

## As We Said, Loneliness (Not Living Alone) Explains Individual Differences in Sleep Quality: Reply

Louise Hawkey  
University of Chicago

Kristopher Preacher  
University of Kansas

John Cacioppo  
University of Chicago

We appreciate the opportunity to respond to the letter to the editor in regard to the role of living alone in explaining differences in sleep quality. The authors of the letter correctly pointed out that although we controlled for marital status in our original study (Hawkey, Preacher, & Cacioppo, 2010), we did not control for living alone in our analyses of loneliness and daytime dysfunction. The authors drew to our attention the prior work of Gu, Sautter, Pipkin, and Zeng (2010), who found that living alone was associated with better sleep quality independent of marital status. We therefore reexamined our data and found that living alone was not significantly associated with loneliness ( $r = .13$ ,  $p = .07$ ) or daytime dysfunction ( $r = .08$ ,  $p = .24$ ; data not reported in original study). Living alone therefore cannot explain the effect of loneliness on daytime dysfunction in our sample.

It is important to note that we did not argue that the threat of sleeping alone was responsible for differences in sleep quality. In evolutionary history, humans would have relied on the objective presence of others to minimize the danger inherent in sleeping alone in a hostile environment. In contemporary time, the presence of another may not be necessary to reduce fear and anxiety, but our evolutionary history is still with us in terms of the feelings of safety and security that come with the feeling of social connectedness. Thus, we argued that the perception of connectedness (and conversely, perceived isolation) is as important if not more important than the presence of another (i.e., living and/or sleeping with another) in predicting sleep quality. Indeed, our analyses showed that even those who are married are at risk for poor sleep if they feel isolated.

The authors of the letter describe analyses in which they pitted living alone and loneliness against each other in explaining sleep quality. Consistent with our data, living alone was not associated with sleep quality, but loneliness was. The authors distinguished between social and emotional loneliness and found that only

emotional and not social loneliness was associated with poor sleep. The UCLA Loneliness Scale that we used does not make this distinction, but it includes some items that are equivalent to the social and emotional loneliness items of the de Jong Gierveld Loneliness scale used by these researchers. Moreover, because social and emotional loneliness are typically highly correlated, we maintain that their and our results are consistent with each other. Feelings of loneliness, but not living alone, help to explain individual differences in sleep quality.

These findings highlight one of the take-home points of our loneliness research more generally. It is the perception of isolation and not isolation per se that drives the prospective effects we've observed to date, including increases in blood pressure, increases in depressive symptoms, greater increases in morning cortisol, and alterations in gene transcription (Adam et al., 2006; Cacioppo et al., 2010; Cole et al., 2007; Hawkey et al., 2010). Prospective effects on sleep quality and daytime dysfunction are consistent with this patterning of effects.

### References

- Adam, E. K., Hawkey, L. C., Kudielka, B. M., & Cacioppo, J. T. (2006). Day-to-day dynamics of experience-cortisol associations in a population-based sample of older adults. *Proceedings of the National Academy of Science USA*, 103(45), 17058–17063. PMID: PMC1636578.
- Cacioppo, J. T., Hawkey, L. C., & Thisted, R. A. (2010). Perceived social isolation makes me sad: Five year cross-lagged analyses of loneliness and depressive symptomatology in the Chicago Health, Aging, and Social Relations Study. *Psychology and Aging*, 25, 453–463.
- Cole, S. W., Hawkey, L. C., Arevalo, J. M., Sung, C. Y., Rose, R. M., & Cacioppo, J. T. (2007). Social regulation of gene expression in humans: Glucocorticoid resistance in the leukocyte transcriptome. *Genome Biology*, 8, R189.1–R189.13. doi:10.1186/gb-2007-8-9-r189
- Gu, D., Sautter, J., Pipkin, R., & Zeng, Y. (2010). Sociodemographic and health correlates of sleep quality and duration among very old Chinese. *Sleep*, 33, 601–610.
- Hawkey, L. C., Preacher, K. J., & Cacioppo, J. T. (2010). Loneliness impairs daytime functioning but not sleep duration. *Health Psychology*, 29, 124–129.
- Hawkey, L. C., Thisted, R. A., Masi, C. M., & Cacioppo, J. T. (2010). Loneliness predicts increased blood pressure: Five-year cross-lagged analyses in middle-aged and older adults. *Psychology & Aging*, 25, 132–141.

---

Accepted under the editorial term of Robert M. Kaplan.

Louise Hawkey, Department of Psychology, University of Chicago; Kristopher Preacher, Department of Psychology, University of Kansas; and John Cacioppo, Department of Psychology, University of Chicago.

Correspondence concerning this article should be addressed to Louise Hawkey, Department of Psychology, University of Chicago, 940 E. 57th St., Chicago, IL 60637. E-mail: hawkey@uchicago.edu