Reviewer’s report

Title: Sleep and recovery in physicians on night call: a longitudinal field-study

Version: 1 Date: 4 April 2010

Reviewer: Charles F George

Reviewer’s report:

This paper appears to be a sub-study of a large study, some of which has already been published, looking at other outcome variables. The aim of this was to examine whether a 16 hour night call schedule allowed for sufficient recovery in Anesthesiologists compared with other physician specialists handing less life-threatening conditions when on call. To do this, sleep was monitored using Actigraphy and a number of questionnaire scales were used and compared between Anesthesiologists, Pediatricians, and ENT surgeons during night call, nights after daytime work and 2 nights following post call, as well as on weekend days. The main outcome measure was physician self-report about whether or not they had sufficient recovery sleep.

This reviewer has a number of issues with the study. First of all, the main outcome measure is physician self-report. Whether physicians feel they have recovered is not exactly the same thing as whether they have recovered physiologically and in terms of vigilance and performance. Objective measures would certainly be more appropriate but in the small sample size would obviously not show an outcome. The authors allude to a heavier workload of Anesthesiologists compared with other physicians. It would be nice to have some metric to ensure that in fact they were working hard and again did not just have the perception they were working harder.

SPECIFIC COMMENTS

The paper is not particularly well organized or written.

Methods Section:

1. Page 6, 5th sentence: “Demographic data collected in the baseline questionnaire are presented in Table 1.” In the next sentence the authors are commenting about serum insulin, plasma glucose and lipid levels. This commentary does not belong in the Methods section.

2. Page 6, line 9: “There were no cases of cardiovascular disease, diabetes, insomnia or sleep apnea syndrome.” The Reviewer asks, how did the authors know this? There is no description of any physical examinations, questionnaires, history taking to establish this or not.

3. The remainder of this page also has results, and we are talking about Methods at this point.

Working Conditions:
1. Page 7, line 6: “All participating physicians could expect to have a high workload on call, but the anesthesiologists also had generally to focus on life threatening conditions.” Do not ENT surgeons operate at night? Would this not be life-threatening?

2. Page 7, line 11: “These circumstances showed a clear between group exposure contrast in activities levels and mental demands.” Are these results again?

Rating Scales and Activity Measures:

1. Page 8, line 12: Karolinska sleepiness scale (KSS) was completed at bedtime. Why would this not be completed during working conditions?

2. Page 8, line 18: Mental fatigue was also assessed on the similar scale to the KSS, when was this and the Karolinska Sleep Diary (KSD) administered? It is not completely clear.

Study Design and Procedures:

1. Page 11, line 5: “Participants were then continuously monitored for 10 to 22 days”. Why is there such variation between the monitoring of the participants?. As a result some will have more data points than others, ostensibly affecting the variance between measures and affecting comparisons.

2. Page 11, line 16: The authors are talking about effects of habituation to sampling procedure and speak to the occasion of sampling equally distributed between work days, days related to night call duty and Saturdays. This is confusing and not clear. Perhaps a figure might be helpful.

In conclusion, this paper is not well written and does not give me confidence that in fact subjects actually recovered, particularly since the sleep on non-call days was not different than the sleep after on call days. This is consistent with the report of Saxena et al Sleep 2005, Volume 25, page 1386, which is missing from the reference list and discussion

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I have no competing interests