Review of: "A Sleep Disturbance Method Using Novel Objects in the Home Cage to Minimise Stress"

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Potential competing interests: No potential competing interests to declare.

The present study addresses a major issue present in sleep loss models, which is why many aspects of the work itself must be specified in detail.

TITLE

1. Sleep disturbance needs to be defined because in many works on sleep, sleep disturbances encompass disorders of initiating and maintaining sleep, disorders of excessive sleepiness, etc. https://www.ncbi.nlm.nih.gov/books/NBK401.

ABSTRACT

2. In the Background, sleep quality is mentioned; however, sleep quality was evaluated by parameters such as sleep efficiency, sleep latency, etc. It is suggested that if sleep quality parameters are not evaluated, the authors refer to the duration of time instead of sleep quality.

3. In Results, almost at the end of the paragraph, it is mentioned, "Thus, this method is a subchronic sleep disturbance and not sleep deprivation"; however, this statement is not clear because at the beginning of the results, it is mentioned, "During the four hours of SD, the mice were efficiently sleep-deprived."

4. In Highlights, in the second and fourth points, concepts such as "sleep-restricted" and "subchronic sleep deprivation" are mentioned. It is important to have clear concepts such as sleep restriction, sleep deprivation, and sleep disturbances since they are used interchangeably, which can cause confusion.

5. While in sleep deprivation models such as the flower pot technique the animals are alone and immobile on a small platform, in the modified multiple platform model, more platforms than animals are added so that the animals can move between them and thus decrease isolation stress and immobilization stress; review https://doi.org/10.1016/j.brainres.2004.01.019.

Materials and methods

ANIMALS

6. Please specify the stage of the estrous cycle.

7. Specify the temperature and humidity parameters in which the animals were kept.

SELECTION OF OBJECTS

8. In the section "Animals," it is described that C57bl/6JTac female animals were used; however, in the section "Selection of objects," it is described that C57BL/6Rj animals were used. Please homogenize the nomenclature of the animals used. In case they are different animals, it is necessary to specify it.

VALIDATION OF SD BY EEG/EMG/VIDEO RECORDING

9. It is necessary to specify the parameters that were taken in order to discern REM and NREM sleep and wakefulness using the data obtained from EEG and EMG.

10. Up to this section, the age of the animals is indicated. Please move this information to the "Animals" section.

RESULTS

11. Develop more clearly the information in the figure captions of all the figures.

12. What is the time criteria for dividing fecal corticosterone intake into before, early, and late SD? How many minutes or hours were considered?

DISCUSSION

13. In the background, the studies on sleep loss only include references to work where corticosterone is evaluated in plasma; therefore, it is required to include references to work on sleep loss where corticosterone metabolites are evaluated in feces. Otherwise, clarify that it is a methodological proposal for these studies.

14. To address in a concise way the association between corticosterone and stress, in the title, it is mentioned that their model minimizes stress, this based on the decrease of corticosterone; however, in the fifth paragraph of this section, they mention that by not detecting an increase of corticosterone in the fecal samples, then their protocol does not induce stress. Finally, in paragraph six of the same section, they mention that in an enriched environment protocol, "...corticosterone measurements are difficult to interpret as just a measure of negative stress."