Stress in health professionals

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Stress and burnout are inevitable problems for the highly committed, highly involved individuals who work in healthcare services, as they deal with the physical and emotional problems of seriously ill and sometimes emotionally disturbed patients, while also having to cope with running effective teams, dealing with complex management structures and conflicting demands at all hours of the day and night. Anyone working in such conditions will inevitably become stressed if enough such pressures are placed upon them. Having said that, not everyone in practice does become stressed, and that raises a host of questions about who becomes stressed, why people become stressed, what are the precipitating and protective factors and what are the causal processes underlying the separate but related conditions of stress and burnout. A brief review such as this can inevitably only present a personal view of a large research area. Several recent edited volumes are recommended as good starting places for studying the field further (Dollard *et al.*, 2003; Cooper, 2005).

Defining and measuring stress and burnout

Stress

As p. 1 of Cox (1978) pointed out long ago, 'the concept of stress is elusive... It is a concept which familiar to both layman and professional alike; it is understood by all when used in a general context but by very few when a more precise account is required...'. Stress suffers from the conceptual confusion of both referring to the external event and to the internal response (just as in engineering,

a stress is a force upon an object such as an aircraft wing, and the damage that results from that force, as in metal fatigue). It also suffers from the problems that beset technical terms within psychology which are also used in everyday language, so that hardly a person nowadays describes their work as anything other than 'stressful', or describes themselves as anything other than 'stressed out'. Amongst the various definitions of stress and stress responses, perhaps a common denominator is a failure of normal, effective functioning, which can manifest in disordered, ineffective behaviour, of which perhaps the symptoms of anxiety-related and depressive disorders are the first and commonest signs (see 'Stress and health').

For research purposes, many empirical studies have resorted to defining stress in terms of conventional measuring instruments, typically questionnaires, of which the General Health Questionnaire (GHQ) has become the most popular, not least because of its conceptual and research links to the diagnosis of anxiety and depressive disorder. The GHQ was originally introduced by Goldberg (1972), as an instrument to be used in general medical practice for detecting undiagnosed psychiatric disorders in general medical and surgical patients. The original 140-item scale was also presented as a more popular 60-item scale (GHQ-60) which had several sub-scales. Subsequently, shorter versions of the instrument have been used, including the 28-item scale (GHQ-28), and the very popular 12-item questionnaire (GHQ-12), which conventionally is regarded as having only a single scale, but probably assesses two correlated factors, i.e. anxiety/depression and social dysfunction (Kalliath *et al.*, 2004). An important feature of the original GHQ was that a scoring method was devised which was validated against independent, psychiatric assessments of the individuals using standardized clinical interviews. A score of four or more on the GHQ-12 has been shown, in its proper context, to have about an 80% sensitivity and 80% specificity for detecting psychiatric illness, with good comparability even when used cross-culturally in a range of countries, and after translation into ten different languages (Goldberg *et al.*, 1997), and a positive predictive value of about 65% (Schmitz *et al.*, 1999).

Because of its success as a screening instrument for detecting psychiatric illness ('caseness'), the GHQ began to be seen as a useful instrument for assessing psychiatric morbidity which could then be used as a proxy for stress and stress-related illnesses. There are many such studies in the literature, and a recent review summarized the result in these terms: "Although stress is common in most professions, the figures for doctors suggest that 28–30% of them suffer above the threshold level of stress as measured by the General Health Questionnaire" (Maxwell & Squire, 2000). Such studies typically do not include a population control, but where such data are available, as in the Health and Lifestyle Survey in the UK, the rate of caseness was about 14% (McManus *et al.*, 1999), seeming to support the idea that doctors and health professionals may indeed be particularly stressed.

An important problem in using the GHQ for assessing stress is that it is typically not used in the context for which it was originally devised. The rubric for the GHQ very carefully does not make any mention of stress (and indeed the term is not even found in the index to Goldberg's 1972 monograph). Instead it asks, 'how your health has been in general, over the past few weeks'. However many of the studies, which have used versions of the GHQ for estimating stress rates in health professionals, present the questionnaire in an explicit context of stress, often with a covering letter with a title such as, 'Stress in doctors'. Such phraseology potentially primes respondents to answer in particular ways if they feel that they are indeed 'stressed' in the everyday sense of the term, but the risk is that the validity of the instrument is threatened. Almost no studies using the GHQ to assess stress in health professionals have cross-validated GHQ-detected cases against formal psychiatric diagnosis; it is just assumed implicitly that the measure is as valid as in its original context. An important exception used the GHQ-12 to identify cases in a population of healthcare professionals and hospital staff in a hospital setting in the north of England. The proportion of cases was 27% (Weinberg & Creed, 1999). However formal psychiatric assessment found that only 52% met the criteria for a psychiatric diagnosis (Weinberg & Creed, 1999). It seems likely, therefore, that a proportion of GHQ-based studies of the absolute rate of stress in health professionals over-estimate rates of stress, a risk that will of course be exacerbated if there is response bias, with the most stressed seeing an opportunity to express their discontent. Great care should therefore be taken in interpreting such surveys, particularly when they form the basis for headlines used by medical politicians. A study in which GHQ-assessed stress rates in doctors could be assessed properly was a stratified, representatively sampled study of attitudes of 1013 UK doctors to the General Medical Council's Performance Procedures, in which we included the GHQ-12 amongst a range of questions unrelated to stress, and with its proper rubric which does not mention stress. The overall rate of caseness was 16.9%, which was similar to rates of 14.1% and 17.8% in large-scale population studies (McManus *et al.*, 1999). Interestingly there was evidence of a relationship of stress to age, doctors in mid-career showing the highest rates of stress.

In summary, the measurement of stress is not straightforward, and absolute rates should be treated with care when assessed by instruments such as the GHQ. Whether doctors and other health professionals are more stressed than the public as a whole is at best controversial. What is clear however, is that *some* doctors are more stressed than others, and it seems likely that those with high stress, as assessed by the GHQ, are neither happy nor effective doctors, often wanting to leave medicine for other careers.

Burnout

The concept of 'burnout' is less conceptually confused than that of stress, not least because of a clear articulation of the different components, and their ready measurement in a single, well-accepted measuring instrument, the Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1986). Maslach has defined burnout as, "a psychological syndrome in response to chronic interpersonal stressors on the job" (Maslach *et al.*, 2001). The three separate components, measured by the MBI are:

- Emotional Exhaustion (EE; a sense of being emotionally overextended and exhausted by one's work)
- Depersonalization (DP: an unfeeling, impersonal response towards patients; cynicism)
- Personal Accomplishment (PA: a feeling of achievement and competence in working with patients; efficacy)

These are differentiated by EE and DP being positively correlated with each other and with burnout overall, whereas PA is negatively correlated with burnout overall and with EE and DP. In more recent work Maslach has extended the conceptualization and in particular has emphasized 'engagement', the positive antithesis of burnout, which is the starting point from which 'What started out as important, meaningful and challenging work becomes unpleasant, unfulfilling and meaningless. Energy turns into exhaustion, involvement turns into cynicism, and efficacy turns into ineffectiveness' (Maslach *et al.*, 2001) (see 'Burnout in health professionals').

An important and often misunderstood feature of the MBI is that there is no absolute scoring, and unlike the GHQ there is no validation against formal psychiatric assessment. The manual (Maslach & Jackson, 1986) does describe high, medium and low scores, but these in effect are simple tertiles, dividing the original normative groups into top, middle and bottom thirds. The claim, as is sometimes seen, that in a survey, 'a third of the subjects showed high levels of burnout', is not saying that there are high levels of burnout but that there are normal levels of burnout.

An important conceptual aspect of the definition of burnout is the clear distinction between burnout and depression. Although the two conditions can co-occur, Maslach emphasizes that while burnout is job-related and situation-specific, depression in contrast is a condition which pervades every aspects of a person's life. Of course depression may cause burnout and burnout may cause depression, but their clear aetiological and diagnostic distinction must be maintained.

A similar conceptual distinction can also be made between stress and burnout, perhaps most clearly seen in the work of Pine, whose existential model clearly differentiates burnout from stress and strain (Pines & Keinan, 2005). In the existential perspective, people need their lives to be meaningful, and a sense of meaning is in part achieved by having jobs which are useful, important and of perceived significance. Burnout is the absence of such a sense of meaningfulness, and correlates principally with a lack of perceived job significance, whereas strain correlates particularly with work stressors such as workload. Pine also emphasises that the lack of significance is specific and situational, rather than generalized, so that individuals can, for instance, be burned out in one part of their life, such as at work but not in another part, such as their marriage.

The causal relationship between stress and burnout

Many studies measure levels of stress and burnout in health professionals, and the consistent finding is that doctors with higher stress levels also report more emotional exhaustion, more depersonalization and less personal accomplishment. The correlations are undisputed: much more problematic is the causal relationships between the measures, and these are much less studied. Particularly problematic is that the inference of causation from cross-sectional data is not straightforward, where stress is correlated with lowered personal accomplishment and increased depersonalization (Graham *et al.*, 2002). Proper longitudinal studies are rare, but in one study path modelling was used to interpret the relationships between stress and burnout measures in doctors assessed after a three-year interval (McManus *et al.*, 2002*a*). Figure 1 shows that the engine which drives the relation between stress and burnout is the causal cycle from stress to emotional exhaustion and from emotional exhaustion to stress. However the other effects are less intuitive. Longitudinally, personal accomplishment acts not to protect against stress but to increase it, whereas depersonalization acts to reduce subsequent stress. A metaphor may perhaps help in understanding the relationships; the oxygen of high personal accomplishment may initially help to ignite the fire of engagement, but just as a fire runs out of fuel, so burnout results when mental resources are consumed. To burnout one has firstly to have burned brightly and high personal accomplishment both makes the fire burn and also burn out (McManus, 2002).

Stress, personality and working conditions

A frequent assumption in the stress literature is that working conditions, and in particular in the case of doctors, a heavy workload and long working hours, including work at night and sleeplessness, are the major cause of stress (see 'Healthcare work environments' and 'Shiftwork and health'). Certainly it is the case that if one interviews doctors who are highly stressed then they will attribute their stress to working conditions. The problem, however, is that non-stressed doctors also describe similar working conditions. Systematic surveys of working conditions find a very poor, almost non-existent correlation, between working hours, patient load and

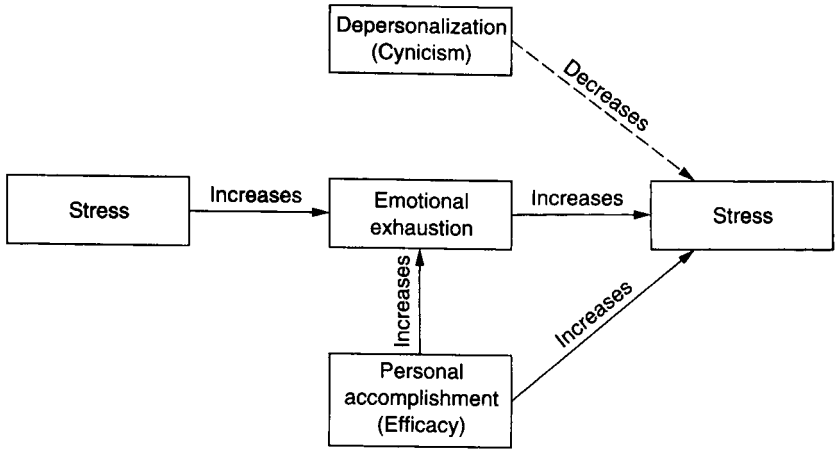

Fig 1 Causal relations between stress and burnout (for further details see text and McManus *et al.* (2002a)).

other variables describing working conditions, with stress levels (McManus *et al.*, 2002*b*; Bovier & Perneger, 2003) or with burnout (Pines, 2000). Two possibilities are therefore raised: one, is that, it is not workload per se which is stressful (and after all, many people find activation, exhilaration and excitement from working hard at a job they enjoy doing), but the imbalance between effort and reward (Tsutsumi & Kawakami, 2004): hard work for little reward, financial, psychological, social or professional, is stressful and results in burnout. The other possibility is that stress is as much a characteristic of the doctor or health professional as it is of the work environment.

Most studies are incapable methodologically of separating effects of the individual from effects of the environment, since they assess a single health professional in a single job, the person and the situation being completely confounded. A study which shows the separation of the two looked at a large group of British doctors in their pre-registration house officer (PRHO) posts, the first year after qualification (McManus *et al.*, 2002*b*). The study was large enough to mean that many doctors had worked in the same post (i.e. for the same consultant firm, in the same hospital, which was a part of the same trust, which was supervized by the same postgraduate deanery). Such data can be analyzed by multi-level modelling, which allocates variance to different levels of the hierarchy. The analysis showed that many measures, such as reported working hours, number of patients, perceived quality of the job, etc. did indeed involve variance at the level of the consultant firm, or the hospital or trust. However, the most striking result was that stress and burnout *only* showed variance at the level of the individual doctor. In other words, two doctors working in precisely the same post showed no greater similarity of their stress levels than did two doctors working for different consultants, in different hospitals under different trusts and academic deaneries (McManus *et al.*, 2002b). The strong implication is that stress is, to a large extent, an individual response of the health professional, rather than being directly driven by working conditions.

The clinical literature has long reported that the personality dimension of neuroticism is related to anxiety disorders (Matthews *et al.*, 2003; Tyssen & Vaglum, 2002) and an obvious personality correlate for stress and burnout in health professionals is neuroticism (see 'Personality and health'). Although personality is rarely measured in studies of stress, when it is there are clear correlations of neuroticism with stress levels (Deary *et al.*, 1996*a*, *b*; Tyssen *et al.*, 2002). Larger scale studies have found that other personality variables are also important in predicting stress, doctors with higher stress levels not only being more neurotic, but also being more introvert, and having lower levels of conscientiousness and agreeableness (McManus *et al.*, 2003, 2004). Intriguingly these are precisely the same personality variables which in meta-analyses predict low levels of job satisfaction, life satisfaction and marital satisfaction (Heller *et al.*, 2004). Particularly important is that in longitudinal studies, neuroticism measured at one time, when doctors are in a particular job, is predictive of stress and burnout levels five years later, when doctors are in an entirely different work environment (McManus *et al.*, 2004). The effects of stress on the working environment are manifold, particularly when interacting with personality and study habits and learning styles, causing a surface-disorganized approach (Kirby *et al.*, 2003) and a high sense of workload, but also a less supportive–receptive working environment, and less independence of choice in work (McManus *et al.*, 2004) (see Fig. 2).

The management of stress and burnout

Whatsoever the disputes about the causes of stress in health professionals, there is little doubt that many health professionals are stressed and burned out and interventions to reduce that stress would be beneficial to the professionals themselves and probably also to their patients and their colleagues. Several broad sets of intervention can be distinguished.

Stress-reduction techniques

Stress-reduction techniques for the workplace have been classified into six broad groups: relaxation; physical fitness; cognitive

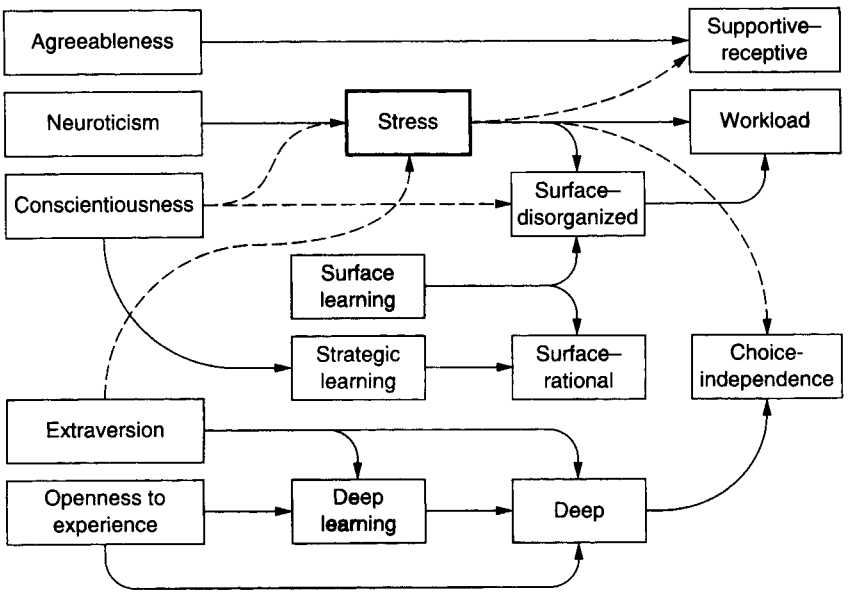

Fig 2 Summary of causal influences of personality and study habits (left-hand side) upon stress and of stress upon working styles and work environment (right-hand side). Solid lines indicate positive relationship, and dashed lines indicate negative relationships. For technical details see McManus *et al.* (2004).

restructuring; mediation; assertiveness training; and stress inoculation (Bellarosa & Chen, 1997) (see 'Cognitive behaviour therapy', 'Relaxation training' and 'Stress management'). Experts in such techniques were most familiar with relaxation, rated it as the most practical and cheapest of the methods and along with physical activity, the most effective of the methods although its effects were seen to be short-lived, with cognitive restructuring having the most long-lasting effects. Properly conducted empirical trials of the effectiveness of stress-reduction techniques are rare, one review of such interventions for mental health professionals finding only three well-evaluated studies, which found that stress reduced after attendance at workshops linked to sustained consultation, after participation in an intensive programme and after interdisciplinary education (Edwards *et al.*, 2002). A meta-analysis of stress-reduction methods, found that the most effective techniques are cognitive–behavioural (Cohen's $d = 0.68$; 95% confidence interval CI = 0.54 to 0.82), with relaxation techniques less effective ($d = 0.35$; 95% CI = 0.22 to 0.48), and organizational interventions without any significant effect ($d = 0.08$; 95% CI = −0.03 to 0.19) (van der Klink *et al.*, 2001); the overall effects were described as 'small but significant' (van der Klink *et al.*, 2001). Large-scale randomized trials are unusual, not least because they are expensive, but an important exception is a study in which healthcare professionals in oncology received 105 hours of training on attitudes and communication skills, with significant reductions in stress being found three and six months later (Delvaux *et al.*, 2004).

Lifestyle

Healthcare professionals are not only healthcare professionals, but also have lives outside of hospitals and other workplace institutions. In some cases it is events in those outside lives which have an impact on stress and burnout. In one study, many cases of stress identified by the GHQ-12 had problems outside work, including substantial health difficulties in close relatives, a past psychiatric history, marital difficulty and the lack of a confidant. These were more predictive of stress than were work problems (Weinberg *et al.*, 1999). Family life can be a source of stress to doctors, particularly female doctors and those with children, with the problems of combining work and family being a common problem, which can result in continual compromises (Töyry *et al.*, 2004). Although having children was a source of stress for doctors, interestingly doctors with children reported lower levels of depersonalization and higher levels of personal accomplishment than those without children (Töyry *et al.*, 2004). GHQ scores were systematically lower in doctors who responded to stress at work by maintaining a balanced, healthy life-style (Graham *et al.*, 2005).

Selection for hardiness

A recurrent suggestion, particularly from selectors for medical school, is that since neuroticism and other personality factors predict stress and burnout, then a sensible strategy is to select the hardiest of students, who will be the stable, conscientious extraverts. Although superficially attractive, such an approach has several problems. Firstly, it assumes that the selection ratio is sufficiently high to allow selection on multiple factors, but with only about two applicants for every medical school place, that is unlikely to be the case (McManus & Vincent, 1993). Secondly, the approach assumes that neuroticism, introversion and low conscientiousness have only negative correlates. However, that is unlikely to be the case. In the dangerous world in which early humans evolved, with the ever-likely possibility of predation and indeed in the dangerous modern technological world which modern humans have subsequently created, the risk of death or injury is always present. To have no anxiety about such possibilities is to run the risk of being eaten or run over. However, to be excessively anxious is also to run the risk of being paralyzed into inactivity. Moderate levels of neuroticism are therefore beneficial (and it is always worth remembering that, by definition, we are all the descendants of individuals who were sufficiently anxious as to make sure that they were not eaten by sabre-toothed tigers before they had reproduced). It is likely also that moderate, or even high, levels of neuroticism have their benefits in medicine: we want doctors and nurses who do sometimes go home and worry that they may have made a diagnosis wrongly, may have carried out an operation less well than they might have, or did not communicate properly with a patient or their relative. If we need such reflective individuals who worry about their jobs (and it seems likely we do) then we also need counselling and other career support systems which help them to continue coping at doing the thing at which they are good, and for which they have been so expensively trained, which is practising as health professionals.

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