

03 HugMe

Engineering design | Interaction design

Project brief:

This project combines an app and a device design to manage **binge eating** by providing distraction, group support, motivation, and monitoring food-related behavior, while the device tracks binge eating and transmits **care**.

2024. 9 - 2024. 10

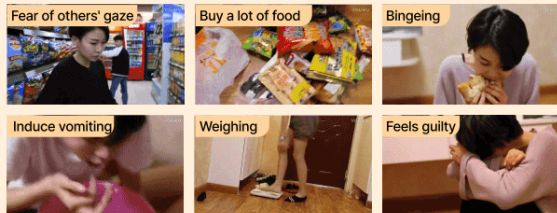
Individual project



RESEARCH

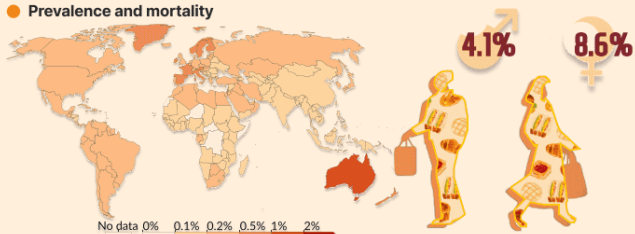
Inspiration

I've **personally struggled with binge eating disorder** in the past, and one time, while watching a documentary on bulimia nervosa, I was reminded of the painful experiences I went through. That moment made me realize how much I **want to help others** facing these challenges, as I truly understand what they are experiencing.



Binge Eating Disorder Documentary: It's Food • Not Love

Prevalence and mortality



Over **3.3 million** healthy life years worldwide are lost yearly because of eating disorders.

Rates of eating disorders in males are increasing at a **faster rate** than those in females.

Understanding Bingeing

Why dieting?

Patients often set **strict rules** regarding the types of food, quantity, and meal times.



Dietary restraint theory

Once any of these rules are **violated**, it can uncontrollably lead to binge eating.

Counter-regulation experiment [1]



[1] C. Peter Herman, The illusion of counter-regulation.

Emotional factors

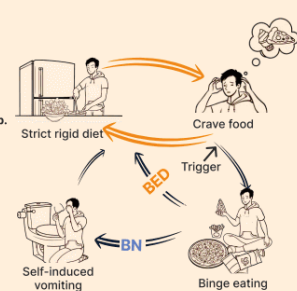
It is also a form of emotional eating. In a study, **47.7% of binge eating** was attributed by the participants to **emotional states**, particularly anxiety related to body image and appearance. Anger is the primary emotion.[2]



[2] A. Zeeck, Emotion and eating in binge eating disorder and obesity.

Repeated loop

Patients follow **strict dieting** while their bodies **crave food**. A **trigger event** causes a **counter regulation**, leading to **binge eating**. Afterward, they return to strict dieting, creating a **vicious loop**.



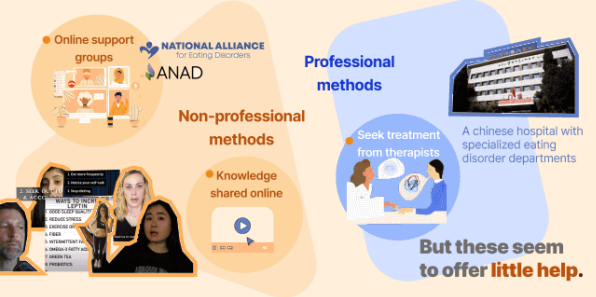
BN and BED

- Binge Eating Disorder (BED) patients **do not purge**.
- Bulimia Nervosa (BN) patients use **purging behaviors** like vomiting to compensate.

These eating disorders are common, dangerous, and difficult to control. When patients become aware of the problem, they seek help from the outside world. So, how effective is this help?

Available help

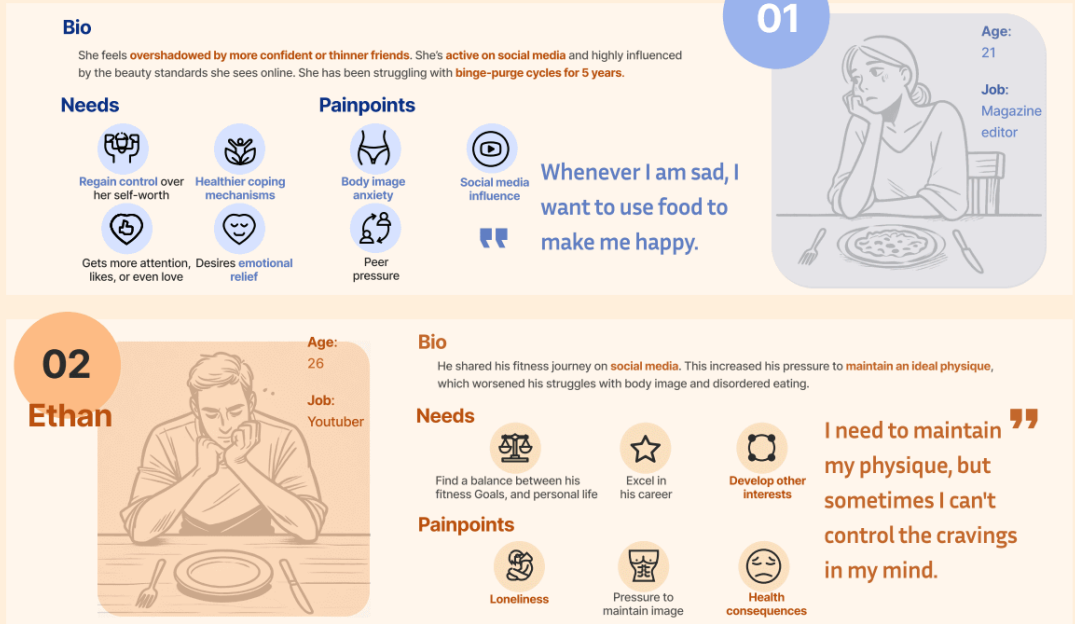
When facing an eating disorder, patients can seek help through two options.



WHY NOT HELPFUL?



PERSONA

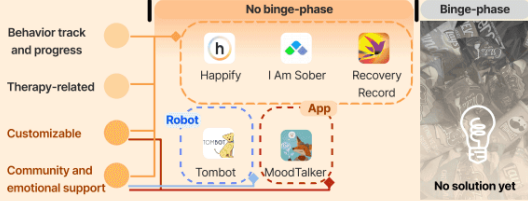


JOURNEY MAP



BRAINSTORM

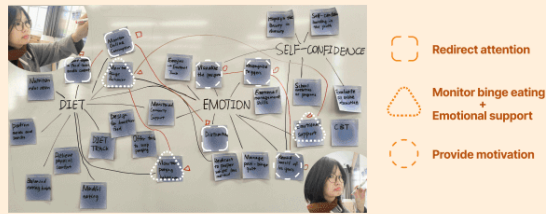
Competitor analysis



I found that existing solutions have not paid attention to the binge phase, so I plan to focus on this point and two key features in the next step.

Ideas

Based on previous research and key points that need to be addressed, I brainstormed some ideas.

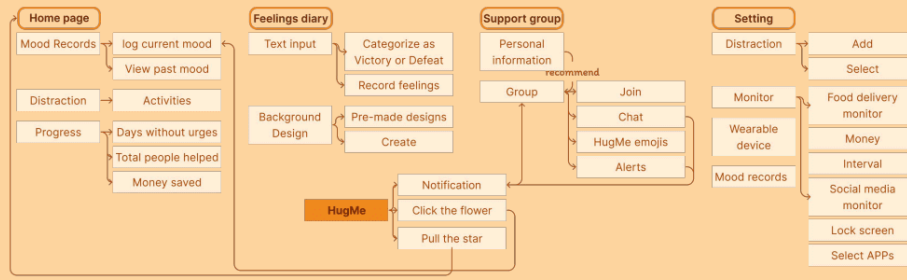


Although the previous 'counter-regulation' and emotional states can help me recognize trigger events to predict binge eating, with the current restraint, I don't have good solutions yet.

So I decided to deprioritize this problem and chose to combine the app with a wearable device, applying these functions to help patients manage binge eating impulses.

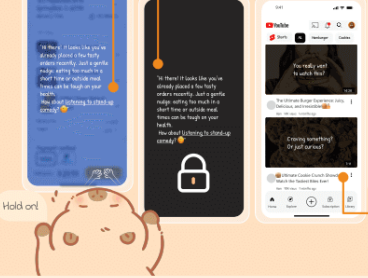
MOBILE DESIGN

Information architecture



Design display

Before users pay, the app sends a reminder or locks the screen to encourage reconsideration.



Break free from temptation

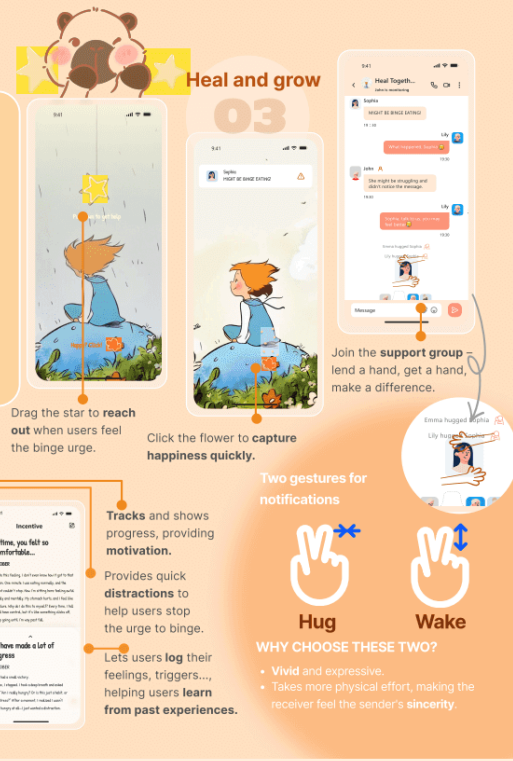
Tailor the app to users needs.

- Mini game
- Apply for monitor
- Food delivery monitor
- Intensity control
- Parents/Friends help
- Stand-up comedy
- Social media monitor

Defeat the urge

Tracks and shows progress, providing motivation.

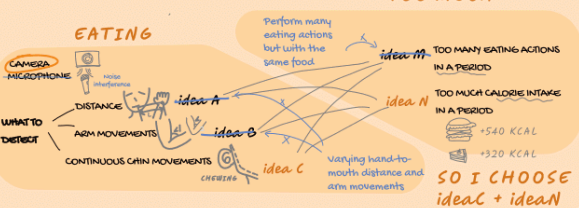
- Provides quick distractions to help users stop the urge to binge.
- Lets users log their feelings, triggers..., helping users learn from past experiences.



SYSTEM DESIGN

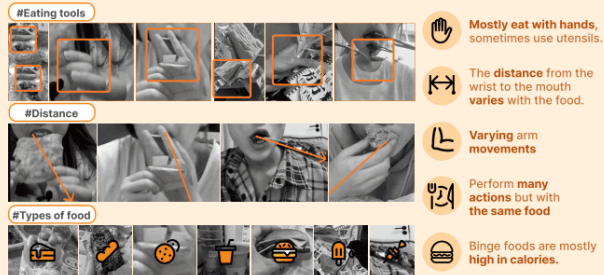
Concept development

HOW TO MONITOR BINGE EATING

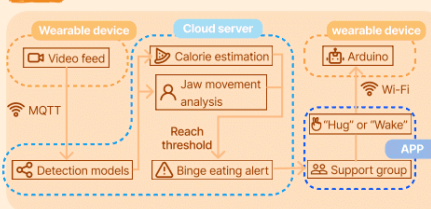


Key findings behind my decision

I browsed videos related to binge eating on social media, summarized the key points, and discussed the feasibility of the ideas based on that.



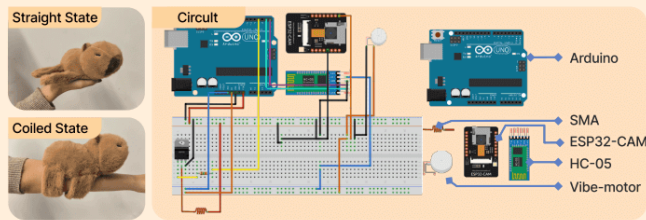
Data flow



Prototyping

Wearable device

Plush toys help regulate emotions by providing tactile comfort, helping to relieve stress. So I choose to modify the cute capybara slap bracelet to monitor, remind of binge eating, and transmit support and care.



Where to put the camera?



What I need to make?

- Modify or build a wearable device
- Think about how the device responds to "Hug" and "Waking"
- Write code to monitor binge eating

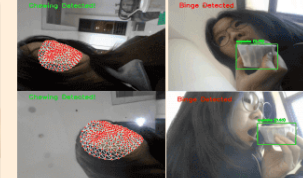
"HugMe" interaction



Part of coding



Run successfully



Feedback and next step

