Reviewer's report

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

Version: 1 Date: 5 January 2004

Reviewer: Francis Dane

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General
According to the authors, the purpose of the study was to examine “ethnic differences in sleep and depression in the context of environmental illumination and circadian rhythms” (Abstract). To that end, the researchers analyzed baseline data from a prospective study in which ambient illumination and sleep-wake state were measured with wrist monitors for one week among a group of volunteers. For some nights, a finger pulse oximeter also was used. Participants completed a daily sleep log; a quality-of-sleep questionnaire and brief mood scale were completed at the end of baseline week. Finally, Global Assessment of Functioning and affective diagnoses were completed via structured clinical interview administered shortly after the baseline period.

The authors note the paucity of research concerning sleep disturbances among postmenopausal women and members of ethnic minority groups. They also note their previously reported inverse relationships between daily illumination and sleep complaints as well as depressive symptoms. The baseline data reported in this manuscript provide additional clarification in both research areas. It is important to note, however, that the current data come from volunteers within the larger, randomized clinical trials of the Women’s Health Initiative, and conclusions therefore must be limited to comparisons within the volunteer sample. Nevertheless, the results reported here provide interesting and important relationships that should be addressed in random samples selected in manners more apropos to epidemiological generalizations.

Consider, for example, ethnic differences in depression scores (adjusted for education and illumination): Hispanic women’s depression scores were twice those of European women’s scores, but the sample contained only 64 Hispanic women compared to 330 European women (estimated from percentages reported in Table 1 and based on an overall sample of 459 women). Similarly, European American women averaged significantly more objective sleep time than African American or Hispanic American women, but the sample only included 44 African American women. Thus, the differences reported are intriguing, but conclusions such as “Non-European-American postmenopausal women have curtailed sleep” (Abstract) would seem to be an overgeneralization from a limited sample of Non-European-American women. This is further compounded by the fact that Asian- and Native-American women (also Non-European) did not evidence curtailed sleep, although sample sizes for these ethnic groups were even smaller (n=18 and 3, respectively), perhaps too small to merit any generalization at all.

Given the disparity in sizes of ethnic groups, it may be more appropriate to separate the groups consistent with the conclusion stated in the Abstract; i.e., compare European-American with (all) Non-European-American. This would eliminate the difficulty of relying on Analyses of Variance or contrast codes (for partial correlations) in which one group is represented by only three data points. As written, however, all analyses involving comparisons among ethnic groups become suspect because of the large disparities in group sizes (e.g., more than a seven-fold disparity in size for African-American and European-American groups).

Discretionary Revisions
It is recommended that authors include a paragraph (or few sentences) in which they discuss the degree to which generalizations from volunteer samples are tentative, despite the randomized nature of the larger study from which the volunteer sample was obtained.
Minor Essential Revisions
There are several points at which the authors describe measures as though they are ratio measures (have meaningful, absolute zero) that should be corrected. For example, on page 7, the authors wrote “Hispanics were more than twice as depressed as European-American women,” but the mood scale employed is not a ratio scale. Scores for Hispanics may be twice as high as scores for Europeans, but that does not mean there was twice the amount of depression.

Major Compulsory Revisions
Given the disparity in group sizes, I believe analyses that included all five ethnic groups, including contrast codes for partial correlations, need to be revised to include only two groups (European vs. Non-European). For some measures, results for the Asian- and Native-American women are more consistent with those obtained European-American, which could cloud some of the analysis, so it may be useful to delete these groups from the analyses.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:
none