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Author's reply

I thank Brooker & Mitchell for their comments on my editorial¹ highlighting the potentially neglected, yet complex, interface between mental health services and sexual assault referral centres and the need to articulate formal pathways for adults experiencing trauma following sexual assault. These issues are similarly problematic for adolescents. A recent *Lancet* study looking at a cohort of young people attending the sexual assault referral centres serving Greater London over 2 years found that 80% of those undertaking a diagnostic assessment had a psychiatric diagnosis.² The presence of a psychiatric disorder was associated with psychosocial vulnerability including previous contact with children services, with mental health services and a history of sexual abuse, still raising serious concerns about the ability of institutions to protect those young people who are most at risk.

Brooker & Mitchell also raise the need to strengthen policies that support a 'business as usual' approach to enquiries about a history of sexual abuse within mental health services, for example through the care programme approach. There are perhaps many reasons why this task remains difficult without ongoing training and support for professionals. Since writing my editorial the Inquiry has published a report of its interim findings,³ one of the emerging themes is the need to focus on the cultural challenge of openly acknowledging, understanding and discussing childhood sexual abuse. This challenge is highlighted by some of the Inquiry's findings, that those charged with protecting them 'did not see children as victims or felt that it raised issues that were simply too difficult or uncomfortable to confront'.³

I am pleased with Brooker & Mitchell's agreement with my commentary on the responsibility of the individual well-informed clinician as I have previously advocated the importance of taking a reflexive, self-reflective approach to the practice of medicine.⁴

The reports of victims and survivors, heard by the Inquiry, that NHS mental health provisions lack flexibility and are not tailored to their specific needs are disheartening but need to be placed into the challenging context of providing public services within current funding constraints. I am encouraged by the Inquiry's choice to focus, as a matter of urgency, on the financial implications of providing treatment and support to victims and survivors and its recommendation to better understand current levels and effectiveness of public expenditure in this area. It is my hope that this may lead to much needed wider investment and better coordination of mental health services for the benefit of children and adult victims and survivors.

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Environmental preference might mediate the benefits of nature-based therapies

The benefits of psychotherapies are highly variable between patients, perhaps most notably because of personality types, cultural background and one's conception of mental ill health, among others.¹ Case in point, many patients consider group psychotherapy unacceptable and others do not consider psychotherapy credible at all. Similar variations are surely also implicated in nature-based therapies (NBTs).

For example, in the first instance, evidence over recent years has increasingly pointed to a benefit to mental health outcomes from exposure to and use of natural environments, commonly conceived in the literature as 'urban green spaces'. The causal mechanisms are complex, but usually distilled to: improved exercise and socialisation opportunities, reduced exposure to air and noise pollution, and importantly for NBTs, psychological stress-reduction and attention restoration.² As well as being evidenced, it is easy to anecdotally see how these non-psychotherapeutic components of NBT – the simple exposure and interaction with one's natural environment – are mediated culturally, and also by personality and personal environmental preferences inter alia. Between cultures, for example, there is dramatic variation in perceptions of natural environments and understandings of appropriate uses of these spaces.³ These variations are likely to modulate the causal mechanisms of the green space–mental health benefit.

Second, it is reasonable to suggest that these variations in the perceptions of natural environments affect the acceptability, credibility and therefore adherence and completion rates for NBTs. Until now the evidence for green space benefit to mental health outcomes has come largely from observational studies, which demonstrated varied effect sizes, and suggested differences as a result of the quality of environments, perceived safety concerns, among other individual personality and community factors.⁴

Stigsdotter and colleagues' most recent report therefore, which demonstrates non-inferiority of one particular brand of NBT for stress-related mental illnesses compared with a more mainstream cognitive-behavioural therapy, is to be welcomed.⁵ Although, of course, randomisation of patients is an essential facet in the production of reliable and valid science, this may have masked a subpopulation with complementary personalities and cultural characteristics (etc) for NBTs. And as the authors allude, given equal study withdrawal rates after randomisation, there may well be an equal subpopulation with preference for office-based cognitive-behavioural therapy (perhaps for perceived credibility reasons). The non-inferiority demonstrated in this trial therefore gives us the option that those patients who may be open and keen on the idea of NBTs may be more adherent, more likely to complete the intervention and independently receive greater benefit through the causal mechanisms described above. NBTs therefore might now be considered another option (rather than any kind of replacement) in the tool kit of primary care or mental health services aimed at addressing the high burden of stress morbidity, especially for those expressing a preference for it.

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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 Scales² 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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Whooley questions miss ~80% of 'cases': are they therefore really 'useful'?

One of Howard *et al*'s¹ conclusions in their paper is that their data confirm that the Whooley questions² '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