

R. BRANKAERT, S. SUIJKERBUIJK, E. DEN OUDEN, Y. DE KORT, L. SNAPHAAN. **VitalLight: Evaluation of a home system for regulating the sleep-wake cycle of elderly with dementia.** *Gerontechnology* 2014; 13(2):172; doi:10.4017/gt.2014.13.02.268.00 **Purpose** Due to the aging population, dementia is an increasingly growing societal issue. Consequently, informal caregivers are forced to provide care in the home over a longer period of time. Especially with dementia, disturbed sleep patterns are often a tipping point for moving a person into an elder care facility. To address this challenge, a high-intensity, bluish light that suppresses melatonin is introduced into the home environment. This light potentially regulates the day-night rhythm¹. This type of intervention has been used in elder care facilities; but in this study we introduce a light fixture that is suitable for the home environment, the VitalLight (*Figure 1*). There is evidence that such light interventions can slow the cognitive deterioration of dementia², making it especially interesting to pursue in this context. Dynamics are added to the lamp so that it provides activating light throughout the day (when needed) and regular lighting in the evening. **Method** To evaluate the VitalLight, it was placed for two weeks in the real-life home environments of eleven elderly with early to mid-stage dementia. The subjective sleep quality was measured with a questionnaire, which was an adaptation based on the Karolinska sleep diary³ and the Pittsburg Sleep Quality Index⁴. The questionnaire was administered at three points in time: as a baseline at the start and after the first and second week. **Results & Discussion** The results show the subjective assessment of sleep quality over a period of two weeks (*Figure 2*). Based on these results, there was no significant improvement in the sleep-wake cycle. Nevertheless, based on the averages, a trend line is apparent with an upward trend of the mean sleep quality over two weeks. In conclusion, more research in a longitudinal setup is necessary to gather more data. A possible limitation is that the effect of melatonin suppression needs more time, and another limitation is the lack of a control group. Moreover, a combination of qualitative with quantitative measurements may provide more conclusive results. Furthermore, some people may be unresponsive to melatonin suppression, causing a bias in the mean results.

References

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Keywords: housing & daily activities, lighting, dementia, sleep patterns
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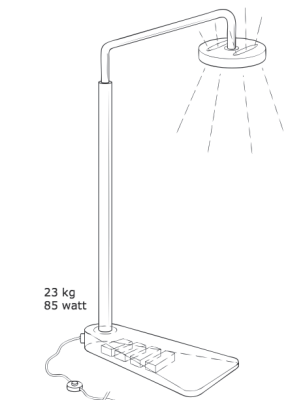


Figure 1. The light fixture

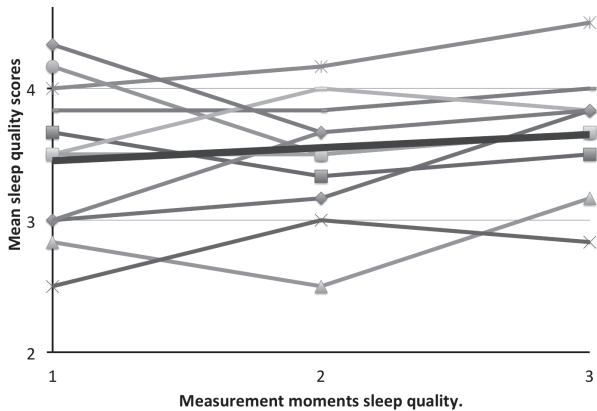


Figure 2. Sleep pattern over two weeks