

# Sunlight Project: Contextual Inquiry Summary

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Megan Rawley, Erin Nhan, Reggie Jones, and Evan Leon

## Participants

### ***Subject 1***

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Our first interview was with a male CSE student who was born and raised in Seattle. We conducted the observation/interview in their natural habitat- the CSE labs, obviously. We thought this would be a good environment since it's a basement with no windows for natural light that students often spend up to 8 hours at a time. Our interview took a bit of a different direction than we had expected. What we found to be unique was this individual's outside perspective of the basis of our initial project proposal. He made it clear that our initial proposal would be used for nothing more than a novelty. After further discussing the issue we came to the conclusion that it would be best to make our solution have a more specific scope. The student had lived in Seattle his entire life and did not suffer from Seasonal Affective Disorder. However, the subject did have some experience with SAD as his mother (who is from out of state) does experience the disorder. Because of this, the subject responded very positively towards our proposal of a system focused more on combating SAD instead of simply tracking sunlight/vitamin D intake.

### ***Subject 2***

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Our second interview was with an extreme user; a male Therapist at the UW Counseling Center from Chicago who recently moved to Seattle in July 2014. We met with the subject at the UW Counseling Center where he works. The UW Counseling Center provides short term therapy for UW students regarding any number of concerns that those students may have about their mental health status. Along with the typical psychotherapy offerings that the counseling center has, they also offer Light Therapy to help students cope with SAD and other forms of depression. The entire counseling center has a calming atmosphere in part because of the relative silence and in part because of the weather and nature sounds that played outside the various offices. The subject took us to his personal office to talk to us about the depression in general and showed us the room where light therapy is provided where we spoke specifically about light therapy. Something unique that we got out of this inquiry was the variety of treatments and results. Having seen many cases of depression and mental health issues, the subject was able to answer assumptions we had about SAD that we would not have been able to get from talking to a student.

### ***Subject 3***

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Our final interview was a male INFO student attending UW who experiences symptoms of SAD. We met with the subject in the INFO co-lab located in the basement of Mary Gates Hall. The subject spends a decent amount of time in this lab, and labs like it, for the purpose of group work. He was born in Los Angeles, California and moved to Kent, Washington when he was four years old. Four years ago he moved to Seattle for college and this was when he started noticing the symptoms of SAD. Most of his knowledge about SAD is through internet forums, articles on the internet and through word of mouth. When asked if he had seen a doctor or sought any form of help, he has not because he feels that he has not lost control of the situation. Something unique that came out of this inquiry was the subject's insight on dealing with SAD. To reduce stress, he enjoyed jogging and even walks to class which takes around 20 minutes. For his jogs he liked using an application called "Runtastic", which tracks running and one part that he found useful about it was the audio feedback after every mile. From this we asked what features he would like to help him manage stress and SAD. Some of the topics included; having a good enough break in the middle of the day, more control over his busy schedule, and monitoring his time indoors

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because he has trouble dealing the lack of light and cold, which causes him to want to stay in bed longer and not go outside.

## Themes

The first subject's interview suggested that our original intended solution may not make for the most interesting app or device because not only are a large number of people ignorant of vitamin D deficiency, but an even larger number of people probably aren't interested in their vitamin intake. This is supported by the fact that while the symptoms of vitamin D can be extreme including depression, heart disease, obesity, and even cancer, these symptoms usually come with their own set of symptoms that do not present themselves until it is too late to fix with a simple increase in vitamin D intake. Basically, people don't care about vitamin D deficiency until it becomes serious because its symptoms go unnoticed until that point. Subject two effectively confirmed this by describing the most common symptoms that people hope to treat with light therapy as general sadness, loss of interest, and sleep trouble. The third subject also described his most noticeable symptom as "losing interest in the world" which solidified for us the fact that people care more about their mental health than the physical consequences of vitamin D.

Subject three also gave some interesting insights into when the symptoms of seasonal depression are most prevalent, aside from the simple fact of being winter. He noticed that elevated stress levels often lead to symptoms of SAD. Examples of these situations are days where he's spent many hours in a row studying, when he has to go from one meeting to another for several hours in a row, approaching deadlines, etc. Our extreme user, subject two, also spoke a lot to the fact that stress can play a huge role in the onset of SAD and depression in general. Both of these interviews suggested that better stress management could decrease SAD symptoms.

Another area that was common between the subjects was the issue of education and knowledge about symptoms and treatment. Subject two had pointed out that a small percentage of the university knows about the counseling center and the treatments that they provide. Subject three reiterated this because he had never heard of light therapy and one of the reasons that he has not sought advice is because he is not informed enough to decide when he should seek help. One of things that the subjects pointed out that is useful is understanding what tasks they are doing or can be doing more of that are useful in helping treat SAD for them. Also monitoring signs of worsening symptoms can be helpful as well because most users are not usually aware of things they are doing and having some feedback and outside guidance can help them take the next step in trying to gain better and more useful treatment.

## Task Analysis

### *Who is going to use the design?*

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With up to 1 in 4 people living in latitudes similar to Seattle suffering from Seasonal Affective Disorder, we think there is a large range of potential users in that group specifically in the Pacific Northwest where the winter is dominated by gray looming clouds and constant rain. Of the 3 contextual interviews all 3 either suffered from or knew someone who suffers from SAD. We also think that there could be another

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decent number of users who come from a place of wanting to help someone they know handle SAD, as well as from just wanting to be aware.

## ***What tasks do they now perform?***

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Many people combat seasonal affective disorder in a variety of ways such as light therapy, professional counseling and psychotherapy, taking vitamin D supplements, or even antidepressants. Those who manage to self mediate their SAD symptoms do so through stress management and organization, seeking out social activity, and even participating in physical activity. In extreme cases, people may even move to a sunnier region.

## ***What tasks are desired?***

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All interview subjects expressed interest in seeing how much sunlight they receive per day, which allows for self comparison of exposure rates to SAD symptoms. The subjects also showed that better stress management could do their SAD symptoms a world of good. The two of these concepts combined could be used to provide feedback to the users on their sun exposure and give them suggestions on how to supplement low exposure.

## ***How are the tasks learned?***

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Our extreme user interview with subject two really emphasized the difficulty of SAD treatments because there are so many external variables that there is no one size fits most treatment. Because of this, tasks regarding how to handle SAD symptoms are learned primarily through exploration and experimentation. The more self mediated tasks are typically learned through internet articles and forums, word of mouth, and expert advice through some non-in-person medium. Some tasks are simply found by the patient to be helpful.

## ***Where are the tasks performed?***

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Task performance areas can range from doctor's and therapist's offices, to a users bedroom, to the gym, to public venues in general. SAD doesn't hang out in any one location, it follows people around wherever they go, and so must the tasks to handle it. One system to combat SAD involves keeping your doctor up to date on how well you are accomplishing what they prescribed, and how effective that seems to be. This is usually done via phone, but could be done in-person and through email.

## ***What is the relationship between the person and data?***

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There are a few pieces of data to consider. First, the amount of light received. The relationship here is quite simple- how much light, usually measured in lux, did the user receive that day. A second set of data to be considered would be their happiness rating for each day so that the user is able to see a correlation or general trends between light and how it affects their happiness. Also included in that set of data would be any additional remedies they are using besides light to combat their SAD. Having this will empower the user to use the data to further make changes in his or her life to increase their happiness. That being said, it might be useful to use the individuals' data to look for trends in SAD remedies.

## ***What other tools does the person have?***

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Most have access to a Smartphone and internet. In certain cases people have access to some sort of light therapy whether it is at a university or simply a personal device they already own. People also usually have access to a stopwatch and the ability to judge their mood on a 1-10 scale, and an excel

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sheet to track those things in, but it is incredibly unlikely that anyone would use such a large amount of tools to track these things. Another set of tools that is integral to treating SAD is the instructions from the doctor; what remedies to do/take.

## ***How do people communicate with each other?***

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Many people who suffer from SAD participate in support groups, whether that is an online group or a physical meeting. However, just as many people choose to keep to themselves regarding their symptoms and attempt to self mediate their feelings. Depression and its symptoms is a personal subject and it takes great deals of time to be on a personal level with someone. When people do manage to reach that level they will talk to their friends and family even if they do not also suffer from SAD. Group therapy might also be prescribed; discussion with doctors and patients at the same time likely provides a unique avenue of communication.

## ***How often are the tasks performed?***

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Most tasks are performed daily. Most people don't mind investing a few minutes per day in exchange for better quality of life, and both mental and physical health. However, because weather is a major player in the symptoms of SAD, if there is a break of sunny weather in the dead of winter a user could do a few days without feeling the need to perform any tasks. Meeting type tasks, however, are performed on a weekly or monthly basis.

## ***What are the time constraints on the tasks?***

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Tasks associated to SAD and depressive disorder treatments in general do not have time constraints in the traditional sense. People who suffer from these are aware that finding the right combination of tasks that serve as their treatment can take large portions of time. There is a soft-constraint of frequency associated with doing treatments and tracking them; since humans have imperfect memories, it is important to semi-regularly record the remedies and treatment effectiveness. Most users currently expect instant access to the summaries of what they have done to combat SAD (their daily sun exposure, remedy adherence, etc.) since currently this is done by just looking at the tracking forms they have filled out. On the other hand, patients getting analysis of treatment effectiveness by a doctor can wait. As can doctors receiving the patient's treatment adherence progress. These exchanges usually happened once a month or longer, at the time of a doctor's visit.

## ***What happens when things go wrong?***

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There must be a delicate balance to this question as mental or physical health "going wrong" usually cannot be solved by technology such as an app or device. These can most certainly be managed and maintained by technology, but when health fails there is no substitute for a professional or some sort of professional assistance. If you think of "going wrong" as simply not fulfilling a task, then our device could assist in the process of remembering by warning the user about consequences or just reminding them that a task usually helps them deal with SAD. It is important that the patient do *something* for treatment, so it could also remind the user of other tasks more persistently if a patient is missing parts of their routine.