Reviewer's report

Title: Stress, burnout and doctors’ attitudes to work are determined by personality and learning style: A twelve year longitudinal study of UK medical graduates

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Reviewer: Eamonn E Ferguson

Reviewer's report:

General

The reported study and analyses offer an important contribution to the field both theoretically and in terms of practice.

The link between the way that people study and the way that they choose to work is theoretically important and not been shown before. Theoretically it shows us that there is continuity in style and that this is virtually independent of personality. However, personality appears to be related to stress and learning and work style are not. This dissociation is important as it shows that intervention designed to deal with stress should focus on personality.

This is an interesting paper that explores a complex problem and identifies a number of important novel relationships. The results are theoretically interesting and have wide implications for medicine in terms of selection, education, training and doctors’ health and wellbeing. With attention to the above points I believe that the paper is worthy of publication.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

The following 2 points are general issues that the authors need to address to strengthen the conceptual and theoretical background to the paper.

1. There is existing evidence that personality and learning styles are linked and that both are linked to academic performance. Given, this it would be useful if the authors in the introduction could state some a-priori expectations about the relationships between personality, learn styles and personality and stress appraisals (especially as there is an existing literature on personality, coping and stress).

2. In the discussion it would be useful if the authors could offer some speculations on the role of personality, learning style and approaches to work in light of associations with academic performance. For example, there is evidence that conscientiousness [C] is one of the main personality predictors of academic performance in medical school, whereas neuroticism [N] is generally unrelated to performance. There appears to be a differential pattern (dissociation) in associations for these personality traits with respect to learning styles.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

3. The study is well conducted and analysed with the additional materials providing all the necessary
information for those with an interest in these types of analytic techniques. However, while the authors make inferences about causality in relation to work-characteristics and stress based on the longitudinal nature of these data, they are not fully cross-lagged. That is, approaches to work and stress were both not measures at the PRHO stage and again in the later wave. The cross-lagged effects would allow for a stronger causal inferences to be made. However, having said this, the pattern of effects does suggest that personality drives the process. This is something that the authors should acknowledge in their discussion. Again reference to other longitudinal and diary based work on personality and stress could be used to strengthen these claims. Furthermore, the results do indicate that learning styles and work styles are causally related.

4. A flow chart detailing the time line of the study in including Ns and measures at each point would be usefully included in the main text.

Discretionary Revisions (which the author can choose to ignore)

5. It would be useful if the authors could speculate more on the implications that these results have for selection and recruitment into medicine and the way in which they might inform curriculum design – especially as there is evidence that learning styles influence performance but that certain styles may be better suited to particular learning environments. Again what are the implications for graduate entry problem based learning courses.

Which journal?: Appropriate or potentially appropriate for BMC Medicine: an article of importance in its field

What next?: Accept for publication in BMC Medicine after minor essential revisions

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I am currently conducting some exploratory collaborative research with the first author.