alone

Isolation-Relief Lamp

A silent presence that you can feel

Abstract

Alone is, quite contradictory to its name, in fact a tool that helps relieve isolation and increase connection with friends and loved ones. A nationwide survey from Boston University reveals that 83% of college students are struggling with "loneliness and feeling isolated" and experiencing depression and anxiety[1]. The inspiration is derived from "study with me" videos on Youtube and the act of FaceTiming between two closed individuals who can have comfortable silence without feeling the need to talk to feel connected. The understanding of knowing someone is within reach can create presence where there's none. The lamp is meant to be used in pairs or more, connected to each other wirelessly. When the user is feeling lonely, the lighting has the effect of literally "brighten" up their mood as it elicits a biological response to light at night when one tends to retreat to their personal space and most likely to feel isolated. I developed the lamp through an multi-steps design process that starts with user research to define needs and then iterative prototyping to create a product that has the highest usability. From this design, I hope that other designers can further explore this rather unacknowledged need of young people and the general population post COVID-19. Even though the design is developed for the target demographics of college students, it can be also be used by others. The idea of "silent presence" merits exploration to develop other iterations of Alone that match different needs and environments. Being alone is something that everyone encounters on a daily basis, but it does not need to be an entirely negative experience (it's why we put the smiley face into the name!).

[1]McAlpine, Kat. "Depression, Anxiety, Loneliness Are Peaking in College Students". The Brink, Boston University Research Publication. Feb 17, 2021. https://www.bu.edu/articles/2021/depression-anxiety-loneliness-are-peaking-in-college-students/

Observations:
The simpler the design is better because the more sophisticated prototype confuses the user of its intended function.

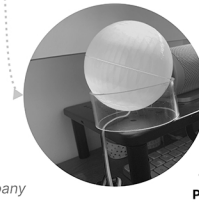
Rapid Prototype 1.0

Rapid Prototype 2.0

Key Takeaways

The "tree of love" design with multi-branched heart shaped lamp is confusing and requires explanation.

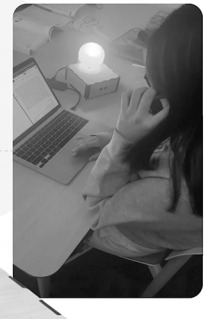
→ Return to the initial spherical lamp design, replacing the physical shape of a heart to a more symbolical sensation of glowing/dimming light = heartbeat.



Testing Prototype

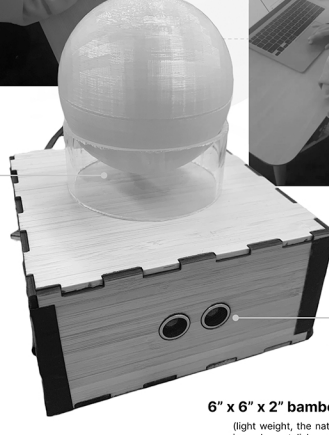
"Watching the light fades is strangely relaxing"

"Knowing someone is keeping me company makes studying so much less lonely"



Audrey

Anne

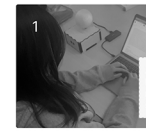


light ball
(3D printed ball containing LED bar)

ultrasonic sensor
(detect motion within 15" and triggers the lighting)

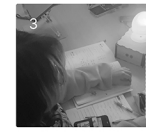
6" x 6" x 2" bamboo box
(light weight, the natural wood pattern is modern, stylish and calming)

Role Play



Audrey is studying alone in her room at night. The room is dark and she feels stressed out and isolated.

Her lamp suddenly lights up, drawing to her attention that her friend, Anne, is nearby her lamp and also studying.



Anne notices that her lamp lights up as the other side senses and picks up Audrey's motion.

Audrey gives Anne a call and they chat about their day. Audrey feels a lot less lonely after their talk.

Design Process

1 Mindmapping

The concept of "Isolation" was explored using the mind mapping method: asking the question of When?, Why?, and How? do we feel "isolated" + existing solution space.

2 Cultural Probe

Using a mini folding workbook, I explored 5 participants' definition of "isolation" and their associated emotions in common "isolation" contexts.

3 Morphological Chart

I constructed a morphological chart of potential combinations of functions & appearance of the design based on interviews of participants on 10 initial rapid foil prototypes.

4 Prototyping

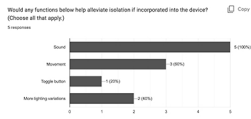
Stage 1: Rapid prototyping with foil
Stage 2: Mid-fidelity prototyping with Grove Kit Arduino for testing
Stage 3: High-fidelity prototyping with laser cut wood and 3D printed model (Arduino core incorporated)

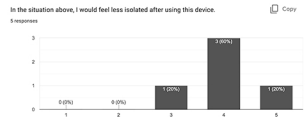
5 Evaluation

I evaluated the prototype on 2 criterias (User Experience and Usability) using Google Forms surveys.

UX Survey

The respondents are all females, age ranged from 18-20. The survey includes both quantitative and qualitative questions, allowing the participant to both quickly register their satisfaction using the Likert scale and also provide a short elicitation in short answer fields that can provide more insights.





The lighting is particularly engaging for the participants and the majority indicates that it helps relieve isolation, although most would prefer a less harsh shade of color of their preference. The participants find the lighting a nice ambience and does not interfere with their task at hand.

System Usability Scale Study

SUS: **82.5**
SUS Range: **75 - 96**

Best aspect of this prototype:

- The shape is very cool, definitely a modern and intriguing design that fits for decoration
- The diffused lighting creates a nice ambience without interference

One thing you would improve:

- Being able to change the color would be nice
- It pauses a bit too long in middle, maybe make it smoother
- Maybe some way for it to be more responsive, the motion sensor doesn't respond sometimes

Errors identified:

- There was quite a significant delay between the fade in and fade out of the lamp, causing the user to wonder if there's something wrong
- The mechanism of motion sensor is yet completely clear because I have to hold up the motion sensor vertically for it to detect the motion

Conclusion:

Both errors are addressed in the final prototype by 1) decreasing the delay time so the transition is smoother (although there are some unavoidable pause due to hardware) 2) building the bamboo box that conceals the electronics and keep the ultrasonic sensor front facing so the light can be automatically triggered without intervention from the researcher.

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