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Jacob D. King, Research Associate, Centre for Urban Design and Mental Health, UK. Email: jacob.king@doctors.org.uk

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Prevalence of maternal psychiatric disorder in pregnancy: 1986 and 2016

We note that, in a study by Howard *et al*, the population prevalence rate for a psychiatric diagnosis for women at their first antenatal appointment is 27%, a disturbing one in four women.[1] In 1986 we used a similar two-stage methodology, the Leeds Anxiety and Depression Scales[2] and the Clinical Interview Schedule,[3] with women booking in at two general practice antenatal clinics in the same inner-city location.[4] The point prevalence for a psychiatric disorder (ICD-9)[5] at 20 weeks was 25% and at 36 weeks was 23.5%. The period prevalence was 38%. One in three women had a psychiatric disorder during pregnancy.

The pregnant women recruited into Howard *et al*'s study have a mean age of 32 years and could well be the offspring of the mothers whom we interviewed in 1986. Why are the point prevalence rates of psychiatric disorder exactly the same as they were 30 years ago? It is likely that one in three pregnant women still have a psychiatric disorder.

We have had two sets of National Institute for Health and Care Excellence guidelines (2007, 2014) for managing perinatal mental health,[6,7] but Howard *et al*'s evidence shows that we have not reduced the number of people with these disorders. We seem to be good at identifying mental ill health but what are we doing to prevent the next generation from experiencing these conditions?

My colleagues and I have interviewed the South London Child Development Study cohort of women and children at eight time points through pregnancy in 1986 and the following 26 years to 2012. We have shown that women's mental health in pregnancy is a risk factor for psychiatric disorder in the offspring through childhood, adolescence and into young adulthood.[8] The evidence from Howard *et al*'s paper shows that we have not yet been able to stem the intergenerational transmission of psychiatric disorder. Screening without follow-up intervention does not help prevent later mental ill health or transmission to the next generation. Is it not time that we could and should intervene?

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Susan Pawlby, Developmental Psychologist, Division of Psychological Medicine, King's College London, UK; **Deborah Sharp**, Professor of Primary Health Care, Centre for Academic Primary Care, University of Bristol, UK; **Dale F. Hay**, Professor of Psychology, School of Psychology, Cardiff University, UK. Email: susan.pawlby@kcl.ac.uk

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Whooley questions miss ~80% of 'cases': are they therefore really 'useful'?

One of Howard *et al*'s[1] conclusions in their paper is that their data confirm that the Whooley questions[2] 'are a useful tool for case identification in early pregnancy' (by midwives in routine clinical settings). This conclusion was principally based upon the obtained positive likelihood ratio in their study (5.8 for depression, anxiety and other related disorders) and high specificity (0.96), providing therefore a reasonable positive predictive value (0.66). Also, however, the authors explain that the Whooley questions had a low sensitivity of just 0.23. This means that they actually missed almost 80% of the women with these mental health disorders.

We feel that it is difficult to imagine a clinical service agreeing that an instrument that misses almost 80% of people with a condition could be considered 'useful', and is 'a quick method for identifying that a mental disorder may be present', despite the other receiver operating characteristic values reported for the questions.

We accept that the issue of what values, or combination of values, of a test's various screening metrics (for example positive likelihood ratio, sensitivity, specificity, positive predictive value) are indicative of a 'good or clinically useful performance' can be difficult to decide, is open to debate and will vary depending upon context. And we appreciate that Howard *et al* are clear in their reporting of their data, including the low sensitivity values and possible reasons for these, which they say include that the questions may not have been asked in a consistent and/or correct way by the midwives.

We would, however, question their main conclusions, these being that the obtained data 'confirm … that (the Whooley questions) are a useful tool for case identification' (p. 54) and that '(the two-item Whooley questions) can (therefore) be asked routinely by midwives when women attend for their routine antenatal booking appointment' (p. 55). Rather, we would suggest that a different conclusion may be more appropriate, given their findings, this being along the lines of: screening positive on the Whooley questions, while being indicative of a reasonable likelihood of a woman having a mental health difficulty, needs to be tempered by the fact that most of the women with such disorders were not in

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fact detected by the questions in this study. These data therefore indicate that services would be unwise to implement these questions, in the way conducted in this study, if they consider that missing around 80% of women with a mental health difficulty is problematic.

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Stephen Matthey, Research and Clinical Psychologist, University of Sydney and Sydney South West Local Health Service, Australia; **Anna Della Vedova**, Research and General Psychologist, Psychotherapist, Università degli Studi di Brescia, Italy. Email: stephen.matthey@sydney.edu.au

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Author's reply

Thank you for your interest in our study.[1] Matthey & Della Vedova have focused on the effectiveness of the Whooley questions in identifying any mental disorder, and we agree, this is an important focus for case identification tools as mental disorders in pregnant women are common. We are not aware of any comparable studies examining the effectiveness of tools to identify 'any disorder'; most focus either only on identification of depression or anxiety disorders. We agree that the sensitivity of the Whooley questions is low for 'any disorder'; there is always a trade-off between sensitivity and specificity and the challenge of designing a short but sensitive screening instrument, particularly for 'any disorder' (but also for depression) remains.

In the meantime, as far as clinicians are concerned, it may be useful to be aware that the positive predictive value (probability that a woman endorsing one Whooley question has a mental disorder) of the Whooley questions, in a population such as ours with a high prevalence (around 25%) of disorders (including depression, anxiety disorders, eating disorders, obsessive–compulsive disorder, post-traumatic stress disorder and other disorders), was 66% (or 80% if both Whooley questions are endorsed). Subsequent assessment by a general practitioner or other trained professional is essential – as National Institute for Health and Care Excellence guidance in 2014 highlights,[2] any tool used should not be used in isolation, but rather used in the context of a general discussion of mental health, which should include mental health history and treatment (and response to previous treatment) to facilitate appropriate intervention.

We hope that a short tool to identify presence of a mental disorder in maternity populations will be developed and validated soon, with a higher sensitivity, for use in maternity populations. It is certainly needed given, as Pawlby *et al* highlight in their letter, the prevalence of mental disorders in pregnant women is alarmingly high. We will be developing a predictive tool, and examining its effectiveness in different populations in England, that we hope will be useful.

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Louise M Howard, Professor in Women's Mental Health, Section of Women's Mental Health, Institute of Psychiatry, Psychology and Neuroscience and Women's Health Academic Centre, King's College London and South London and Maudsley NHS Foundation Trust, UK; **Kylee Trevillion**, Lecturer, Section of Women's Mental Health, Institute of Psychiatry, Psychology and Neuroscience, King's College London, UK; **Elizabeth Ryan**, post-doctoral statistician, Biostatistics and Health Informatics Department, Institute of Psychiatry, Psychology and Neuroscience, King's College London, UK; **Andrew Pickles**, Professor of Statistics, Biostatistics and Health Informatics Department, Institute of Psychiatry, Psychology and Neuroscience, King's College London, UK, on behalf of the Effectiveness of Services for Mothers with Mental Illness team. Email: louise.howard@kcl.ac.uk

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