

## Sleep Health in Direct-Care Workers

### BACKGROUND

This policy brief includes preliminary data from 37 direct-care workers at an assisted living facility in Florida. Participants wore a sleep actigraphy device and responded to smartphone-based surveys four times per day for two weeks. The results we found were intriguing. On average, the direct-care workers slept a normal amount for healthy adults. However, on nights when the direct-care workers had fewer hours of sleep, they reported worse work quality the following day. The goal of this brief is to examine sleep health in direct-care workers.

### STUDY METHOD

**I. Objective sleep data** were collected from a sleep actigraphy device, called the ActiWatch Spectrum Plus (see Figure 1). This device tracked wrist movement and light to measure sleep and wake periods.<sup>1,2,3</sup>



Figure 1. Image of sleep actigraphy device

- Objective sleep duration: the recorded total amount of time a participant spent in bed.
- Objective sleep quality: the amount of time a participant wakes after falling asleep. A participant is said to have worse sleep quality

if they spend more time awake and tossing and turning throughout the night.

**II. Self-reported sleep and work quality data** were collected through smartphone-based surveys. Four times per day (i.e., upon waking, before lunch, in the afternoon, and before bedtime), for two weeks, participants responded to these surveys (see Figure 2).

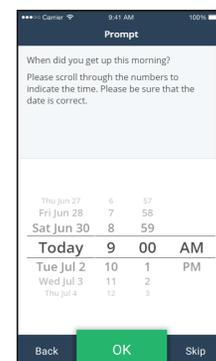
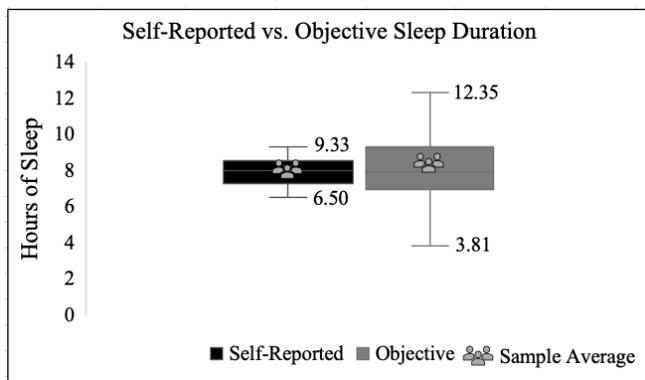


Figure 2. Image of a smartphone-based survey

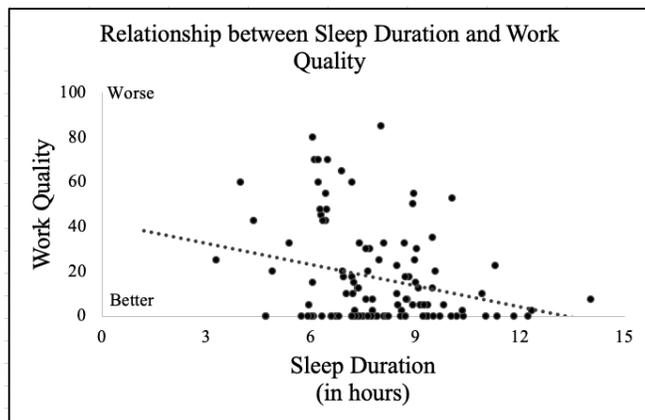
- Self-reported sleep duration: this was assessed during the upon waking survey by asking participants to report the time they went to bed and woke up.
- Self-reported sleep quality: this was assessed during the upon waking survey by asking participants how well they slept last night. Higher scores indicate better sleep quality.
- Self-reported work quality: this was assessed during the before bedtime survey by asking participants how much they cut back on normal paid work activities and how much the quality of their work suffered. Higher scores indicate worse work quality.

## FINDINGS

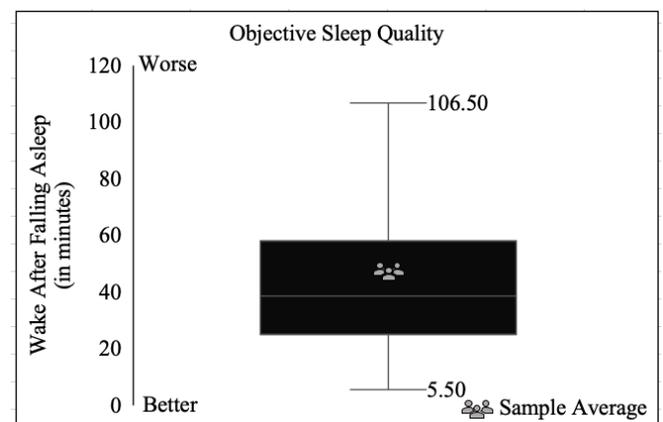
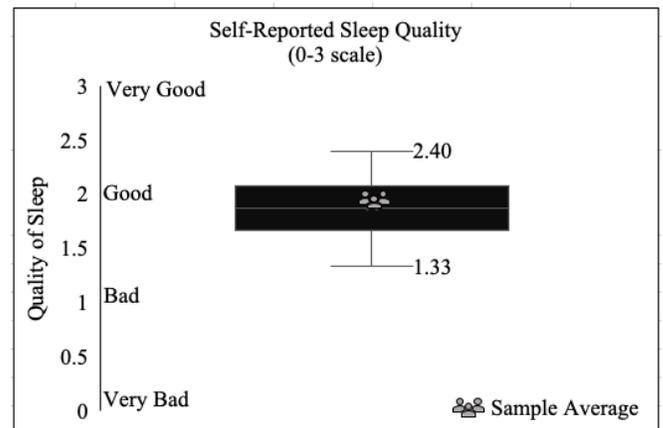
**Sleep Duration.** The average self-reported sleep duration for the entire sample was 8.08 hours per night (Range: 6.50—9.33 hours per night). This was not significantly different from the average sleep duration recorded by the sleep actigraphy device, which was 8.14 hours per night (Range: 3.81—12.35 hours per night). Research suggests that sleeping less than 7 hours or more than 9 hours on a regular basis is associated with adverse health outcomes. This sample slept a relatively healthy amount.<sup>4</sup>



**Objective Sleep Duration and Work Quality.** The graph below displays the relationship between objective sleep duration and self-reported work quality. On nights when direct-care workers had fewer hours of sleep, they also reported worse work quality the following day. This suggests that sleep plays a critical role in work quality.



**Sleep Quality.** On average, self-reported sleep quality for the entire sample was 1.90 (less than “good”). These scores ranged from ‘bad’ (1.33) to ‘good’ (2.40). As recorded by the sleep actigraphy device, the average sleep quality for the entire sample was 45.15 minutes. The best sleep quality in this sample was 5.50 minutes, and the worst was 106.50 minutes. This is important because people who are awake or tossing and turning more than 45 minutes per night may be at greater risk for insomnia, which is associated with worse long-term health outcomes. This information indicates that, on average, most of direct-care workers reported sleep that was disrupted.



## **POLICY IMPLICATIONS**

Previous night's sleep can affect next day work quality even among relatively healthy sleepers. In this study, we found that on days direct-care workers slept less, they reported worse work quality the following day. Further research is needed to understand the cumulative and long-term affects of poor sleep. Moreover, future research will focus on potential sleep interventions and best practices for good sleep health in healthcare workers broadly. Good sleep health can improve work quality, overall mood, and benefit other health characteristics. In another study, the investigative team also found that the vast majority of direct-care workers (80%) reported having at least one sleep concern and most workers (66%) expressed interest in participating in a sleep intervention if offered in the future. Policymakers should educate the public about good sleep health practices, allocate funds for communitiy sleep resources, disseminate resources to promote sleep health, and ensure that sleep health is assessed at annual wellness checks, especially for workers who are at-risk for poor sleep.

## **REFERENCES**

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