Multisensory Sleep Enhancer and Regulator

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With the increasing number of urbanized people working with shifts and dealing with heavy stresses, the effects of sleep-related problems are greatly amplified. Our project aims to use cheaper and less intrusive methods of curing and preventing the progression of these problems into much serious illnesses. Our ultimate goal is also to help the worldwide dependency on sleeping medications by creating an easy-to-use device that is widely accessible to the public. We do this by tweaking and hacking into the brain's natural sleep-wake cycle, the circadian rhythm by giving the body a combination of stimuli, including visual, olfactory and audio. Two types of tests were done to determine the most effective combination of stimuli. The first test was done in a controlled environment at Hospital Sultan Abdul Halim with the assistance a medical doctor. The volunteer was attached to an electroencephalogram (EEG) machine and put to sleep. After that, combinations of olfactory and audio stimuli were administered via a prototype device we created. The volunteer is given a questionnaire after the experiment. The report acquired from the EEG machine is then analysed. The second test was done asking members of the public on their opinion of using a sensory-dependent sleep regulator. Results on the study confirm, with great certainty, the great effects of olfactory stimuli in both helping them sleep and waking them up. Next, the effects of providing visual cues to the brain was also accepted widely by volunteers, but nonetheless unable to be tested with the EEG machine due to technical issues. Lastly, the inclusion of an audio stimuli was accepted by some users, but others found it mildly disrupting their sleep due to the inability to customize preferred songs.

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