

# IMPACT OF DIGITAL MONITORING, ASSESSMENT, AND COGNITIVE BEHAVIORAL THERAPY ON SUBJECTIVE SLEEP QUALITY, WORKPLACE PRODUCTIVITY AND HEALTH RELATED QUALITY OF LIFE

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## INTRODUCTION

The ubiquity of smartphone technology and societal pressures of constant connection have increased at an accelerated pace during the past decade, resulting in an always-on society. All too often, this has led to the belief that sleep is a dispensable luxury. The price is huge, as sleep deficiencies of many kinds have reached pandemic levels, affecting health, mood, life expectancy, and performance. However, we can use technology to undo the damages caused by technology itself.

To validate the above statement, Aetna initiated a randomized controlled trial to test the efficacy of a mobile CBTI solution on sleep quality, workplace productivity, and quality of life in a commercial business population.

## METHODS

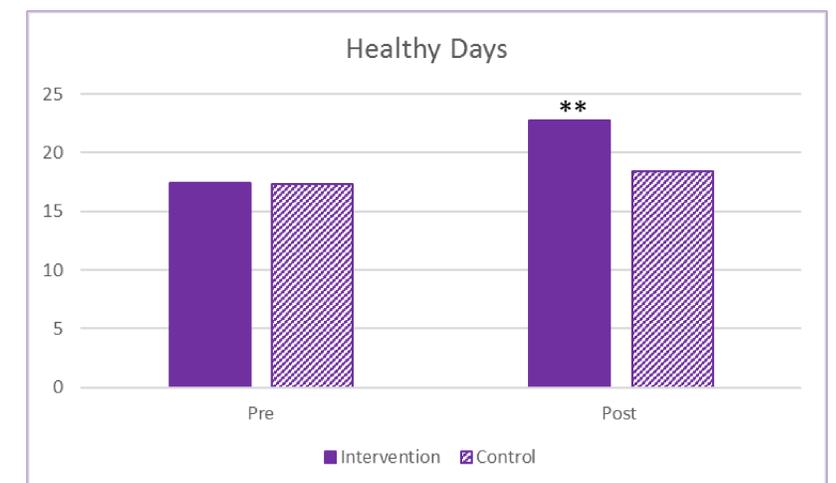
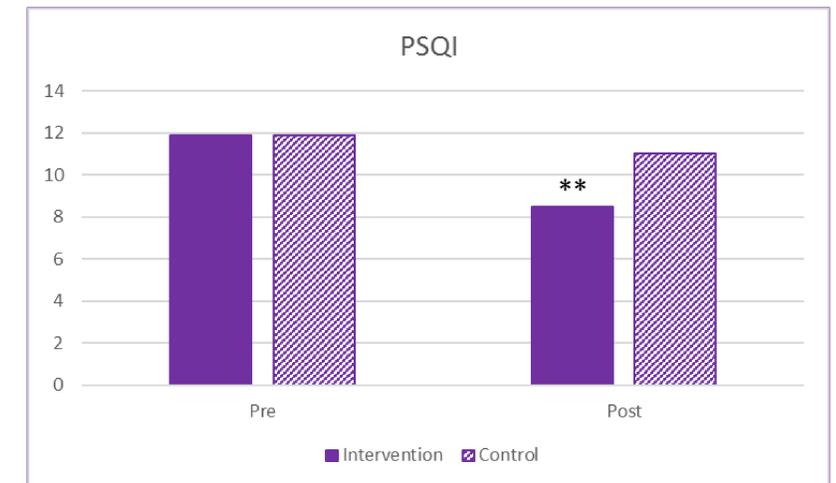
1. Recruitment via e-mail sent to 32,000 employees using different wellness interventions; this time they were offered SleepRate service, 3900 agreed to participate and satisfied the inclusion criteria (PSQI greater than 8).
2. 500 were selected and randomly assigned to the intervention group, or to a waiting list/control.
3. The intervention consisted of a mobile application (SleepRate) and digital assessment for Insomnia based on both subjective and measured sleep data over seven nights, followed by weekly cycles of personalized, adaptive digital guidance based on accepted protocols of CBTI.
4. Both groups got a pre-study survey including:
  - ✓ PSQI
  - ✓ Work productivity and Impairment (WPAI)
  - ✓ Health Related Quality of Life (HRQOL).
5. Both groups got post-study surveys at 8 weeks and 12 weeks following initial survey.
6. Surveys were administered and analyzed independently of SleepRate APP data analysis.

## RESULTS

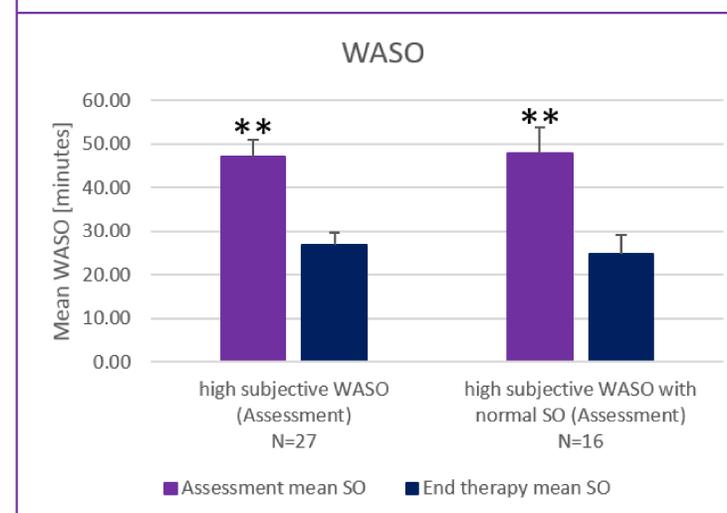
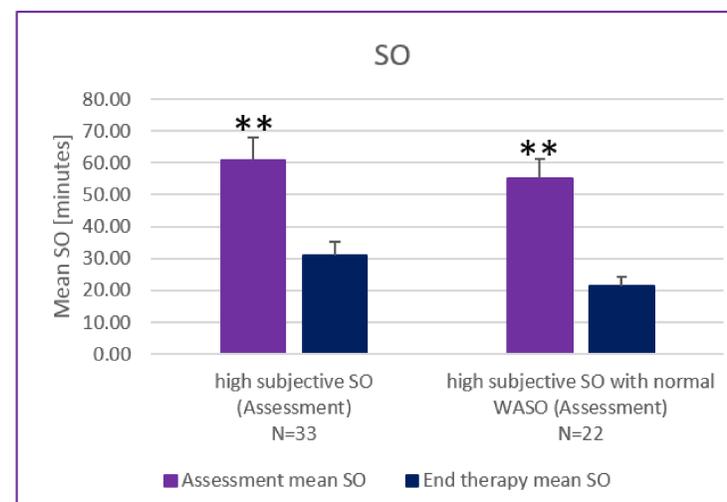
Out of the 250 who received the application, 183 completed a baseline sleep assessment, and 83 completed 3 weeks of digital therapy with an average of 5 nights tracked per week.

At the end of 12 weeks: PSQI scores were 68% lower than the control group (P = 0.00), and improving 4.8 points from baseline. Workplace presenteeism was 49.4% lower than the control (P=0.00), and the HRQOL indicated 4.8 Healthy Days (P=0.00) per month were added to the intervention group.

Sleep Latency (SO), Wake After Sleep Onset (WASO), daytime sleepiness and morning sleep satisfaction, as monitored within the APP, also improved significantly.



\*\* P<0.01



\*\* P<0.01 (paired t-test)

## CONCLUSION

The availability of digital health technology allows people to solve, or at least reduce, sleep deficiencies in the comfort of their own home, leading to greater workplace productivity and quality of life.