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How to interpret different results for CRHTT data

Jacobs & Barrenho[1] used the same data as Glover *et al*[2] when they were comparing admissions in primary care trusts with and without crisis resolution and home treatment teams (CRHTTs). However, they employed different methods for their analysis and reached conflicting conclusions. According to Jacobs & Barrenho, the introduction of CRHTTs did not have a statistically significant influence on the number of admissions, while Glover *et al* found a significant reduction especially for CRHTTs which offered a 24-hour service.

In their article, Jacobs & Barrenho[1] do report a reduction in admissions (e.g. Fig. 4) but state that it was not statistically significant. They do not mention power calculations. There were usable data available from 229 primary care trusts (PCTs) and the authors conducted various complex analyses by using a number of control factors and by studying trends over time. It could be that their lack of statistically significant findings is because of a lack of power. If this is the case, there is no fundamental difference between their findings and the previous analysis.[2]

At the end of their article, the authors make the suggestion that perhaps data should be analysed at the level of CRHTTs and not at the level of PCTs, given that there is huge variation between CRHTTs. We concur with that suggestion and we would like to go even further and suggest that future studies look at the service actually provided to individual patients in terms of how many visits are undertaken over a specified number of days. This information is readily available from most electronic notes systems. Further study is needed to investigate the types of interventions provided, such as whether medication was prescribed and administered, whether specific psychological treatments were offered, and so on. The availability of such data will allow an informed decision to be made about what is required to avoid admission to hospital and whether a CRHTT is the best organisational format to deliver that care.

1 Jacobs R, Barrenho E. Impact of crisis resolution and home treatment teams on psychiatric admissions in England. *Br J Psychiatry* 2011; **199**: 71–6.

2 Glover G, Arts G, Babu KS. Crisis resolution/home treatment teams and psychiatric admission rates in England. *Br J Psychiatry* 2006; **189**: 441–5.

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Authors' reply: Power calculations are seldom used in the multiple regression context, particularly with panel data and population-level data. These tend to be rather made with trial-based data to estimate appropriate sample sizes. Many would argue that *post hoc* power calculations are misleading and irrelevant.[1–3] Nevertheless, a *post hoc* power calculation based on the ordinary least squares model which uses the total number of valid cases used in the analysis, the total number of predictors in the model, the model R-squared, and the assumed P-value (set at 0.05), suggests that for all models the power is 1.00. By convention, this value should be greater than or equal to 0.80.

More importantly though, the benefit of the difference-in-difference methodology is that it provides for more precise estimates than the previous analysis and also allows for the simultaneous inclusion of covariates such as the team fidelity criteria (e.g. crisis resolution and home treatment teams (CRHTTs) offering a 24-hour service) as well as overall time trends. There are fundamental differences between the two types of analyses with the difference-in-difference methodology being a far more potent and robust policy evaluation tool.

We agree that future studies should ideally look at analysing admissions (and potentially other factors) at CRHTT level. We explored the possibility of doing this by contacting several teams to ask about their geographical boundaries, but found, surprisingly, that many teams were in fact unable to clearly delineate their geographical 'patch' and that even if they could define their current boundaries, these had often changed over time, making an analysis of long-term trends with difference-in-difference methodology unfeasible. Moreover, a large-scale national longitudinal study would require data from before the policy change (circa 1998) to effectively assess the policy impact, for which routine administrative data is more suited than data from individual electronic records systems, which have huge variation in detail, quality and method of collection.

1 Levine M, Ensom MH. Post hoc power analysis: an idea whose time has passed? *Pharmacotherapy* 2001; **21**: 405–9.

2 Hoenig JM, Heisey DM. The abuse of power: the pervasive fallacy of power calculations for data analysis. *Am Stat* 2001; **55**: 19–24.

3 Fogel J. Post hoc power analysis: another view. *Pharmacotherapy* 2001; **21**: 1150.

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Need to identify modifiable risk factors of dementia in the older UK African–Caribbean population

The article by Adelman and colleagues[1] made an important contribution in exploring dementia in older people of African–Caribbean origin in the UK. This article paves a way for policy makers in assessing the public health implications of this ubiquitous condition in terms of care burden and economic impact. However, this research study raises important issues.

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