

# CBT for Insomnia Using E-Therapy and A Smartphone

Eyal S<sup>1</sup>, Mizrahi M<sup>1</sup>, Baharav A<sup>1,2</sup>

<sup>1</sup>HypnoCore, Petach Tiqva, Israel; <sup>2</sup>Wingate Institute, Netanya, Israel;

## Introduction

Insomnia is prevalent, affects mood, performance and wellbeing and maybe linked to increased morbidity. Cognitive Behavioral Therapy is recommended as the first line of treatment, yet access to therapy is limited. Mobile technology and wearable devices open new opportunities for self-help for insomnia.

We present a novel mobile e-therapy service, SleepRate, that combines:

- ✓ Sleep evaluation based on reported – subjective, and objective data
- ✓ Quantified sleep architecture measurement derived from Heart Rate Variability
- ✓ Personalized automated Cognitive Behavioral Therapy for Insomnia

## Methods

Subjects: 232 users (age 49±14 years, 138 Male) over 15 months

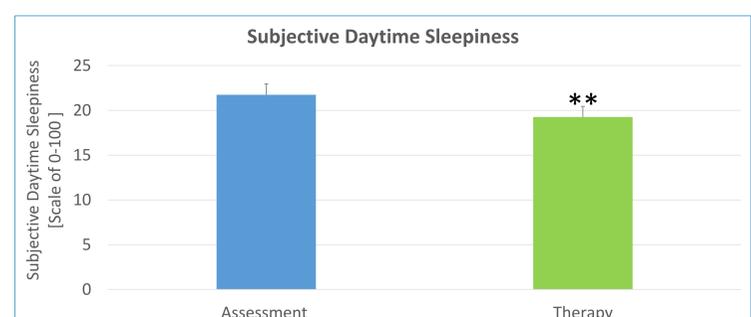
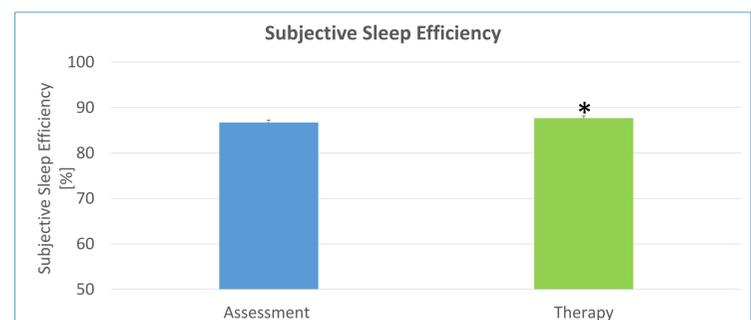
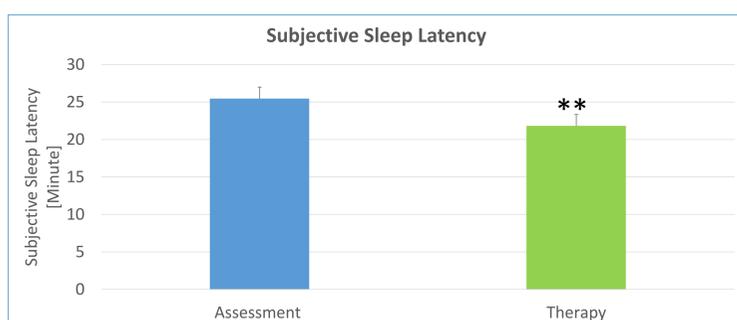
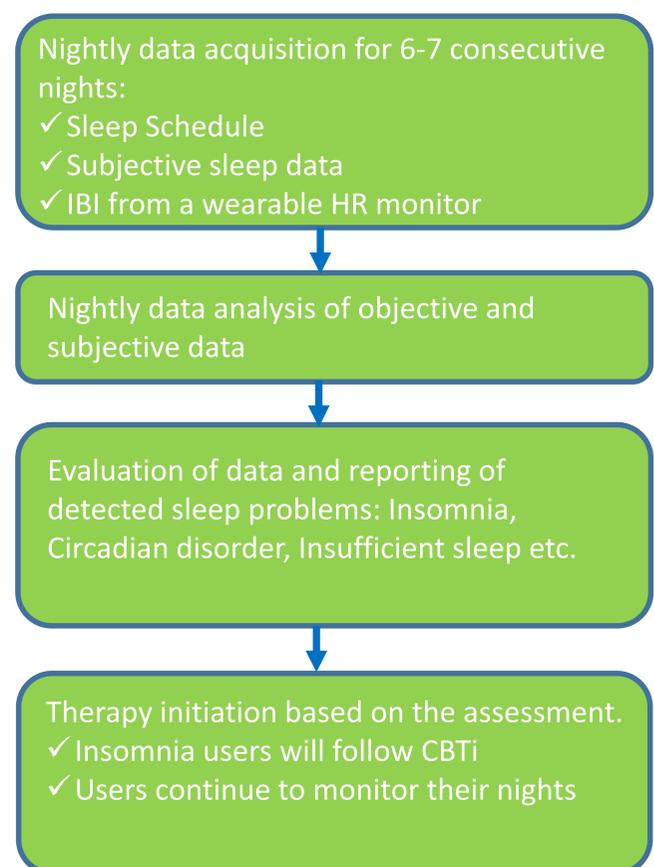
Assessment results: Insomnia (over 15 months)

Engagement with program: 20 nights at least

Statistical analysis: assessment nights (nights 1-6) were compared with nights 15-20, using paired t-test.

## Results

- ✓ Perceived sleep latency decreased significantly by 3.7 minutes ( $p < 0.01$ )
- ✓ Subjective sleep efficiency increased significantly ( $P < 0.05$ ) from 86.7±0.5% to 87.7±0.5%
- ✓ Subjective sleep satisfaction increased significantly ( $P < 0.05$ ) from 45.1±0.8 to 46.4±0.8
- ✓ Reported daytime sleepiness decreased significantly ( $P < 0.01$ ) from 21.7±1.2 to 19.2±1.2
- ✓ Objective TST decreased significantly (by 9 minutes from 395±4 minutes), as bedtime restriction was used to promote sleep consolidation.



## Discussion

- ✓ The findings indicate that after 20 days of adherence with the program, there was significant improvement in several sleep variables of users with insomnia symptoms.
- ✓ The main barriers were engagement with program and the availability of accurate and minimally intrusive wearables. These barriers are likely to diminish with the improvement of wearable technology.