



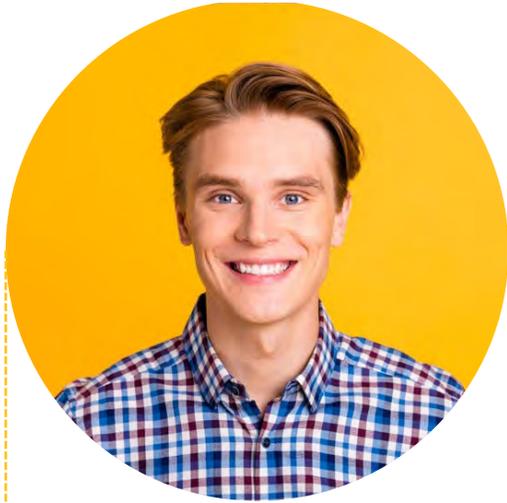
Hit the Lights

Design concepts and evaluation methods 06-12

Link to Video: www.youtube.com/watch?v=rivewetcxzA

06 Personas

Personas show the user groups who may be interested in purchasing and using the device.



Adam Brian, 19

College student majoring in computer science

"All my classes are online this year. I spend 8-10 hours in front of my laptop everyday to write and test codes. I really hope to temporarily escape from my work, and I need some help."

He likes to...



Listen to pop music



Play drums in the band



Sing karaoke



Cathy Dennis, 36

Marketing consultant working from home

"I work from home this year due to the pandemic. My daughter Emily can't go to school either, and I sometimes find her very annoying! Is there anything she can play with so I can have some personal space?"

She likes to...



Go to classical concerts



Watching musicals



Collect vintage records



Emily Dennis, 4

Cathy's daughter, currently in kindergarten

"I feel so lonely and bored because the kindergarten is closed. I often watch cartoon and play games on iPad, but I know it's bad for my eyes. I want to get a new toy that is pretty and fun..."

She likes to...



Play the piano



Play music games on iPad



Dance with the music

07 Role Play

Imagine that you are one of the users of the device. What would happen, and how would you feel from that perspective?



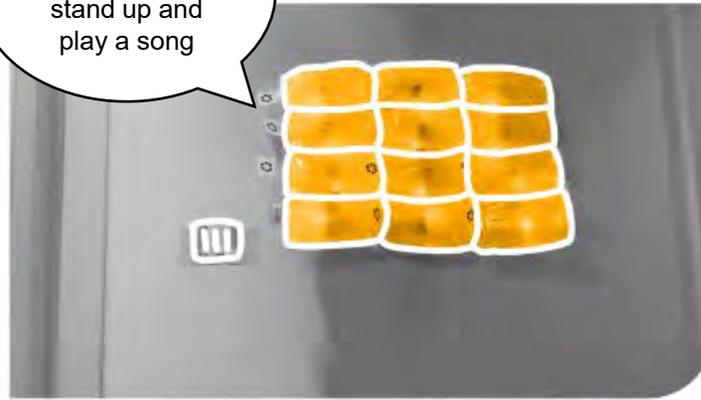
NS role playing a college student working on her essay due soon

“Standing up regularly from the table really helps release my back pain. Also, the ‘Hit the Lights’ games is so much fun.”

I'm writing my essay and I start to feel back pain. Ah, I want to take a break



The device reminds me to stand up and play a song



I start to play a song on my laptop



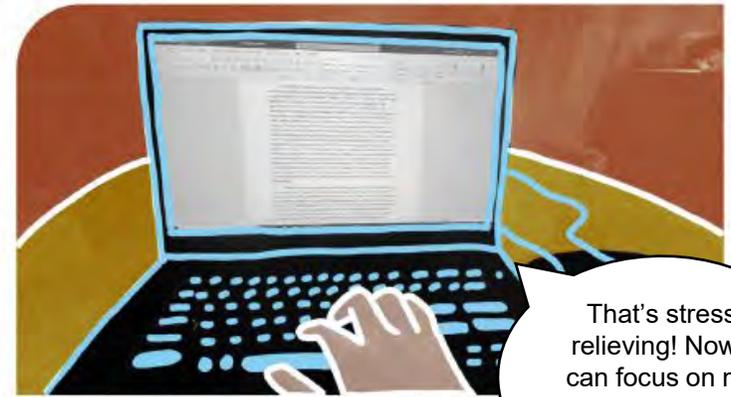
I try to hit all the flashing lights on the device and move my body with the music



3 minutes later, the device asks me to get back and turn the music off



That's stress relieving! Now I can focus on my work with a positive mood



08 Scenario

This is a brief narrative showing how a specific user would interact with the device in a particular scenario.

The user

User's situation 1

User's situation 2

Adam, 19, is a college student majoring in computer science. During the pandemic, all of Adam's classes are online and he is **stuck at home**. From day to night, **he sits in front of the computer** to write and test his code, often **gets tired and stressed out**. One day he browses on Amazon for fun and sees a curious device called "Hit the Lights": it is a **flat board that emit lights of different colors**. Adam receives the package on the next day and follows the user's manual. He **hangs the device on a wall** of his room. As he turns on the device, the device **emits calming yellow lights**. He **sets the timer** on the device to remind him to get up in every 2 hours. Adam gets back to his table and starts to work. 2 hours later, the **device says**, "play some music on your laptop!" **Adam plays** one of his favorite pop songs on the computer, and all the yellow lights on the device **start to flicker and change color correspond to the beat of the music**. The device invites Adam to **hit all the flashing lights**. After playing with the device for 3 minutes, Adam **feels energetic and released** from his prolonged work. Finally, the **device asks Adam to get back to work** and starts to emit calming yellow lights again. The exciting breaktime gives Adam a temporary escape, and he is now able to **concentrate more easily**.

User's pain point

Where?

Device's action 1

User's action 2

Device's action 3

User's action 3

Appearance of device

User's action 1

Device's action 2

User's feeling

Device's action 4

Benefit of device

09 Morphological Chart

This chart shows potential design alternatives of different features of the device. I asked 3 other peers to make a design decision based on their preferences.

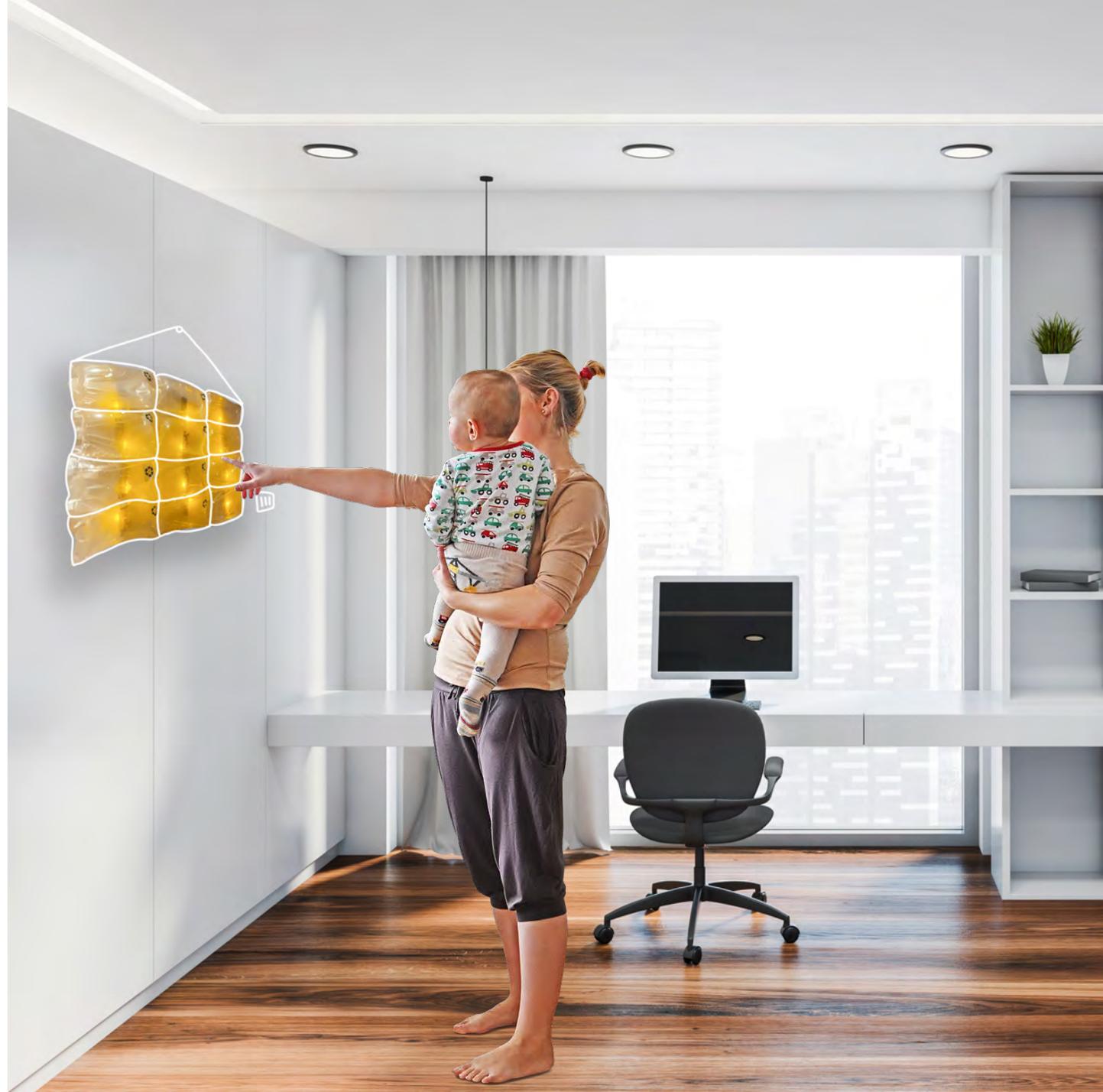
A4+B1+C1+D3+E3+F4+G1

FEATURES	Option 1	Option 2	Option 3	Option 4	Option 5
(a) Dimension					
(b) LED Configuration					
(c) LED Color (Calming Mode)					
(d) LED Color (Music Mode)					
(e) Way to interact					
(f) Material					
(g) Location					

10 Observation

I conducted a 10-minute observation session with my uncle and his 3-year-old son. They did not want to have real photos included, so I used PS to illustrate a similar situation.

- My cousin's **attention was quickly drawn** to the yellow device as he entered the room.
- He was not able to reach the device, so my uncle **lifted him up**
- He **touched and pushed** the device because the airbags were puffy and soft.
- He **noticed the colorful switches and fiddled with them**, which was soon stopped by his dad.
- My uncle **saw the "music mode" switch and asked me what that meant**. I told him to play a song on his phone.
- As the lights on the device started to flash and change colors, my cousin **laughed and waved his arms**.
- I told my cousin to hit all the flashing lights. He tried hard and **got very excited**.
- My uncle also laughed. He asked me if this was a children's toy and **said he would also like to play** with it.
- I explained that this was a device for you to temporarily get up and relax but it looked like the kids love it too. My uncle **suggested that there should be a timer embedded**. I agreed and further explained that this prototype was not fully functional.

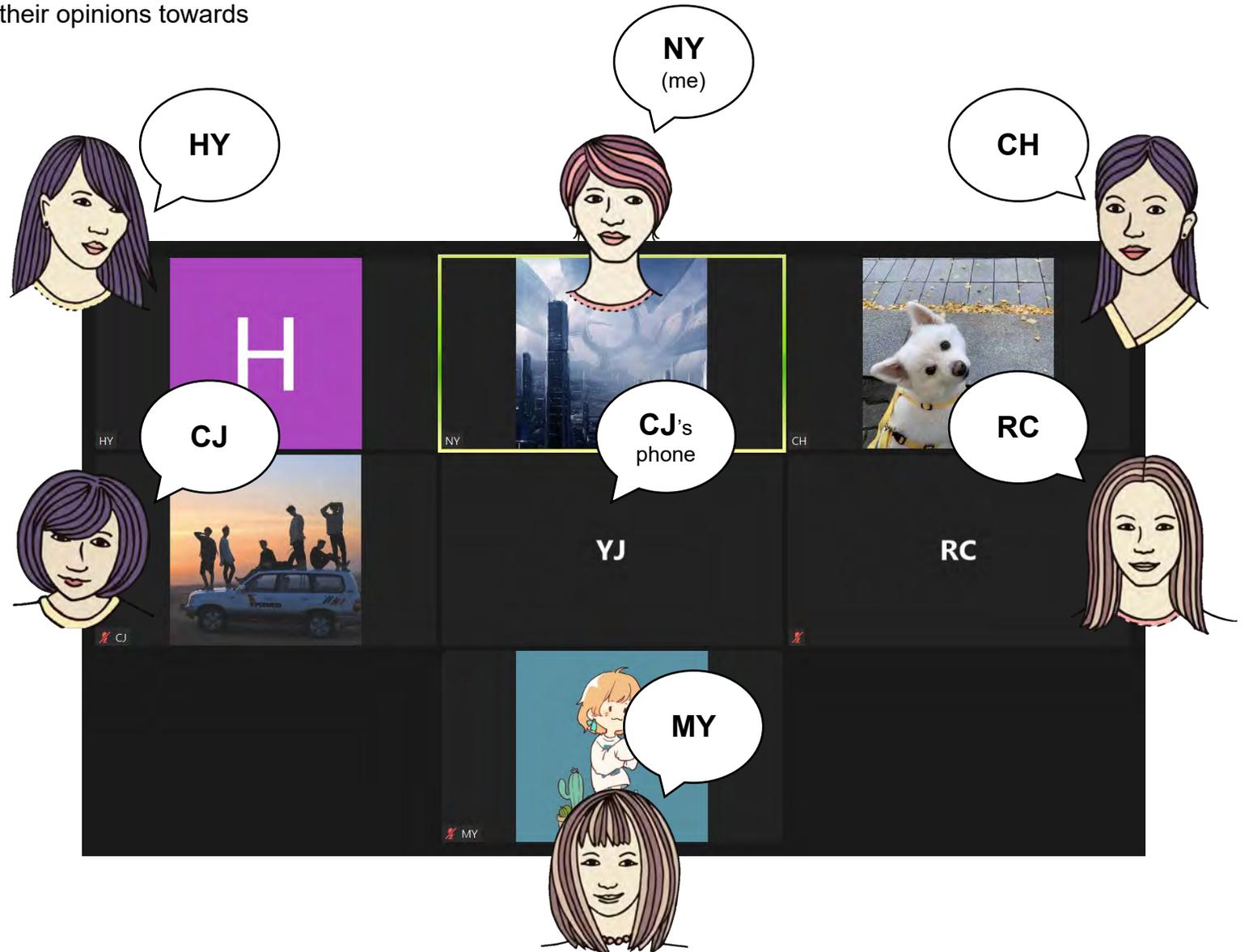


11 Interview

I conducted a group interview with 5 participants via Zoom and showed them the up-to-date prototype. What are their specific needs? What are their opinions towards the device?

Interview questions:

1. During this semester of home confinement, do you sit for long hours to work? What would you usually do during this time?
2. Do you feel physical/mental tiredness due to prolonged work/confinement time? What are some examples?
3. Do you like to listen to music during breaktime? Do you sometimes find yourself move with the music?
4. Imagine yourself playing with this device. What emotions do you feel?
5. When, and how many times per day would you like to use the device?
6. What might be some advantages that this device would bring to you?
7. Do you have any concerns about this device? If so, what would be some improvements?
8. Other than college students, who do you want to recommend this device to?



11 Interview (Continued)

👉 Participants' problems due to prolonged sitting time



👉 Participants' feelings imagining they are playing with the device

👉 Quotations from the interview that I find the most helpful



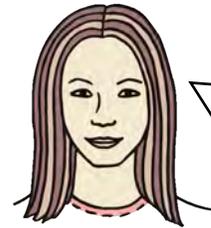
CJ

From the video it looks like the 'Hit the Lights' game stops before the song ends. I think that would piss me off! I hope I can play until the song finishes.



CH

Wow, the game looks very exciting and energetic! I'm unsure if I can always get back to the working mood after I play with the device. I hope it can also have a "meditation mode" for me to just calmly relax and temporarily get away from my work.



RC

I may not play the 'Hit the Lights' game every time it asks me because if I'm in the middle of working on an emergent due, I won't be patient enough to play the game. But I think walking to the device and turning it off regularly helps me form a good habit.



HY

I'm not sure if the device can release my eye strain because the lights are very colorful and shiny! I agree with CH that it may help if the device can have a "meditation mode" that leads you to calm down and relax eyes.

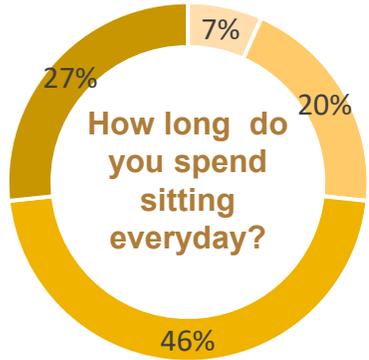


MY

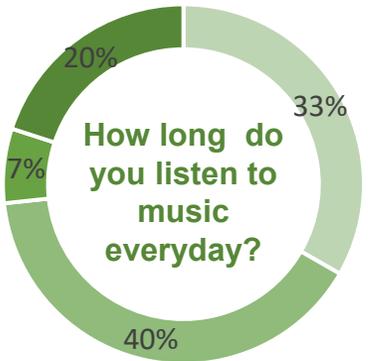
I think this device is multifunctional and it can be shared between family members. Little kids may find the game very interesting, while parents may think the timer feature extremely helpful.

12 Survey

I created a google form survey to ask about users' needs and experience with the device. I received 15 responses from my peers. What did the people say?

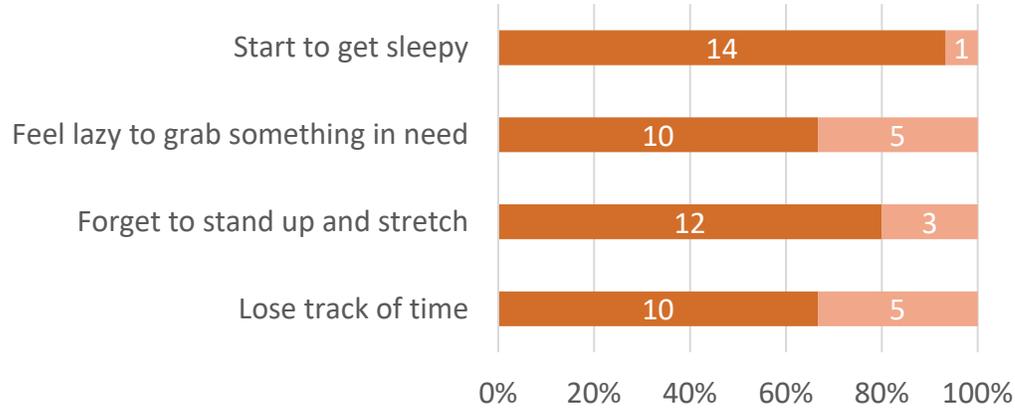


0-3 Hours 4-6 Hours
7-9 Hours 10-15 Hours

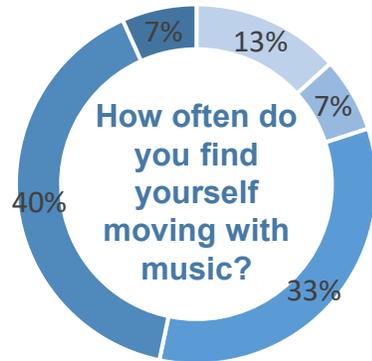


0.5-2 Hours 3-5 Hours
6-8 Hours >8 Hours

You are having these bad habits due to prolonged sitting...

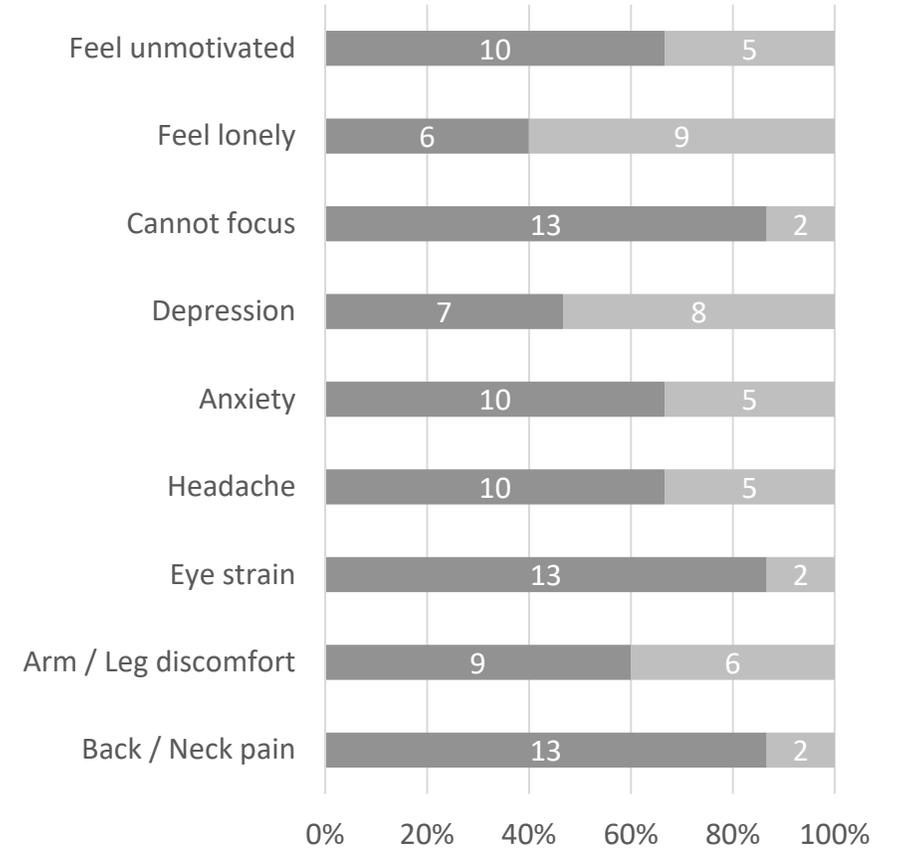


Yes No



Never Rarely Sometimes
Often Always

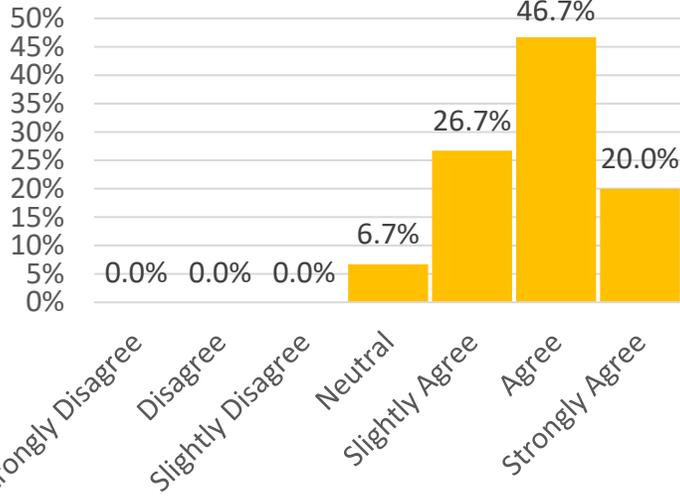
You are having these symptoms due to prolonged sitting...



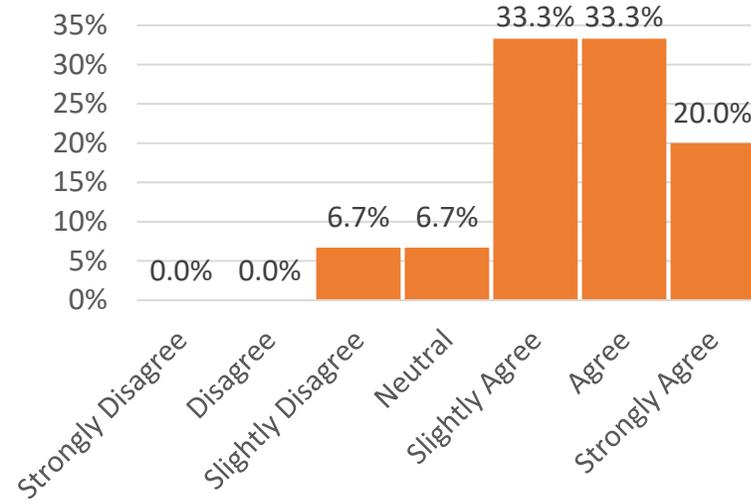
Yes No

12 Survey (Continued)

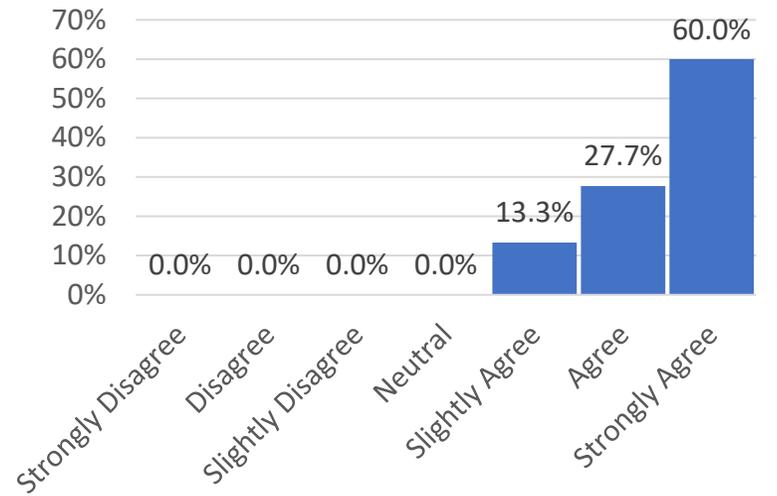
The device is effective as a **TIMER** that helps me to keep track of time.



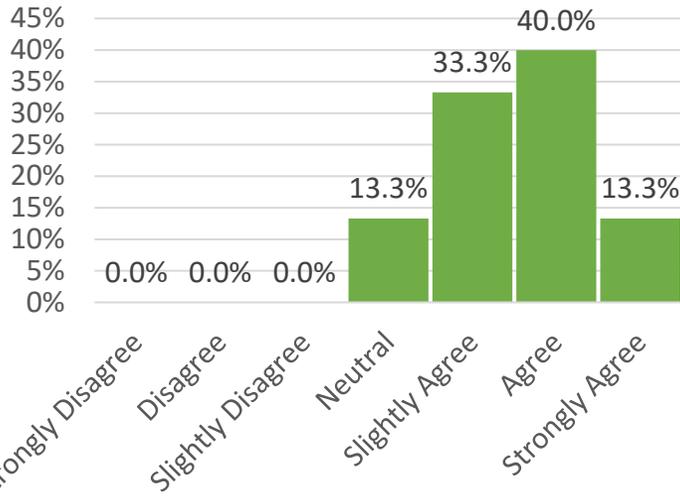
The device is effective as an **EXERCISE EQUIPMENT** for me to stretch my arms and body.



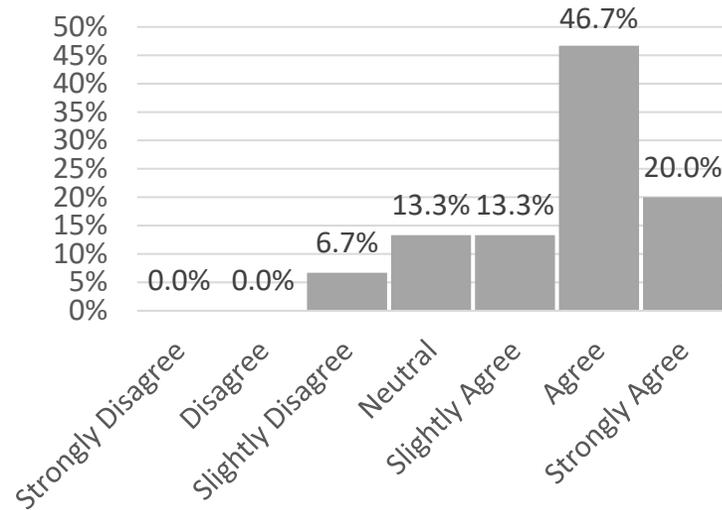
The device is effective to help me form a **GOOD HABIT** to get away from my seat regularly.



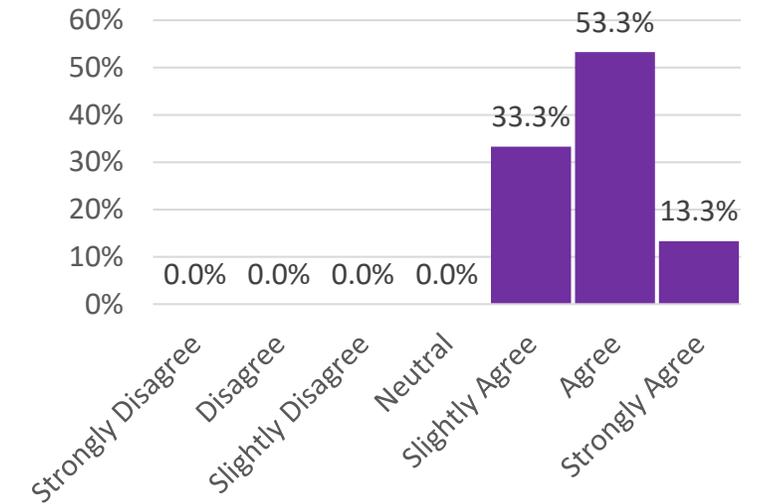
The device is effective to release my **PHYSICAL DISCOMFORT**.



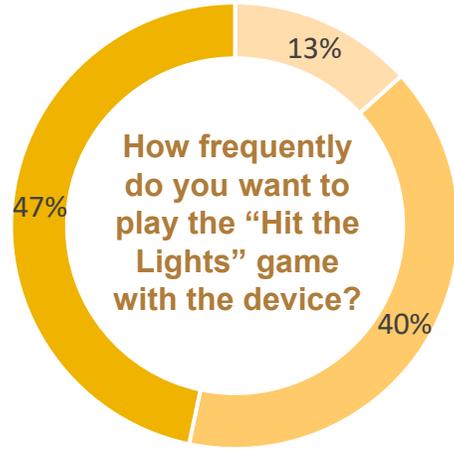
The device is effective to release my **MENTAL STRESS**.



I would recommend this device to others.

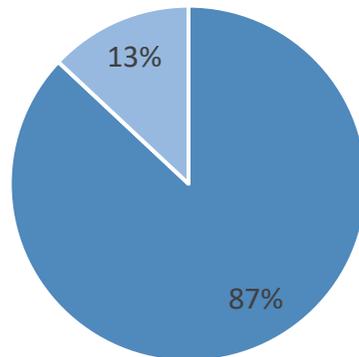


12 Survey (Continued)



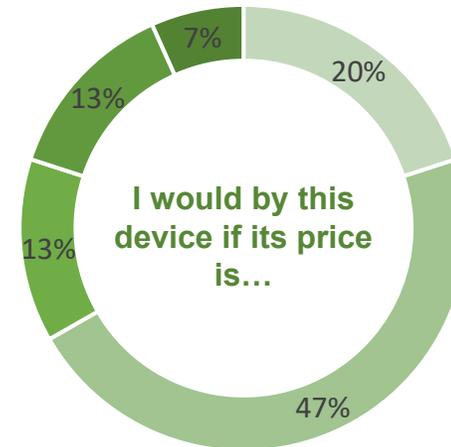
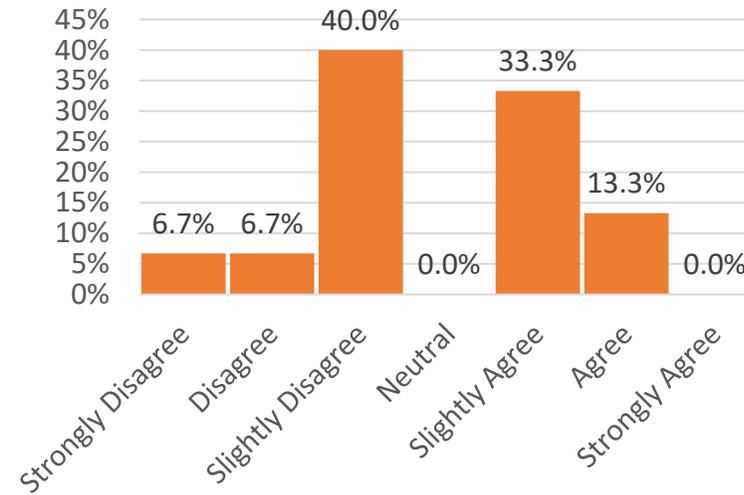
■ 1-2 times a week ■ 1-2 times a day ■ 3-5 times a day

I would also like to have a "meditation mode" that I can play a more soothing song while the lights slowly turn on and off to lead me to relax.



■ Yes ■ Doesn't matter

The "Hit the Lights" game might be too exciting for me to concentrate on my work again.



■ \$10-20 ■ \$21-30 ■ \$31-40 ■ \$41-50 ■ \$51-60

12 Survey (Continued)

Main Takeaways

73% of the participants spend longer than 7 hours per day sitting

100% have formed more than 1 bad habits

100% have experienced more than 1 type of physical or mental discomfort

67% spend more than 3 hours listening to music

87% find themselves move their bodies when listening to music

93% think the device is an effective timer

87% think it is an effective exercise equipment

100% think it helps form a good habit

87% think it helps release physical discomfort

80% think it helps release mental stress

100% would recommend the device to others

87% would play the “Hit the Lights” game with the device for at least 1 time per day

47% have concerns that the game might be too exciting for them to calm down afterwards

87% would like the device to have a “meditation mode” in addition to the “music mode”

47% think the device’s price should be \$21-30