this area in order to combat effectively any age-related dimension of burnout. However, it does seem clear that with increasing age and experience the risk of burnout decreases.

Al-Dubai and Rampal [10] found a significant association between the prevalence of burnout in doctors and working long hours (over 40 hr per week). The study was only conducted in government hospitals in Yemen. The MBI used was translated, but by a professional Arabic translator. Interestingly, a significant negative predictor of burnout was chewing 'khat', a mild stimulant commonly used recreationally in that region. Stodel and Stewart-Smith's [11] findings supported this hypothesis. They showed long working hours to be the third most widespread cause of burnout, being responsible for 16% of cases. Workload was the most significant cause, being responsible for 26% of cases. This paper's methods differed from the majority in using interviews. Whilst this provides an alternative method of data collection its reliability may be open to question as the authors did not detail the analytical methods used to arrive at their conclusions. Arigoni *et al.* [12] found long working hours to be predictive of burnout in doctors in Switzerland. Their study included three different specialities: general practitioners, paediatricians and cancer physicians, drawing respondents from a broader base than many other studies. Results showed that doctors working over 50 hr per week were at high risk of having two of the three aspects of burnout defined by the MBI and hence were more likely to suffer from the condition.

For job satisfaction, Estryn-Behar *et al.* [13] investigated whether emergency physicians were exposed to stress factors more than doctors in other specialities. Their analysis showed that physicians who had expressed dissatisfaction with their pay were more likely to suffer from burnout. This study achieved a high response rate (66%) from a large sample of 3196. Glasheen *et al.* [14] assessed physicians at 20 academic medical centres in the United States and concluded that burnout was more prevalent in doctors who expressed a low satisfaction with either their amount of personal and family time, or with control over their work schedule. They did not use the MBI but instead asked participants to use their own definition of burnout. It is very unlikely that all physicians have the same understanding of burnout and its features. This, along with other factors such as the physician's mood and the conditions under which the survey was undertaken, could all introduce bias and this methodology is unlikely to be reliable in comparison to tools such as the MBI. The findings of Estryn-Behar *et al.* were corroborated by a cross-sectional study in 2009 by Surgernor *et al.* [15] of hospital consultants in New Zealand. They found consultants who worked long hours and reported low job satisfaction were much more likely to experience high levels of burnout. All literature assessing the correlation between job satisfaction and burnout drew the same conclusion, showing a higher prevalence of burnout in physicians who reported lower job satisfaction.

Home-work interface conflict was a common theme affecting burnout prevalence in the 47 reviewed papers. Dyrbye *et al.* [4] undertook three pieces of cross-sectional research into work-home conflict. The first involved approximately 25 000 surgeons in the USA and found that 62% of women believed they had experienced such a conflict within the last 3 weeks compared with 49% of men. Also it was found that women had a 4% greater frequency of burnout than men. A link was subsequently established, with higher rates of burnout found in women having a recent work-home conflict, and thus this conflict was identified as a predictor of burnout. Although this study had a large sample size and used the MBI the response rate was low (32%). The second study by Dyrbye *et al.* [16] aimed to validate the importance of work-home conflict identified in the previous study as a factor contributing to burnout. It also extended the hypothesis to other specialities outside surgery by looking at 465 internal medicine physicians. Physicians experiencing a work-home conflict in the last 3 weeks were more likely to report symptoms of emotional exhaustion or depersonalization. Estryn-Behar *et al.* [13] conducted a cross-sectional study of 3196 French physicians. This revealed that burnout was prevalent in 42% of the sample population and work-family conflict was associated with burnout (OR = 4.47). The study used the Copenhagen Burnout Inventory, which

is deemed a reliable and valid tool [17]. Dyrbye's papers used the MBI and variations of this instrument. One limitation of all three studies is that they were cross-sectional, precluding confirmation of a causal relationship between the variables. Therefore, although work-home conflict is positively correlated with burnout it is not necessarily a cause of burnout.

Shanafelt *et al.* [5] investigated the health habits of American surgeons and explored the associations with burnout and quality of life. Factors such as exercise and routine medical care practices were associated with a lower risk of burnout. They also found that surgeons reporting high involvement in personal wellness strategies (such as taking vacations and having a positive outlook) were at lower risk of burnout. Whilst it was inferred that doctors who utilize wellbeing programmes and invest more in their personal wellbeing are at a reduced risk of burnout, these results may be a manifestation of selection bias, in that such individuals may have personalities that inherently reduce their risk of suffering from burnout. Lefebvre [18] found that residents experienced a reduction in the consumption of low fat meals, sleep hours and exercise.

Discussion

In examining the literature, we found that the following factors were associated with an increased prevalence of burnout in doctors: female gender, younger age, longer working hours, low job satisfaction and the presence of work-home conflict. There was a shortage of literature examining the role of personality and social background in burnout. One study found that personal wellbeing and participation in wellness programmes were associated with reduced prevalence of burnout. Although the European Working Time Directive has been in force for some time there is a lack of literature examining its effect on burnout prevalence.

Our study is the first of its kind to identify and analyse the factors associated with burnout in doctors of different specialities and grades. A strength of this review is the wide range of studies included from around the world, many with large sample sizes. However problems can arise when applying information in settings outside those from which it originates, since results may not be applicable to other countries, cultures and circumstances. Another limitation was selection bias among the study participants. As most results were obtained from voluntary questionnaires, it is possible that those already suffering from burnout or with an interest in the subject were more likely to complete questionnaires. Conversely, it is also possible that non-respondents did not complete questionnaires as a result of experiencing burnout. Another limitation of this review is selection bias, as only translated non-English papers and those accessible using Imperial College London subscriptions were included.

The themes discussed in this review were those that appeared most frequently and those explored in depth across the literature. It is important to note that these themes may be dependent on each other and are often inter-related. For example, age and working hours may be linked as junior doctors face greater pressure to increase knowledge and skills through practice. Furthermore, their lack of experience may mean they take longer to complete tasks, thereby resulting in increased working hours. At present it is not known whether it is the job characteristics of younger doctors, or more general factors associated with age, which predispose them to burnout. Further research is required to combat effectively the age-related dimension in burnout.

With regards to the role of gender in burnout, many papers found female doctors to be at a higher risk of burnout. However, Soler *et al.* [7] found burnout to be more prevalent amongst males in a study conducted across Europe. Our review also found that women were more likely to experience work-home conflicts and had a higher risk of developing burnout as a result of these conflicts.

The vast majority of the literature consisted of cross-sectional questionnaires. Although useful, allowing very large samples to be studied, they make it difficult to confirm the presence of a cause and effect relationship. An example of this is the association between low job satisfaction and burnout. Whilst the researchers suggest that low job satisfaction was a risk factor for burnout, it is possible that burnout is a risk factor for low job satisfaction, or poor job satisfaction may itself be a symptom of burnout. The same applies to the relationship between burnout and work-home conflict.

In the future prospective studies of physicians over time would allow conclusions about causation to be drawn. Prospective studies would also provide other valuable data, such as the duration of burnout episodes and whether there are seasonal trends in burnout. However, such studies are highly time-consuming and require a significant amount of commitment from participants, who are therefore liable to be lost to follow-up.

The importance of burnout in doctors should not be underestimated and many of the associated factors identified in this review, such as work-home conflicts and working hours, are potentially reversible. This review may act as a prompt to determine effective interventions and treatment; for instance it may be necessary for health service managers to consider doctors' working hours and workload to protect them from burnout. An investigation of the key areas of job satisfaction identified may also help to develop measures to prevent burnout.

In conclusion, this review has highlighted the further work required to tackle the most prevalent factors associated with burnout in doctors. We have further explored previously identified factors associated with burnout in medical residents by including both physicians and

surgeons to provide a broader perspective. We have found that there are a number of occupational and personal factors significantly associated with burnout. We hope our findings can help to highlight evidence-based management practices which need to be implemented in order to tackle the causes of burnout in doctors.

Key points

- This study identified both personal and occupational factors associated with burnout in doctors.
- More prospective studies are needed to confirm whether these associations are causally related.
- Our findings suggest that there are likely to be intervention strategies which could effectively prevent or reduce burnout in doctors.

Conflicts of interest

None declared.

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