How can the effects of insomnia be mitigated without the use of medication?

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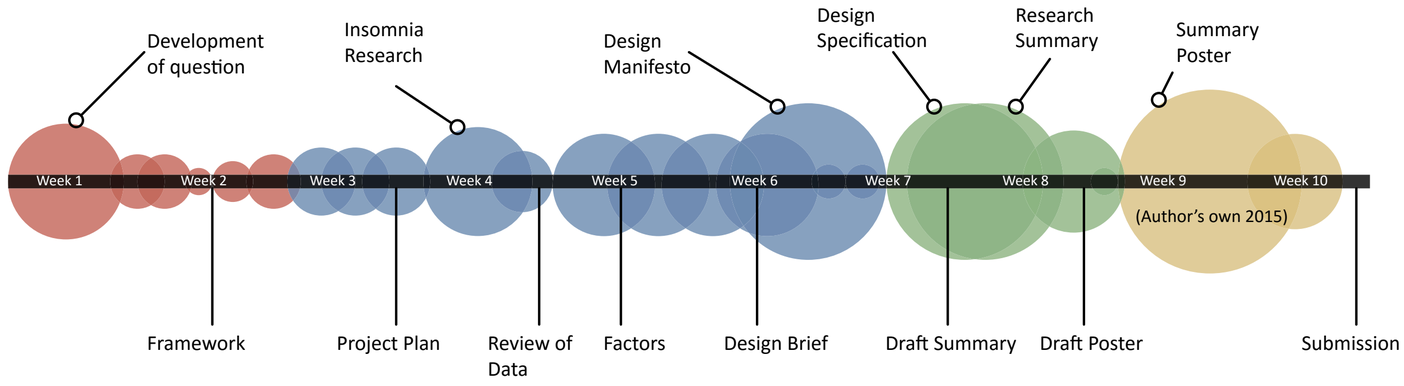
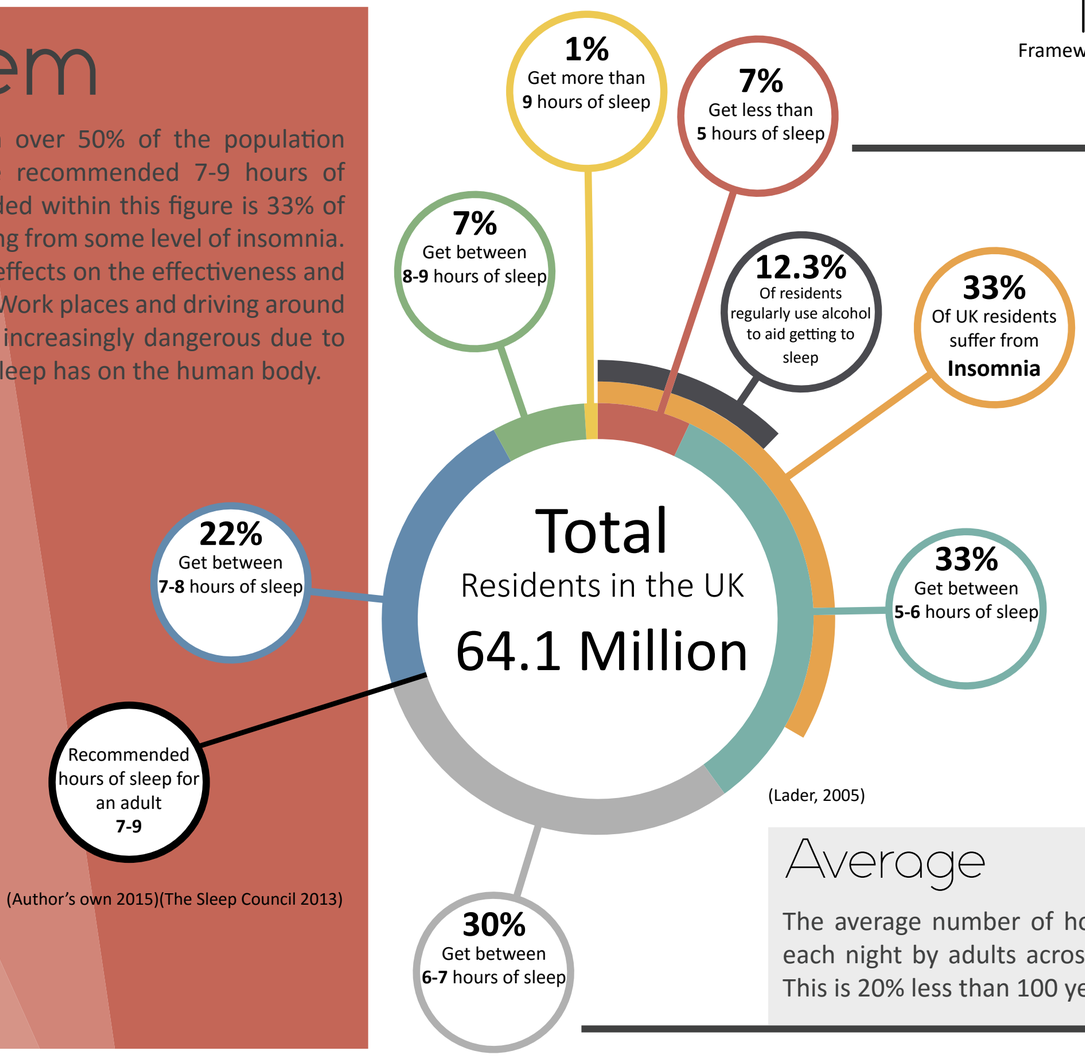
M1541D – Research for Design and Reflective Practice

What are the key areas, tasks and ideals that need to be addressed when attempting to aid a person suffering from insomnia and how can this be done without the use of medication?



Problem

The UK is tired, with over 50% of the population getting less than the recommended 7-9 hours of sleep per night. Included within this figure is 33% of the population suffering from some level of insomnia. This is having serious effects on the effectiveness and safety of our country. Work places and driving around the UK are becoming increasingly dangerous due to the effect the lack of sleep has on the human body.



(Author's own 2015)(The Sleep Council 2013)

(Lader, 2005)

Average

The average number of hours slept each night by adults across the UK. This is 20% less than 100 years ago.

Insomnia

Insomnia is one of the most common sleep disorders in the UK having the ability to affect any one at any age. Most people will be affected by at least one form of acute insomnia at some point in their life.

Just 1 in 10
have consulted their doctor about sleeping poorly

three times this number have taken medication to relieve the problem

(The Sleep Council 2013)

Risky Business

UK statistics suggest that around 20% of major road accidents are due to lack of sleep (Gov.UK, 2015). This is hardly surprising as "moderate sleep deprivation produces impairments in cognitive and motor performance equivalent to legally prescribed levels of alcohol intoxication" (Williamson, 2000).

Drowsy Driving leads to
100,000 police-reported crashes each year

60% of adult drivers have driven while drowsy
37% of adult drivers have fallen asleep while driving

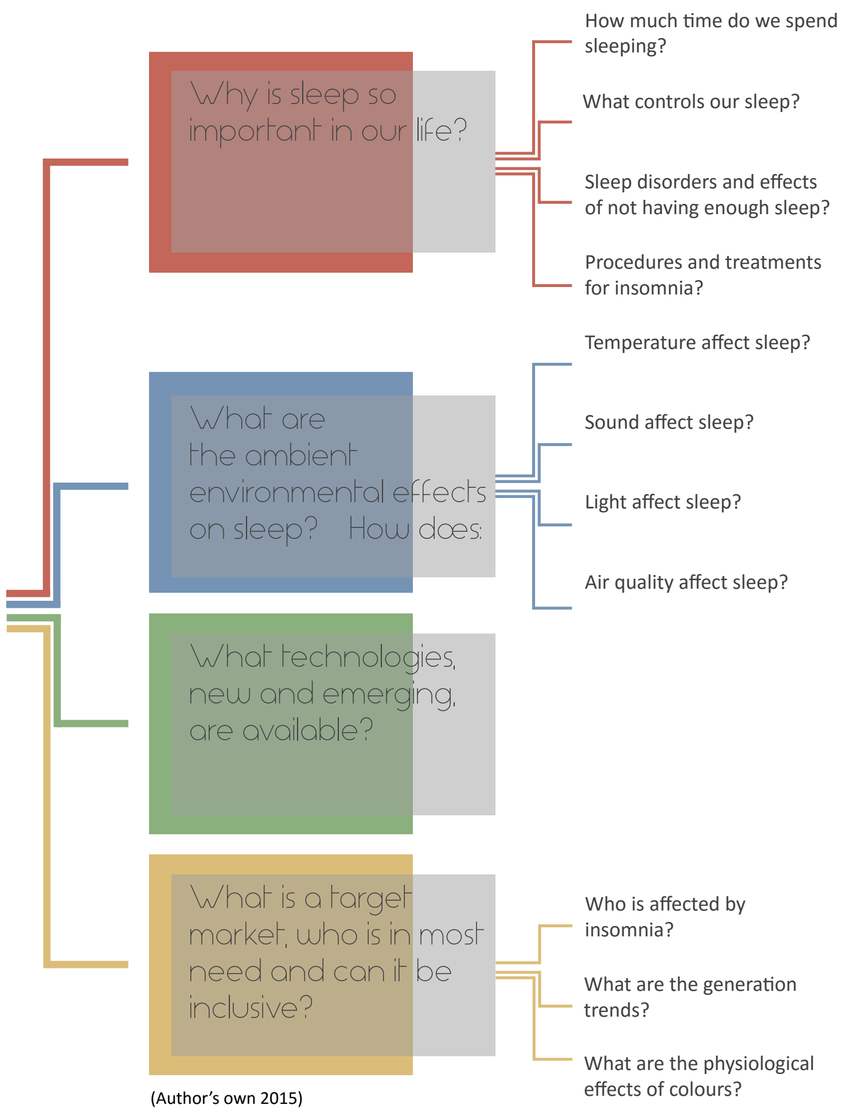
(Drowsydriving 2015)

Research

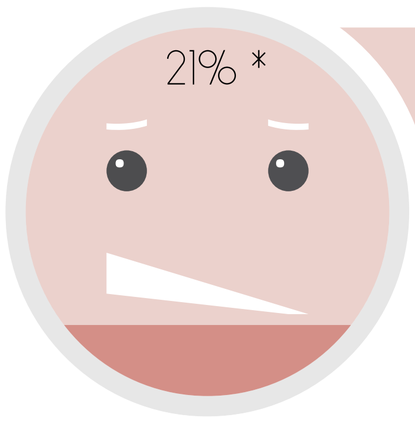
Professional interviews were used alongside focus groups and questionnaires to gain a wide breath of knowledge and really dive deep into the field, exploring both the NHS's treatment options as well as insomnia sufferers' own methods and actions. Profiling was used to help create a number of personas based on the focus groups that helped with defining an age demographic in addition to constructing a list of trends and design constraints. The foremost issues affecting the subjects' ability to get to sleep were their attitudes towards sleep and the effects the surrounding environment had on helping them relax, with adverse sound, temperature and light playing the key roles in the inability to do this.

> *We encourage patients to look at their lifestyle including their drinking and sleeping habits, as well as simple things such as how restful, dark and quiet their bedroom is, including the need for a good bed!*

(Dr Hale 2015)



(Author's own 2015)



(Author's own 2015)

Insomnia

* of Insomnia sufferers tended to have worse attitudes towards sleep, often seeing it as a task and not as a way to relax

Comparison of the attitude towards sleep

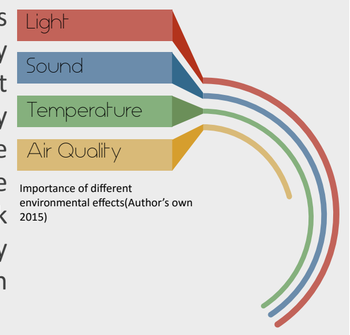
Interviews were done to compare the attitudes between people with insomnia and people without. The pictorial representations depict the score the participants gave when rating their attitude towards sleep: 0% being that they completely hated the idea of sleep and 100% with sleep being something that was eagerly anticipated. Insomnia sufferers averaged a score of 21% with comments on how they disliked the prospect of sleep. Non-sufferers averaged 83% with more positive attitudes towards sleep. (0% = very poor, 100% = Excellent)

No Insomnia

** Of non-Insomnia sufferers had more embracing attitudes towards sleep

Sleeping Environment

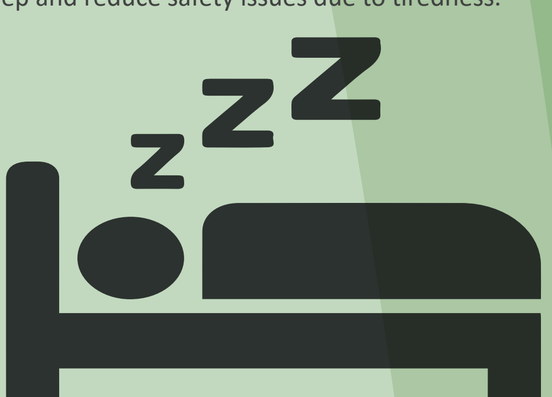
A literature review established that the sleep environment is hugely important to both the quality of sleep and the ability to get to sleep. Light, sound and temperature playing the most important roles in the immediate time-line, and air quality having a more gradual effect. Key points were to reduce the exposure to light (especially blue LED light), reduce noise levels/ reduce the differences between baseline and peak noise levels and keep the temperature of the room slightly cooler as this helps the body complete its job of cooling down when attempting to sleep.



Importance of different environmental effects(Author's own 2015)

Conclusion

Ultimately this report concludes that a device that can induce a discreet method of suppressing or reflecting these primary adverse environmental effects will help a user transition into sleep. Furthermore by encouraging and promoting the actions of healthy sleeping this will aid with the UK's issue of lack of sleep and reduce safety issues due to tiredness.



Specification

Target Group

- **Ages >18 years:** Not exclusively, the target market is people suffering from primary chronic insomnia. This can affect people at any age however the largest demographic is 21 – 46 years (Appendix).
- **Non gender specific:** Although insomnia has a higher prevalence in females (Appendix) there is still a large percentage of male sufferers, and designing a gender specific product would drastically reduce the effectiveness of the product across the chosen generations.
- **Other health problems:** Many people suffering from insomnia develop further health problems or develop insomnia from an existing health problem. (Appendix) It is important to be aware of the physiological impact of the designed product.

Visuals

- **Light:** The length of wave of light is important to the quality of sleep (Appendix) It is important not to use blue light (due to the increase of brain activity effect) despite its daytime soothing nature. Red light has a negative physiological effect (Appendix) but it much less disrupting and a better choice of colour to use.
- **Colours:** It is important to choose a trending colour pallet. The age demographic suggests that although the selected population requires the feeling of association they also need the option to have uniqueness.

Use

- **Independent use:** The ability to use the product by itself and not to encourage the use of a phone or other electronics with a screen before bed. (Appendix)
- **Simple to use:** Not overly complicated because increased frustration before bed is not going to help the transition to sleep.
- **Not counterproductive:** Ensure no or little other counter productive aspects are active when the product is in use. Seems obvious but it is important not to over stimulate the brain before sleep otherwise it negates the purpose of the product.
  No screen: The use of a light emitting screen would counteract the point of the product and with increased stimulation before sleep.

Technology

- **iPhone/Android:** As the population is becoming more reliant on phones and social connectivity (Appendix) the ability to track and monitor sleep progress would allow for further expansion of the product range.
- **WiFi:** Will allow for the ability to upload statics that can be read by either a phone or computer. This will help them track their sleep progress and if it is improving.

References : Hale, D. C., 2015. Managing Insomnia in General Practice [Interview] (20 11 2015). The Sleep Council, 2013. The Great British Bedtime Report, UK: s.n. Wilde, R., 2015. Sleep Infographic. [Art] (CU). Williamson, A., 2000. Moderate sleep deprivation produces impairments in cognitive and motor performance equivalent to legally prescribed levels of alcohol intoxication. Occupational & Environmental Medicine, 57(10), pp. 649-655. Gov.UK, 2015. Gov.UK. [Online], Lader, D., 2005. The Time use Survey, s.l.: Her Majesty's Stationery Office (HMSO). National Sleep Foundation, 2005. Drowsydriving. [Online] Available at: http://drowsydriving.org/about/facts-and-stats/ [Accessed 2 12 2015].

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