Halo

Zero-Interface Sleep Enhancer

Value Proposition Summary

Target

Is

Teenagers who either struggle to sleep or would like to improve the quality of their sleep, along with parents who are concerned with the well-being of their children

Functional Benefit

We will provide a

Tangible product involving zero-UI- zero or minimal interaction. It will integrate meditative light, sound, aroma, and light therapies to enhance the teenagers' ability as well as quality of sleep.
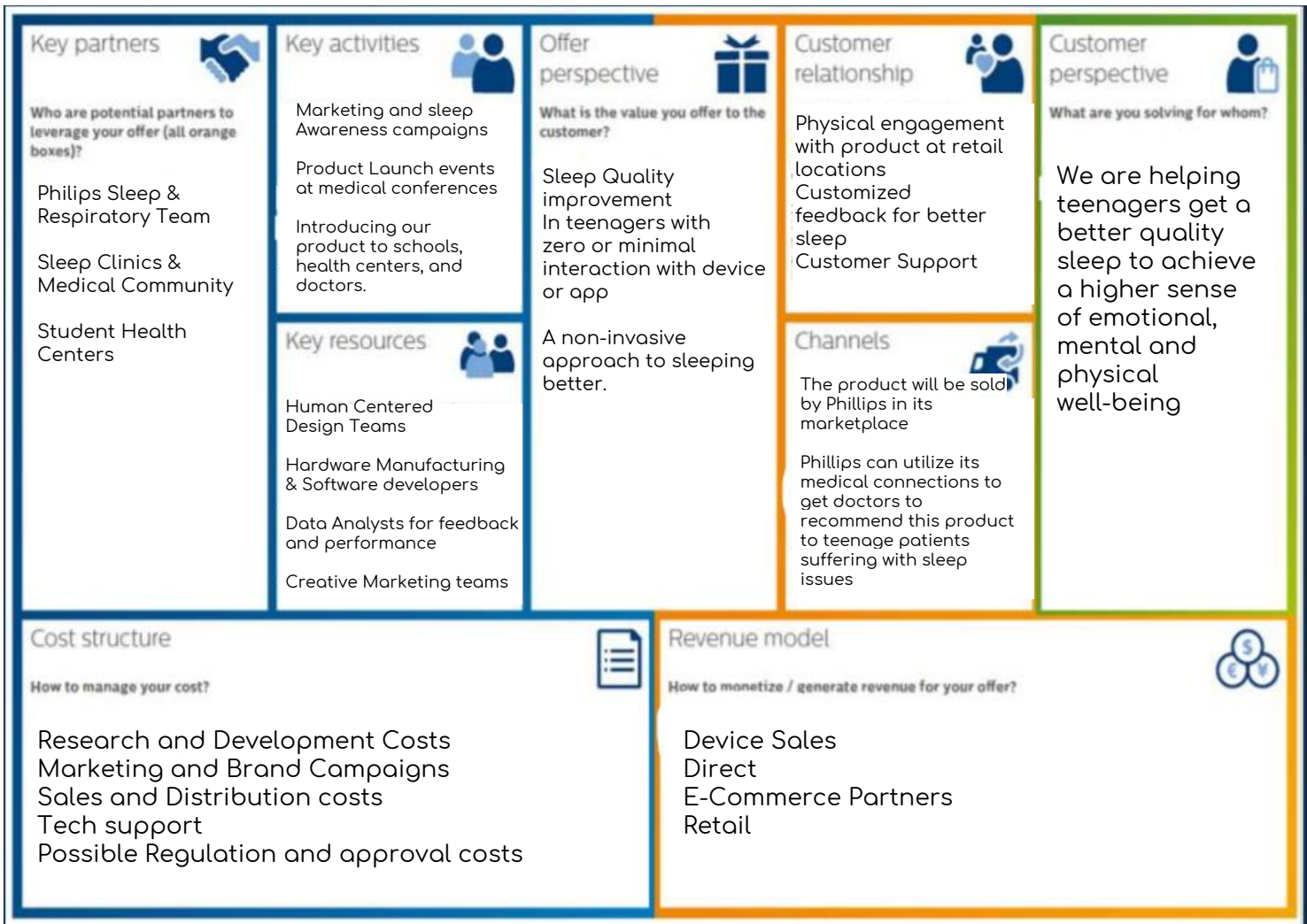
Emotional Benefit

So that

Teenagers can go to sleep with ease and comfort. Additionally, they can wake up with a sensation of feeling relaxed, motivated, and positive, which benefits teenagers mentally, socially, and physically.

Reasons to Believe

Because only Philips has

The vision in sleep-related improvements, the competence in light, sound, and aromatherapy technologies, and trust-based reputation in solving health related problems while maintaining customer loyalty

Business Model Canvas

Key partners
Who are potential partners to leverage your offer (all orange boxes)?

Philips Sleep & Respiratory Team

Sleep Clinics & Medical Community

Student Health Centers

Key activities
Marketing and sleep Awareness campaigns

Product Launch events at medical conferences

Introducing our product to schools, health centers, and doctors.

Key resources
Human Centered Design Teams

Hardware Manufacturing & Software developers

Data Analysts for feedback and performance

Creative Marketing teams

Offer perspective
What is the value you offer to the customer?

Sleep Quality improvement
In teenagers with zero or minimal interaction with device or app

A non-invasive approach to sleeping better.

Customer relationship
Physical engagement with product at retail locations
Customized feedback for better sleep
Customer Support

Channels
The product will be sold by Phillips in its marketplace

Phillips can utilize its medical connections to get doctors to recommend this product to teenage patients suffering with sleep issues

Customer perspective
What are you solving for whom?

We are helping teenagers get a better quality sleep to achieve a higher sense of emotional, mental and physical well-being

Cost structure
How to manage your cost?

Research and Development Costs
Marketing and Brand Campaigns
Sales and Distribution costs
Tech support
Possible Regulation and approval costs

Revenue model
How to monetize / generate revenue for your offer?

Device Sales
Direct
E-Commerce Partners
Retail

Reasons to Believe

Our product utilizes the human body's neural relation to various stimuli to help create a psychological and physiological shift towards the state of sleep.

Aromatherapy - Scents to sleep (lavender, chamomile), to wake (citrus, mint). Our Olfactory sense is the strongest sense because of its ability to integrate itself into a person's subconscious. Thus, even without realizing, it influences a teenager while they are sleeping and continues to do so as they wake up. That being said, our product will selectively emit fragrances that trigger emotions that help teenagers sleep peacefully. [1]

Sound - Halo plays white and pink noise to trigger and improve sleep states. For sleep, White noise is most commonly used; it resembles natural noises playing in the background, and helps create a sense of comfort to relax the brain. We then generate bursts of Pink noise during the second stage of sleep, also called deep sleep This prolongs the duration of deep sleep and increases quality of sleep, thereby helping the user to wake up feeling rested. This has also been linked to improvements in memory. Short bursts of pink noise are based on natural sounds and given to user in irregular intervals to *not* get accustomed to it. If a user were accustomed to pink noise, the brain would stop recognizing pink noise. [2-5]

Light Therapy - We utilize the effect of Light on the Human Circadian Rhythm to gently correct sleep cycles. Melatonin suppression caused by light is core of much of the research that links nighttime light to poor quality of sleep. By using light at the right intensity, color, and time (based on data recorded and analyzed), our product stimulates the brain to wake up properly, thus creating an effective cycle of sleeping and waking. [6,7]

Primary Market Research

Data collected from twelve teenagers from the age group 13-18 years age group and two parents. (Table in appendix)
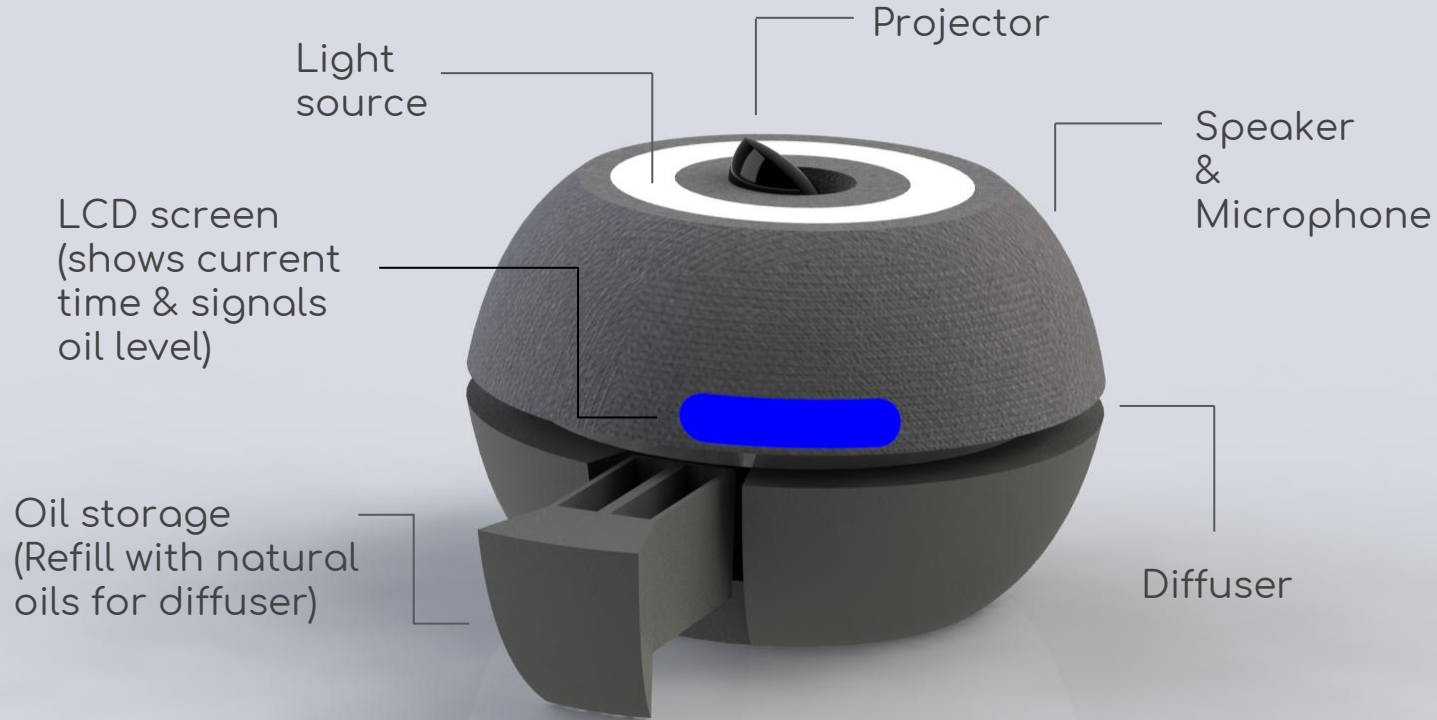
Key observations from user research interviews:

1) Most teenagers had trouble falling asleep at night.
2) 35% of teenagers woke up in the middle of the night, either because of troubled sleep, dreams or to use the restroom.
3) Many teenagers didn't feel rested when they got up in the morning which affected their functioning during their day, such as inability to focus in class, feeling tired, and distracted.
4) Different teens had different preferences of items which helped them sleep, the most common being their mattress, pillows, bed sheets, stuffed animals etc.
5) Most teenagers and parents preferred a more hands-off experience to falling asleep.
6) Most teenagers and their parents were not comfortable using a high tech object.

Outcomes

Teenagers are the end-users, but it's most likely parents who will buy Halo. We realized that both groups would have different concerns and motivations for choosing the product. So we decided to position the product in a way that is appealing to teenagers to use and for parents to buy.

1) **Trouble falling asleep at night** - Our technology will help teenagers relax and fall asleep with minimum interaction with an app or the device, reducing the cognitive load.

2) **Not feeling rested after waking up** - In addition to helping them fall asleep, we also need to improve their quality of sleep, by working towards a solution that syncs various biological and mental cycles.

3) **Difference in preferences amongst teenagers** - Our product will be customizable to cater to a wider range of teens with a wide range of preferences.

4) **Tackling the reluctance to buy a new product** - Our product needs to integrate effortlessly into the lives of teenagers without having to burden them with a new product that they have to physically use. Our user research helped us narrow down to a zero physical interaction experience with our product.

5) **Reluctance to use a high-tech product** - Our product will simple and intuitive to use, without a steep learning curve and with human-centered design aesthetics to not intimidate our young users.

Minimum Viable Product

Projector

Light source

Speaker & Microphone

LCD screen (shows current time & signals oil level)

Oil storage (Refill with natural oils for diffuser)

Diffuser

Use Case

Anne wants to sleep after a tiring day. She lies on her bed and the Halo Strip starts capturing vital body information and relays it to the Halo Ball.

She uses voice commands/app to set her alarms, wake up light and aroma for the next morning.

Anne has trouble falling asleep. She knows she can ask the Halo Ball though voice command (also App if preferred) to help her fall asleep in the following ways:
- "Halo, help me sleep." (turns on all preferences)
- "Halo, switch on diffuser." (sleep aroma)
- "Halo, switch on speaker." (white noise)
- "Halo, switch on halo." (via projector)

Anne turns on all her customized preferences of Halo (lavender scent is diffused while quiet white noise is played in the background). She regulates her breathing based on the continuous expansion and contraction of the halo-like light projected on the ceiling.

The soothing environment helps her fall asleep. Strip senses this and shuts off the components. According to her preferences and timing, the Halo Ball speaker also plays pink noise during her deep sleep.

Her customized wake up light option (sunrise-like effect over 30 minutes) helps her wake up at an optimal time according to her sleep cycle, feeling fresh and rested in the morning. She checks her sleep statistics and trends on the App and notes that she has been getting more hours of good-quality sleep gradually.
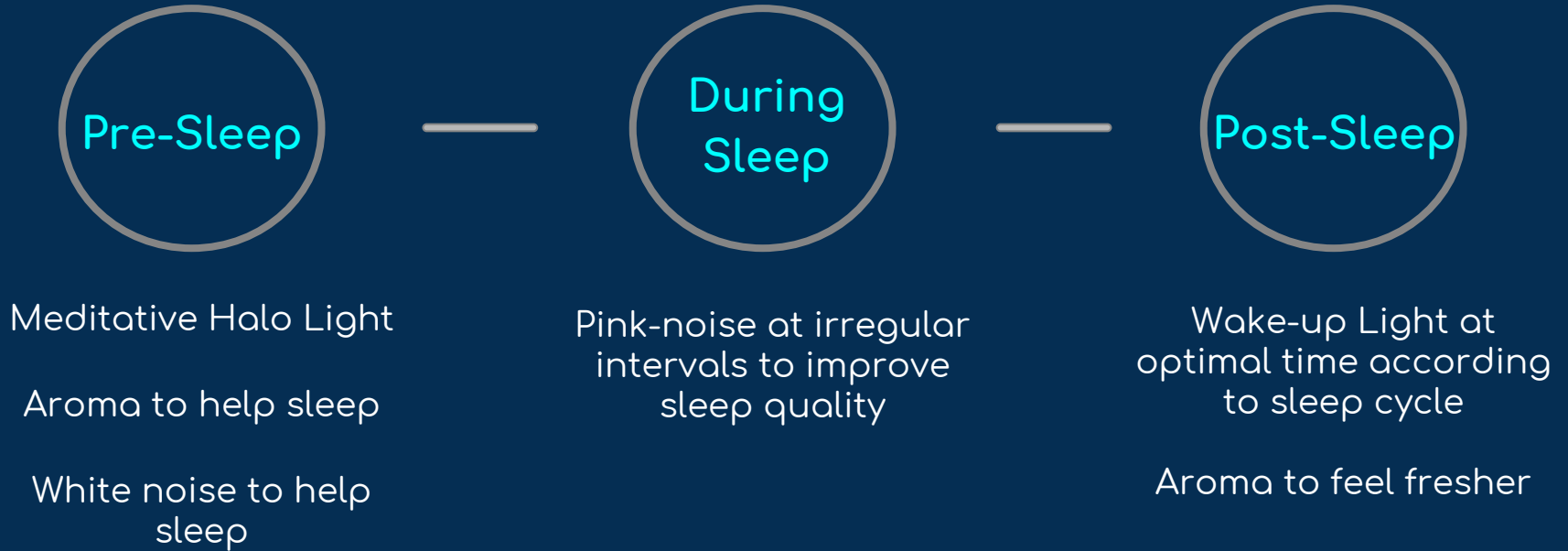
How does it work? - Functional Diagram
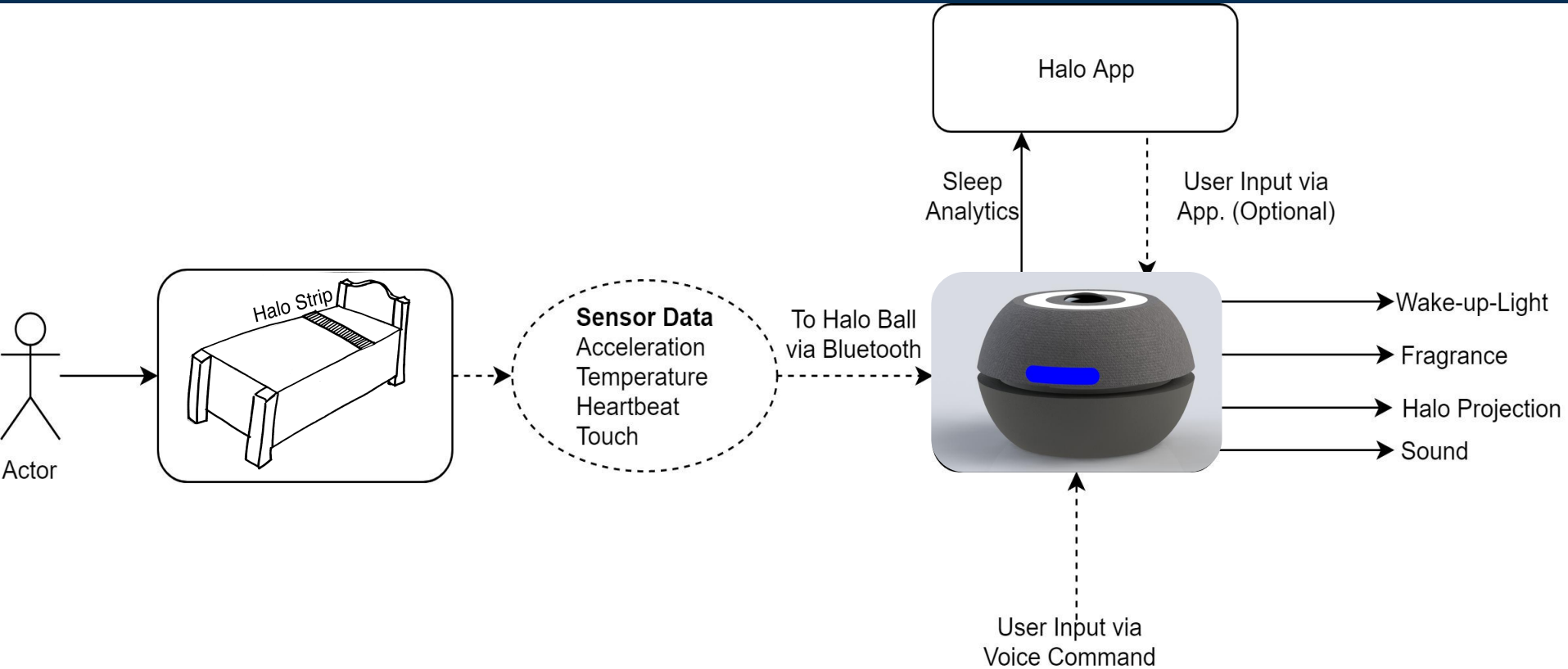
Functional Diagram - Explanation

Halo Strip detects user motion as an input, and outputs the following data: body Motion, body temperature, touch (if the bed is occupied).

This data is then relayed to the Halo Ball. The Halo Ball accepts another input in addition (a total of 3) . The second one is User Input via Voice. The voice inputs are commands to activate the various functions at will. The third is the optional method to accept input via App. The outputs from the Halo Ball are:

- Sound (white and pink noise) to elongate deep sleep and improve quality

- A meditative halo light to facilitate sleep

- A light projection in sync with circadian rhythms that wake the user up at the right time.

- An essential oil smell, based on aromatherapeutic practices, that will ease the user into sleep and assist in waking up peacefully.

Sleep Timeline Summary

Pre-Sleep — **During Sleep** — **Post-Sleep**

Pre-Sleep

Meditative Halo Light

Aroma to help sleep

White noise to help sleep

During Sleep

Pink-noise at irregular intervals to improve sleep quality

Post-Sleep

Wake-up Light at optimal time according to sleep cycle

Aroma to feel fresher

Good Night, Sleep Tight!

Appendix

References

1. Buchbauer, G., & Jirovetz, L. (1994). Aromatherapy—use of fragrances and essential oils as medicaments. Flavour and Fragrance journal, 9(5), 217-222.
2. http://www.berkeleywellness.com/healthy-mind/sleep/article/pink-noise-sleep
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5. http://www.jneurosci.org/content/32/40/13917.short
6. The effects of light therapy on sleep problems: A systematic review and meta-analysis. Sleep Med Rev. 2015 Sep 9;29:52-62
7. Cognitive Behavioral Therapy as an Adjunct Treatment to Light Therapy for Delayed Sleep Phase Disorder in Young Adults: A Randomized Controlled Feasibility Study. Behav Sleep Med. 2015 Aug 5:1-21.