

To the editor:

With interest we read the article by Lee et al.[1], which reported the effects of continuous positive airway pressure (CPAP) treatment on mood symptoms in patients with obstructive sleep apnoea (OSA). The authors concluded that three weeks of CPAP treatment did not show any specific therapeutic effects.

However, we were surprised that the underpinning data for the sample size calculation was not shown and that the power analysis was based on an effect size of 0.68, which was adjusted to 0.77 after participants withdrew. In our opinion, this is unrealistically high, considering the previous trials on this subject in which only a few found small effects of CPAP on mood symptoms. Literature shows an effect size of 0.4-0.5 is realistic.[2] As a result, the authors based their results on too few participants, resulting in a decreased chance of finding a significant effect.

Furthermore, when investigating the relation of CPAP on mood symptoms caused by OSA, mediation of OSA on the relation of CPAP on mood symptoms should be evaluated, for instance using Sobel's test.[3]. Also, the authors did not reckon with other possible factors that could influence mood symptoms during the trial (e.g. personal circumstances). In addition, there is an agreement that baseline differences should not be tested for statistical significance but should be eyeballed for clinically relevant differences and, if necessary, adjusted for.[4]

Finally, a sensitivity analysis of the effect of missing values would have improved robustness of the findings.

In conclusion, in our opinion the study used too low numbers of participants. Besides, statistical analysis on mediation, impact of missing cases and impact of differences in baseline characteristics are missing. Therefore this trial was not likely to find a significant effect from the beginning. A larger trial is needed, addressing all issues mentioned above.

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3. Sobel, M.E., *Asymptotic confidence intervals for indirect effects in structural equation models*. Sociological Methodology, 1982. **13**: p. 290-312.
4. Pocock, S.J., et al., *Subgroup analysis, covariate adjustment and baseline comparisons in clinical trial reporting: current practice and problems*. Stat Med, 2002. **21**(19): p. 2917-30.