Opportunities for Computing to Support Healthy Sleep Behavior

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Overview

Getting the right amount of quality sleep is one of the key aspects of good health, along with a healthy diet and regular exercise. We conducted a literature review and formative study aimed at uncovering the opportunities for technology to support healthy sleep behaviors. We present opportunities for technologies to assist individuals with obtaining and maintaining good sleep habits and reducing bad sleep habits. We present the results of interviews with sleep experts, a large survey, and interviews with potential users that indicate what people would find practical and useful for sleep.



Design Ideas

Sleep Condition Assessment Tool



To help determine the environment's suitability for sleep, the Sleep Condition Assessment Tool uses sensors to measure the room temperature, light, and sound; colors on an alarm clock indicate if the conditions are ideal.

Unobtrusive Sleep Monitoring Clock



The Unobtrusive Sleep Monitoring Clock concept uses a sensor under the bed to estimate bedtimes and wake times. Users can review their overall sleep trends.

Survey Highlights



SLEEP AIDS



WAKING METHODS



SLEEP DISRUPTORS

Sleep Hygiene

Doctors and researchers recommend general tips that help people prepare their sleeping space and engage in behaviors that prepare them physically and mentally for sleep.

Sleep only as much as you need to feel refreshed during the following day

- Keep a consistent wake time and amount each day, 7 days per week
- Do not eat or exercise within three hours of bedtime
 Make sure your bedroom is comfortable, free of light and noise, and is at a comfortable, cooler temperature
 Eat regular meals and do not go to bed hungry
 Avoid excessive liquids and alcohol in the evening
 Reduce the consumption of all caffeinated products
 Avoid smoking during the night when you have trouble
- sleeping • Do not attempt to sleep while stressing about problems
- Position the clock so that you cannot see it, as clock watching may cause anxiety
- Do not use your bed for anything other than sleep or sexual activity (e.g., reading, watching television)
- Do not try to fall asleep: if you do not fall asleep within 30 minutes of going to bed, get out of bed and engage in a quiet activity (e.g., reading, watching television)
 Avoid napping during the day

Role Playing Game



Role-Playing Game concept where the player's character only heals when the player sleeps in real life.





Computing for Healthy Living & Learning

Ambient Bedtime Application



To alert the user when it is time to go to bed, the Ambient Bedtime Application concept sends reminders through different channels and slowly dims the lights throughout the home.



