Adding Technology Boundary Management to the Sleep Treatment Education Program for Students

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Introduction

This study examined whether technology and sleep management training can increase positive behavioral outcomes in students. We were interested in the efficacy of an educational training session (based on the Sleep Treatment and Education Program for Students; STEPS Brown et al., 2006) that also included specific information about technology use around bedtime.

We hypothesized that, compared to the control group:

The experimental groups will have better (a) boundary behaviors around technology use and (b) sleep after one week, as well as (c) less burnout .

Photo by Alex McDougall/Emerald

Results

Results for self-reported measures were not statistically significant but there were some promising trends for some outcomes. For example, sleep quantity and quality in the intervention groups were slightly higher than the control group.

Results for actigraph measures were significant for average sleep duration and sleep inconsistency, but only when controlling for perceived behavioral control*.

Specifically, the STEPS-TECH participants had objectively higher sleep quantity and lower sleep inconsistency.

"It was mostly up to me whether I adjusted my sleep habits or not."
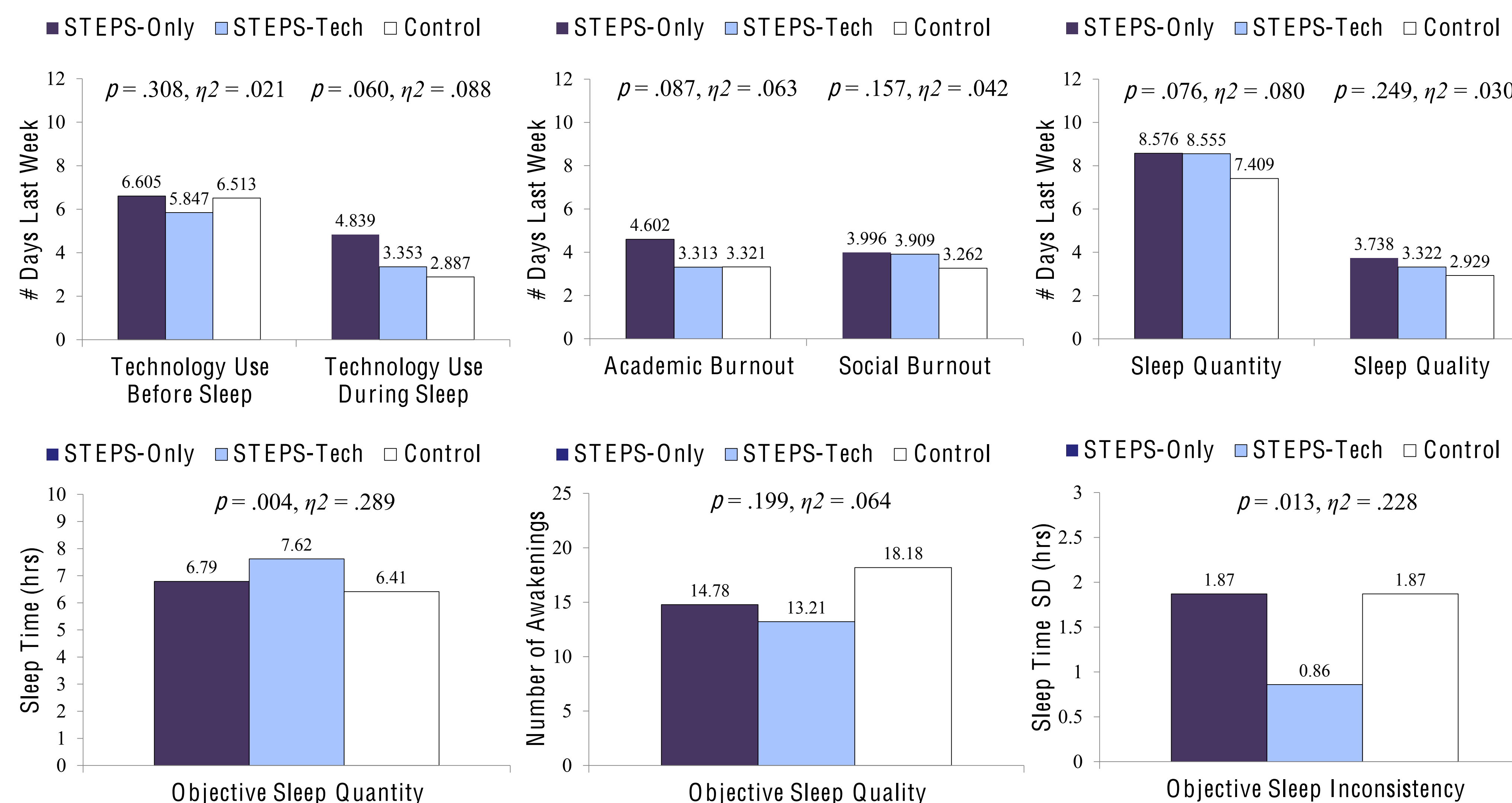
Note: All statistical tests to determine differences in posttest data outcomes based on treatment group were conducted with analysis of covariance (controlling for pretest data). Tests for actigraph data controlled for perceived behavioral control. All results are reported in one-tail.

Methods

Participants: Undergraduate students ($N = 58$) participated in two sessions for this experiment, including an orientation (pretest) and a follow-up (posttest). Each session took about 30 minutes.

Measures: Participants first completed measures of boundary creation strategies, technology use around bedtime, self-reported sleep variables (quality and duration), and burnout (academic and social).

Participants were randomly assigned to receive the educational training session with boundary management around technology use (STEPS-TECH experimental group; $N = 17$), the sleep only group without boundary management around technology use (STEPS experimental group; $N = 21$), or not (control group; $N = 20$).

All participants were given an actigraph to measure objective sleep for one week. This device measures the duration of sleep and the quality of sleep. At the end of one week, participants completed the posttest and were asked to self-report their sleep to compare against objective actigraph data and pretest results.

Actigraph Device for Objective Sleep Measurement

Conclusions

These results provide preliminary support for a sleep intervention improving objective sleep quantity and consistency (but not quality) over one week, but only when it also included the technology information. These differences were only significant when taking into account perceived behavioral control. No other differences in self-reported sleep, technology use, or burnout were found based on the intervention.

More work may be needed to make the training program consistently more effective across self-report and objective measures.

References

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