

Myers and medicine

CHARLES MYERS (1873–1946) had a formidable range of talents. After a double first in natural sciences at Cambridge, and then graduating as a doctor at Bart's, he went on an expedition to the Torres Straits where he was one of the first practitioners of ethnomusicology (Clayton, 2000). He wrote one of the first textbooks of experimental psychology, helped found the British Journal of Psychology and the

there are only sciences and the application of sciences]' (Costall, 1998).

In 1933 Myers gave the distinguished Bradshaw Lecture at the Royal College of Physicians in London with the title 'A psychological regard of medical education', and I have taken this as my inspiration. Much of my own professional life has been spent using the techniques of psychology to study medicine, and in particular to study medical students and medical practitioners themselves. The work has covered many areas, from student selection, undergraduate training, career choice, and postgraduate assessment, to the effect of the stress and anxiety experienced by junior doctors on duty in the night on operative performance. I hope to give you an overview here.

A neglected practice

If this article has a single, clear message I hope it is the realisation that medical practice has been neglected by psychologists. By that I am not referring to any lack of work or interest in clinical psychology or health psychology, for both disciplines have made superb progress in the past three decades, to the great benefit of patients. Instead I mean a neglect of the study of medical practitioners themselves. The doctor-patient relationship is at the core of much medicine, but while patients are studied in depth there is little study of the other half of the equation. And yet doctors and medical students are potentially a wonderful group for eliciting and answering a wide and rich range of

issues for psychology: not only clinical questions, but also educational, social and cognitive issues.

Each year in the UK about 6000 medical students enter universities.

They have remarkably similar entry qualifications, they have a remarkably homogeneous course (overseen by the

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their careers is enormous. Like any cohort study, the dataset is complex, with not all individuals completing all assessments at all occasions. But the potential for answering difficult, important and interesting psychological questions is unparalleled, not least because it is only longitudinal data that ultimately can provide answers to questions about causality.

Consider the issue of stress and burnout. In our study we measured stress levels using the GHQ-12, and burnout with an abbreviated version of the Maslach Burnout Inventory, at the end of the pre-registration house-officer (PRHO) year. All doctors know that PRHO posts are a gruelling, hard year (and one of my first medical education studies – McManus et al. (1977) – looked at it using a mixture of quantitative and qualitative techniques), yet it was clear that there was a wide range of responses. Some doctors were indeed very stressed, very emotionally exhausted, very depersonalised, and had little sense of personal accomplishment; but many were not. Why?

If asked, most doctors will say that it is the workload of the PRHO posts that is stressful. And yet in our study we had asked about working hours, the number of patients admitted, the hours of sleep obtained when on call, and so on. None of those measures of workload correlated with stress levels. That result was so surprising that a major medical journal rejected our study on the basis of, as an editor asked, 'How can it not be the case that stress is related to working conditions?'

The fact that stress was not related to working conditions in our data was confirmed using multilevel modelling, for data such as these are inherently multilevel. PRHOs work for a particular team of consultants; the consultants are grouped together in hospitals; the hospitals are grouped together into trusts; and the trusts are overseen by postgraduate deaneries. Because of the large number of doctors in our study, many had done the same PRHO posts, and we could therefore partition the variance in levels of stress between doctors, consultant firms, hospitals, trusts and deaneries. The result was very clear:

PAULA SOLLOWAY (PHOTOGRAPH)

Is stress primarily a characteristic of doctors rather than of jobs?

there was simply no variance in reported stress or burnout due to consultant firms, hospitals, trusts or deaneries. That was not because of a lack of statistical power (and indeed we readily found effects of consultant firms and hospitals for many other aspects of the posts), but those levels of variance simply did not affect stress or burnout. To put it at its simplest, two doctors doing exactly the same PRHO post were no more similar in their stress levels than two doctors working for different consultants, in different hospitals, in different trusts and under different deaneries. The variation in stress is mainly a function of differences between doctors and not in differences in working conditions (McManus, Winder & Paice, 2002).

Stress has long been known to be related to personality, and in particular to the personality dimension of Neuroticism. We soon found that the same was true of our PRHOs. An abbreviated Big Five personality measure showed that those with the highest stress and burnout measures had higher neuroticism scores, were more introverted, were less conscientious and were less agreeable. Exactly the same correlations were found when we looked at the stress levels of the same group of doctors, five or six years later in 2002/3 (and we had also found it in an entirely different set of more mature doctors – McManus et al., 2003). Of particular interest was a high correlation between stress levels as PRHOs and the stress levels in 2002/3, when the doctors

were in entirely different jobs. Unless one wishes to believe that stressed doctors keep choosing unsatisfactory jobs, then the most reasonable interpretation is that stress is primarily a characteristic of doctors rather than of jobs.

What comes after stress? Stress and burnout are not merely outcome measures in longitudinal studies such as these. They are input measures too – being stressed or burned out today will affect how an individual does things tomorrow.

Although the terms stress and burnout are mostly used interchangeably (and there is little doubt that they are highly correlated statistically), they are separable conceptually, with the main thrust of burnout being that it relates specifically to the job itself. Stress is a more generic condition in which individuals have a higher risk of depressive or anxiety disorders, conditions which influence the whole of mental life. The causal relation between stress and burnout is not easy to tease apart in cross-sectional studies, but longitudinal studies allow causality to be inferred. Path analysis of longitudinal data from our study suggests that the main engine driving stress is emotional exhaustion; emotional exhaustion makes doctors stressed and stress makes doctors emotionally exhausted. More controversial are the effects of depersonalisation. Depersonalisation, the treating of patients as objects rather than people, seems to decrease subsequent stress. Depersonalisation, while bad for the

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McManus et al. (2004) < article: < 1 / 1 / 1 - 01 / 2 / 2

patient, can nevertheless be seen as a response that for the doctor is adaptive, reducing the immediate likelihood of stress responses. Likewise, a sense of personal accomplishment, while correlated with lower stress in cross-sectional studies, in longitudinal data is correlated with higher stress. A sense of achievement is good for a doctor but it is potentially bought at the price of greater risk of emotional exhaustion and stress (McManus, Winder & Gordon, 2002).

Although stressed doctors are unhappy (and also, as we will see later, regret having become doctors, get little personal pleasure from being doctors, and frequently think of leaving medicine for another career), they also continue to work as doctors. We need to know how their approach to work, to learning through work, and to working with colleagues is affected by stress and by other variables. The full complexity of the longitudinal data is presented elsewhere (McManus et al., 2004 – see weblinks), but here I want to describe the relationship between stress, the Big Five personality measures mentioned earlier, and the learning and working styles of doctors.