Author's response to reviews

Title: Ethnicity, sleep, mood, and illumination in postmenopausal women

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PDF covering letter
Reviewer: Mary G. Umlauf

We appreciate the kind critique.

Reviewer: Margaret Moline

As kindly suggested, we have somewhat expanded the review of ethnic effects on depression and the discussion of theoretical models in the introduction.

As suggested, more detailed descriptions have been provided in the Methods for the use of “Webster’s rules” and the computation of the ODI4. We added explanation of the failures of the oximeters (which were the best oximeters designed for home use available at the time the study commenced but are now quite obsolete.) The number of days of urine collection for aMT6s assays (usually 2) is now provided, but it would seem wasteful to repeat details of the assay procedure which have been reported in the prior publication referenced, especially since the aMT6s assays yielded only negative results in the analyses presented here. Since we have previously reported that aMT6s was not related to poor sleep in this sample, it does not seem appropriate to expand on the point here.

As suggested, a table of demographic information characterizing the sample has been added as Table 1.

The revised introduction contains a bit more discussion about how illumination, sleep, mood, circadian adjustment, and wellness may interact, and how they might be influenced by age, ethnicity, and social factors arising from ethnicity. There are too many potential causal interactions to efficiently diagram. In any case, the methodology can demonstrate association but is insufficient to clarify causal pathways. For example, even when we know from controlled trials that illumination impacts mood, we cannot exclude that mood impacts illumination, e.g., by influencing sleep timing or outdoor behavior. This paper serves to point out what influences and causal pathways should be considered in future research and also steers us away from relationships which proved to be of negligible magnitude.

Reviewer: Francis Dane

This was certainly not a representative sample. A sentence was added to emphasize that even from within the Woman’s Health Initiative Volunteers, recruitment was biased to increased the percentage with particularly long or short sleep, older women, and minorities. These biases will be useful to improve the power of the ultimate study of sleep duration as a predictor of mortality and to satisfy NHLBI’s minority recruitment goals under Congressional direction.

As pointed out, because the sample is not representative, it is not satisfactory as an
assessment of depression, sleep, etc. in population ethnic groups. Nevertheless, since the available representative population samples used methods to ascertain depression considered less accurate than SCID interviews with a psychiatrist, the high rates of depressive disorders in Hispanics are of confirmatory interest. Little data about sleep are available from representative samples of a whole population within the U.S. For example, the Wisconsin sample of Young and colleagues is representative only of state employees. Although it is not as representative as previous work of our group and Bixler’s, this sample had advantages over our previous studies in having a larger number of minority subjects, in using a longer duration of 24-hour wrist activity recording, and in collection of high quality information about depression and the melatonin circadian rhythm. The contrasts between ethnic groups are of interest where the sleep and depression contrasts between ethnic groups seem to agree with the national Woman’s Health Initiative sample and with representative samples.

As mentioned by the reviewer, the samples of non-European women were too small for certain purposes. The limitations of sample size were clearly reported by presenting the 95% confidence intervals in Tables 1 and 2. Many contrasts between ethnic groups were reliable as indicated by the confidence intervals. Some were reliable for every ethnic group. It may be preferable to present data for an ethnic group having too small a sample for narrow confidence intervals than to leave data out altogether. It does not appear to us that the smaller ethnic groups created a problem in the ANCOVA results which would be resolved by leaving the groups out. The confidence intervals guard against misinterpretation. In the correlation analyses, the ethnic groups with small N had little impact, so we do not believe that the smaller ethnic groups posed a problem. As the referee mentioned, not all of the non-European ethnic groups presented the same contrasts with the European-American women, and thus, comparing the European-Americans with all non-Europeans combined would be confounding.

As suggested, potential over-generalizations in the Abstract were corrected.

We have followed the reviewer’s good suggestion to reword the statement about depression scores.