Composure

SONIC SLEEP TREATMENT

Research Study Summary

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Introduction

In the summer of 2021, Composure engaged in a research study, developed in cooperation with The Center for Health Design, within a newly-built memory support building of a leading Life Plan Community located in Pennsylvania.

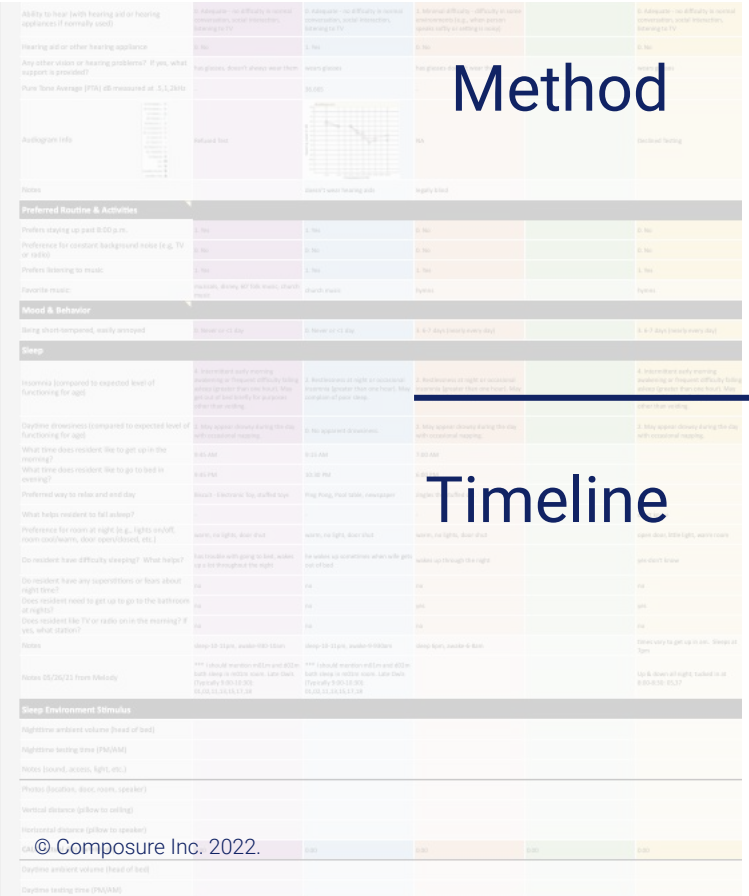
This research included the evaluation of behavioral responses to a curated sonic* treatment developed by Composure that aimed to improve quality of sleep.

The following summarizes the study to provide meaningful insights into its construction, execution and evaluation. Peer-reviewed journal publication of complete study details is pending.

**The term "sonic" refers to a sound-based stimulus.*

Image courtesy of SFCS Architects

Quick Stats



Method

Treatment/Control Groups: **30/30**

Measures: **>100 total**

22 Daily

NOTE: Previously validated tools were used throughout

Timeline

Period: **May-June, 2021**

Baseline: **14 days**

Study: **30 days**

Washout: **14 days**

Problem

Poor sleep performance and insomnia are known and pervasive issues that negatively impact quality of life for memory care residents, and subsequently that of the staff.

Furthermore, prior research suggests the quality of the environment, **including the auditory environment**, is a significant influence on older adult's health and behavioral outcomes, especially those with reduced coping thresholds who are particularly susceptible to environmental overstimulation due to dementia.

Image from: https://www.sleepadvisor.org/wp-content/uploads/2020/05/illustration-of-Stress-and-Sleeplessness-Cycle.png

Hypothesis

We hypothesized that the delivery of a **specially composed sonic environmental treatment**, delivered during sleep, could **improve behavioral outcomes** for individuals living in a long-term memory care setting.

intervention	**Sonic treatment** will
change	**improve**
results	**resident sleep** & **related outcomes**.

Outcome Assumptions

Based on previous research and our collective professional expertise, we identified **5 types of resident outcomes** that we believed would improve if sleep were also improved:

- Mood
- Behavior
- Quality of Life
- Functional Ability
- Treatments, Medications, & Precautions

Pixabay - music-for-relax-picture-id637904706.png

Setup

Demographic

Information was gathered for each residents' **ability to hear,** their **preferences for sounds**, any **vulnerabilities for over stimulation**, and **regular daily routines**. This helped determine which residents should be included or excluded from the study.

Technical

Leveraged the capabilities of an existing **IP Speaker System** and **centralized sound management software system** to deliver individualized timing and volumes for audio playback to **best suit the circadian rhythms and hearing profile** of each participating resident.

Creative

Decisions for composing the Sonic Sleep Treatment were made based on **input and ideation from key staff members, resident demographics**, **technical capability**, and the overall objective of **selecting and sequencing sounds** most likely to induce calm and restful sleep.

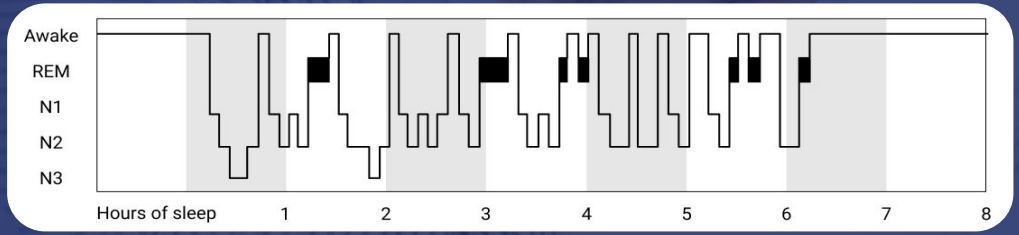
Operational

Processes were put in place to **ensure safety, compliance and success of the study**. Two training sessions were given to staff prior to study launch, and a **protocol was implemented to allow staff to quickly discontinue sounds** in the unlikely event a resident reacted adversely to the Sonic Sleep Treatment.

Sleep and Sound

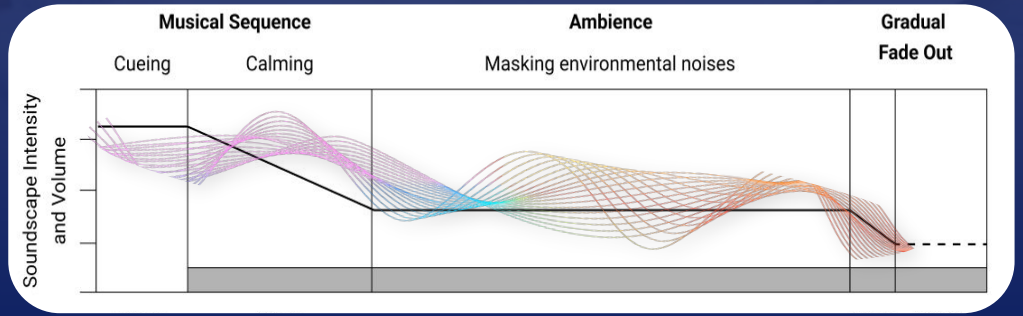
Poor sleep in older adults with dementia is impacted by:

- Natural aging, comorbidities, polypharma
- Lack of cuing and clear transitions
- Over-stimulation, depression, anxiety



Composure has developed a sequence of sounds designed to:

- Cue bedtime
- Calm the mind and body
- Reduce arousal and wakefulness



Execution

Images courtesy of Jeff McSpadden, Composure

Final Outcomes

While there were a variety of improved outcomes, **the first two in the list below** were statistically significant.

1. **Daytime drowsiness**
2. **Cooperation with care**
3. Eating performance
4. Nighttime insomnia
5. Following instructions
6. Bathing performance
7. Rising/retiring activities
8. Bed mobility
9. Toilet use
10. Number of falls

Pixabay - Downloaded from: https://pixabay.com/photos/search/excited%20old%20person/

Principles

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The Center for Health Design

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Thank you

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