Casanova *et al*. 2011). Then, after calculating the new recovery percentages with the 6MWDs, analyses could be preformed to compare the means with predicted values.

Declaration of Interest

None.

References

Casanova C, Celli BR, Barria P, Casas A, Cote C, de Torres JP, Jardim J, Lopez MV, Marin JM, Montes de Oca M, Pinto-Plata V, Aguirre-Jaime A; Six Minute Walk Distance Project (ALAT) (2011). The 6-min walk distance in healthy subjects: reference standards from seven countries. *European Respiratory Journal* **37**, 150–156.

Chetta A, Zanini A, Pisi G, Aiello M, Tzani P, Neri M, Olivieri D (2006). Reference values for the 6-min walk test in healthy subjects 20–50 years old. *Respiratory Medicine* **100**, 1573–1578.

Friedberg F, Sohl S (2009). Cognitive-behavior therapy in chronic fatigue syndrome: is improvement related to increased physical activity? *Journal of Clinical Psychology* **65**, 423–442.

Moss-Morris R, Sharon C, Tobin R, Baldi JC (2005). A randomized controlled graded exercise trial for chronic fatigue syndrome: outcomes and mechanisms of change. *Journal of Health Psychology* **10**, 245–259.

White PD, Goldsmith K, Johnson AL, Chalder T, Sharpe M; PACE Trial Management Group (2013). Recovery from chronic fatigue syndrome after treatments given in the PACE trial. *Psychological Medicine*. Published online: 31 January 2013. doi:10.1017/S0033291713000020.

White PD, Goldsmith KA, Johnson AL, Potts L, Walwyn R, DeCesare JC, Baber HL, Burgess M, Clark LV, Cox DL, Bavinton J, Angus BJ, Murphy G, Murphy M, O'Dowd H, Wilks D, McCrone P, Chalder T, Sharpe M; PACE trial management group (2011). Comparison of adaptive pacing therapy, cognitive behaviour therapy, graded exercise therapy, and specialist medical care for chronic fatigue syndrome (PACE): a randomised trial. *Lancet* **377**, 823–836.

White PD, Sharpe MC, Chalder T, DeCesare JC, Walwyn R; PACE trial group (2007). Protocol for the PACE trial: a randomised controlled trial of adaptive pacing, cognitive behaviour therapy, and graded exercise, as supplements to standardised specialist medical care versus standardised specialist medical care alone for patients with the chronic fatigue syndrome/myalgic encephalomyelitis or encephalopathy. *BioMed Central Neurology* **7**, 6.

Wiborg JF, Knoop H, Stulemeijer M, Prins JB, Bleijenberg G (2010). How does cognitive behaviour therapy reduce fatigue in patients with chronic fatigue syndrome? The role of physical activity. *Psychological Medicine* **40**, 1281–1287.

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Letter to the Editor

Comments on 'Recovery from chronic fatigue syndrome after treatments given in the PACE trial'

Important outcome data from the PACE trial (White *et al*. 2011) appears to be missing from the paper describing recovery in ME/CFS (White *et al*. 2013) and the participants do not appear to have been asked whether they had recovered as a result of receiving cognitive behaviour therapy (CBT), graded exercise therapy (GET) or Pacing.

The paper would have been improved had three specific markers of recovery been reported. First is the receipt of a state sickness or disability benefit. Claiming such a benefit indicates that the person is still ill and has not recovered. This data was included in the cost analysis study (McCrone *et al*. 2012) that reported: 'Receipt of benefits due to illness or disability increased slightly from baseline to follow-up.'

Second is employment or education status. The recovery paper argues that 'Return to work is not, however, an appropriate measure of recovery if the participant was not working before their illness and is influenced by other factors such as the job market.' However, a sustained return to meaningful paid employment, or education, or the ability to do so, is an objective marker of recovery.

Third is ability to mobilize. Recovery in a condition whose cardinal clinical features relate to mobility – exercise-induced muscle fatigue and weakness – must be matched with an ability to mobilize in a normal and timely manner. The overall results for all the treatments in the PACE trial relating to changes in the six-minute walking test from baseline to 52 weeks do not represent a return to normal levels of activity. It can be seen that the figures for all the treatment groups at 52 weeks are below the 402 m reported to be present in patients with class 3 heart failure (Lipkin *et al*. 1986). So the results for those who had recovered – who should now be achieving a much higher distance – ought to have been included. In addition, the question could be raised as to how it is possible to meet the entry criteria for the PACE trial with a Short Form-36 physical function subscale score of 65 yet leave the trial as recovered with a lower score of 60.

The term 'recovery' implies a sustained return to symptom-free health with the ability to repeatedly and reliably participate in all aspects of normal life – employment, education, social activities, etc. Without this information it is difficult to conclude that these patients have in fact recovered.

Declaration of Interest

None.

References

Lipkin DP, Scriven AJ, Crake T, Poole-Wilson PA (1986). Six minute walking test for assessing exercise capacity in chronic heart failure. *British Medical Journal (Clinical Research Edition)* **292**, 653.

McCrone P, Sharpe M, Chalder T, Knapp M, Johnson AL, Goldsmith KA, White PD (2012). Adaptive pacing, cognitive behaviour therapy, graded exercise, and specialist medical care for chronic fatigue syndrome: a cost-effectiveness analysis. *PLoS One* 2012, **7**, e408084.

White PD, Goldsmith KA, Johnson AL, Potts L, Walwyn R, DeCesare JC, Baber HL, Burgess M, Clark LV, Cox DL, Bavinton J, Angus BJ, Murphy G, Murphy M, O'Dowd H, Wilks D, McCrone P, Chalder T, Sharpe M (2011). Comparison of adaptive pacing, cognitive behaviour therapy, graded exercise therapy, and specialist medical care for chronic fatigue syndrome (PACE): a randomized controlled trial. *Lancet* **377**, 823–836.

White PD, Goldsmith K, Johnson AL, Chalder T, Sharpe M; PACE Trial Management Group (2013). Recovery from chronic fatigue syndrome after treatments given in the PACE trial. *Psychological Medicine*. Published online: 31 January 2013. doi:10.1017/S0033291713000020.

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Letter to the Editor

Response to correspondence concerning 'Recovery from chronic fatigue syndrome after treatments in the PACE trial'

The definition of recovery from any chronic illness is challenging. We therefore agree with Cox (2013) and Courtney (2013) that no single threshold measurement is sufficient; this is why we measured several domains of improvement and combined them into a composite measure of recovery (White *et al*. 2013). Shepherd (2013) suggests asking patients whether they recovered *as a result of* [*our italics*] receiving a treatment; we did not ask this since it is not possible for individuals to ascribe change to one particular source in exclusion from all others, such as regression to the mean or external factors. Maryhew (2013) suggests self-ratings may be biased when participants cannot be masked to treatment allocation; this may be true, but is inconsistent with cognitive behaviour therapy (CBT) being more effective than adaptive pacing therapy (APT) when treatment expectations were significantly lower before treatment (White *et al*. 2011).

We dispute that in the PACE trial the six-minute walking test offered a better and more 'objective' measure of recovery, as suggested by Agardy (2013), Maryhew (2013), and Shepherd (2013). First, recovery from chronic fatigue syndrome (CFS), which is defined by a patient's reported symptoms, is arguably best measured by multiple patient-reported outcome measures, rather than a single performance test. Second, and importantly, there were practical limitations to our conduct of the walking test. Due to concerns about patients with CFS coping with physical exertion, no encouragement was given to participants as they performed the test, by contrast to the way this test is usually applied (Guyatt *et al*. 1984; American Thoracic Society, 2002). Rather than encouragement, we told participants, 'You should walk continuously if possible, but can slow down or stop if you need to.' Furthermore we had only 10 metres of walking corridor space available, rather than the 30–50 metres of space used in other studies; this meant that participants had to stop and turn around more frequently (Guyatt *et al*. 1984; Troosters *et al*. 1999; American Thoracic Society, 2002), slowing them down and thereby vitiating comparison with other studies. Finally, we had follow-up data on 72% of participants for this test, which was less than for the self-report measures (White *et al*. 2011).

Economic data, such as sickness benefits and employment status, have already been published by McCrone *et al*. (2012). However, recovery from illness is a health status, not an economic one, and plenty of working people are unwell (Oortwijn *et al*. 2011), while well people do not necessarily work. Some of our participants were either past the age of retirement or were not in paid employment when they fell ill. In addition, follow-up at 6 months after the end of therapy may be too short a period to affect either benefits or employment. We therefore disagree with Shepherd (2013) that such outcomes constitute a useful component of recovery in the PACE trial.

We agree with Carter (2013) that there is a difference between sustained recovery and temporary remission; this is why we were careful to give a precise definition of recovery and to emphasize that it applied at one particular point only and to the current episode of illness (White *et al*. 2013).

Despite the complexities of measuring recovery, we believe that our approach of using multiple self-report measures provides a reasonable approach to inform clinicians' and patients' choice between available