"Safespace": Tackling the Pain Point of Generalized Anxiety Amongst College Students via Technology

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Abstract

Background

Mental health is a growing concern and emotional well-being is desired amongst college students as many college students express the stress and anxiety that stem from being in a stage of life where they are both a student and an adult for the first time in their lives. College administrations have acknowledged this struggle and have deployed counseling centers and mental health professionals within the campus; nonetheless, a majority of students have not been able to reap the benefits of this system. We have acknowledged that the problem of the inaccessibility of help centers was even worse for the international student body within the Republic of Korea as they were placed in the blind spot; the limitations are of the following: the social stigma of receiving therapy, the constraint of time, the cost of therapy sessions, and the lack of awareness of where these services are located or how these services are to be reached. This project aims to research, analyze, and explore an efficient and creative user interface to mitigate generalized anxiety amongst college students.

Methods

Throughout this project, a variety of user research and evaluation methods were conducted; to understand the user pain points and set our design goals, we gathered both quantitative and qualitative data through surveys, individual interview sessions, focus group interviews, and card sorting. After developing our prototype based on the implications from the user research, we went through an evaluation phase to further enhance our prototype. For this phase, we conducted user testing and a follow-up

interview session, Wizard of Oz, and A/B testing. The user testing and follow-up interview session was conducted to understand the general flow of user experience with our service. The Wizard of Oz evaluation focused on the usage and use cases of the VUI feature. The A/B testing concentrated on the aesthetics and intuitiveness of the UI of the prototype.

Results

The results of our research showed that users needed a service that was free, non-threatening (i.e. non stigmatizing), and confidential. Each user interviewed revealed a new point of view and need for a different and specific kind of service that would benefit their mental health and emotional well-being. Therefore, the team created an app for smart devices entitled *Safespace* that would function as a mash-up of services that would provide a variety of therapeutic and anxiety-relieving techniques: an AI voice/chatbot one could talk to, VR escapism, and a means of "letting go" of one's burdens by writing them down and incinerating them in a virtual fire. Users responded positively to *Safespace* as well as provided key insight and feedback with each iteration and round of user testing. The end result was displayed in the 2020-1 online IID exhibition. *(See Appendix II-k)*

Conclusion

Incorporating the implications garnered from preliminary research analysis, our main focus of the application was the following: intuitiveness, minimalism, ensuring confidentiality, and most profoundly to provide safe userspace for mental stress relief. Throughout the design stages, various processes were undertaken such as the digitization of actual therapy sessions, the creation of unique features, cutdown of inessential functions, and more. The next steps to be taken are to optimize our application design and features to maximize the effectiveness and finalize the application development to publish to the public. Our ultimate goal is to collaborate with the school's counseling center to promote active usage of the service amongst students by providing it as a complimentary service. Further possible development steps include implementing more physical interactions such as haptic feedback, integrating audios and visuals to the VR Safespace to enhance user engagement.

1. Introduction

Global wellness economy is growing at a fast rate. According to the Global Wellness Institute, the industry grew by 6.4 percent annually from 2015-2017 which is nearly twice as fast as global economic growth (3.6 percent annually). Within the diverse categories of wellness, emotional wellness has taken its place as the fourth biggest industry.[1] This high interest has led to the development of the emotional wellness related mobile application market. Especially during the COVID-19 pandemic, isolation and constant anxiety has led people to rely on their mobiles for emotional comfort and connection.

Because there is a large demographic with generalized anxiety amongst college students due to it being a unique phase, we decided to concentrate on users who are in their college years. About 75 percent of people who will have a mental health disorder have their first onset by the age of 25. Especially at the beginning of college years, students may suffer from anxiety disorders such as social phobia, depression, eating disorders, and so on.[2] Therefore, we set our goal to tackle the pain point of generalized anxiety among college students via technology.

Safespace is a mobile application that enables users, especially college students and recent graduates in their twenties, to identify concerns that are categorized as generalized anxiety that is unnecessary. Through thorough user research, we set our design goals and developed our prototype with respect to the goals that we have set. For the last month of our project, we concentrated on gathering user feedback to constantly modify our service and offer better user experience. As the final result of

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[1] Global Wellness Institute (2019), "Understanding wellness: four global forces driving the growth of the wellness economy", available at: https://globalwellnessinstitute.org/
[2] Pedrelli, P., Nyer, M., Yeung, A., Zulauf, C., & Wilens, T. (2015). College students: Mental health problems and treatment considerations. *Academic Psychiatry : The Journal of the American Association of Directors of Psychiatric Residency Training and the Association for Academic Psychiatry, 39*(5), 503-511, http://dx.doi.org.access.yonsei.ac.kr:8080/10.1007/s40596-014-0205-9

our studies, we were able to develop our service into a mobile application that has 3 main functions: 1) an AI voicebot with a customizable personality 2) incorporation of VR technology to provide mental restoration 3) physical interaction with technology for visual catharsis, and 1 helper function: settings.

2. Methodology

2.1 User Research

In order to better understand the problem, specify the design goals, and enhance our prototype, both quantitative and qualitative data were gathered. For quantitative research, two rounds of surveys and one session of ratings were conducted. For qualitative research, two rounds of individual interviews, a focus group interview, and card sorting was conducted.

2.1.1 Quantitative Research

Surveys

1st round: Problem Definition

The objective of the 1st round of survey was to understand the problem in depth. For this purpose, a survey was conducted among 45 domestic students (Korean) and 36 international students, totalling 81 survey participants. The target was focused on english speaking college students; however, we also provided Korean surveys to gather a wider range of data to enrich our understanding of the pain point of possible users. The survey was distributed online through Google Forms as it is a convenient channel for the participants since the questions are accessible with just a click. It was composed of 11 questions in total of a variety of answer forms including multiple choice and ratings. *(See Appendix 1-a)*

2nd round: Design Development

The objective of the 2nd round of survey was to set design goals and corresponding functional and nonfunctional requirements. For this purpose, a survey was collected from a diverse range of population, totalling 74 survey participants. The target for the 2nd round focused solely on the english speaking college students; thus, the survey was provided only in English. The survey was distributed online through Google

Forms for the same reasons mentioned above. It consisted of 10 questions, including 4 demographic questions and 6 informative questions. *(See Appendix I-b)*

2.1.2 Qualitative Research

Individual Interview

1st round: Problem Definition

The objective of the 1st round of individual interviews was to gain a deeper understanding of user's viewpoints on mental health. In order to achieve this objective, a semi-structured interview was conducted during the period of April 9 to April 12, 2020. A total of 10 participants were recruited based on the following characteristics: 1) college student or recent graduate, 2) English-speaking, 3) active usage of mobile devices. The age, occupation, gender, ethnicity, and relationship status of the participants were diversified in order to ensure a comprehensive intake of qualitative data to be evaluated. A total of 20 questions were asked in order to gain more insight into the level and reason of stress, perception and usage of diaries or journals, perception on emotional well-being apps, perception on emotional well-being and campus resources related to it, and perception on technology such as AI and chatbot when it comes to resolving mental health concerns. *(See Appendix I-c)*

2nd round: Design Development

The objective of the 2nd round of individual interviews was to decide on the design goals and specify the necessary functional and nonfunctional requirements. To pursue this objective, a semi-structured interview was conducted on 8 college students or recent graduates of diverse backgrounds during the period of April 24 to April 27, 2020. The age, occupation, gender, ethnicity, and relationship status of the participants were diversified in order to ensure a comprehensive intake of qualitative data to be evaluated. A total of 3 questions were asked to further understand how people relieve stress, helpfulness of reflecting back to past events, and willingness to keep record of them in any kind of form, such as a journal or a diary. *(See Appendix I-d)*

Focus Group Interview

A focus group interview session was carried out on May 4, 2020 to observe prospective user's viewpoints on the design goals and the corresponding functional and nonfunctional requirements at a more accurate level. 4 english speaking university students with diverse backgrounds were recruited. A total of 23 discussion questions were asked. The discussion questions focused on the following: frequency of people's stressful thoughts, different methods people perform to overcome the situation, side-effects from neglection of accumulating stress, possible suggestions to lower stress level, and direct insights related to apply on alternative designs. *(See Appendix I-e)*

Card Sorting

At the end of the focus group session, card sorting was conducted to learn how differently people may categorize 30 items extracted from the focus group session. It was performed via the service OptimalSort. *(See Appendix I-f)*

2.2 Prototype Evaluation

After setting our design goals, we developed a prototype that fulfilled all the functional and nonfunctional requirements we gathered from our previous studies. In order to further develop our prototype, we conducted 4 evaluation methods in total. For user testing and Wizard of Oz, consent forms that allowed usage of the contents (quotes, photos, and recordings) were signed by the participants as the conversations may contain sensitive information. *(See Appendix I-g)*

2.2.1 User Testing & Interview

A usability testing and a follow up interview session on 8 participants were conducted during the period of June 3 to June 10, 2020 to learn about the thought processes of potential users experiencing our prototype and analyze the created benchmarks to further improve our service. The user testing mainly focused on all 3 main functions and 1 helper function to test the overall flow and user experience of the prototype. Moreover, participants were asked to rate each tab with numeric values ranging from 1 to 5 after the user testing. *(See Appendix I-h)*

2.2.2 Wizard of Oz

Wizard of Oz testing was conducted specifically for the usage and use cases of the VUI Sammy tab during the period of June 3 to June 10, 2020. Through this session, we expected to be able to learn how users would interact with the VUI. It was important to see how users intuitively interact with the VUI to gather insights to enhance our prototype. The team acted as the AI and interacted with the participants. Wizard of Oz testing was conducted on the same study participants as the usability testing from above. *(See Appendix I-i)*

2.2.3 A/B testing

Our team originally planned to run A/B Testing on the same 8 user study participants from above. However, we came to the conclusion that, since we were focusing on the aesthetics and overall layout of the application usage, a thorough understanding or an introduction of our service was unnecessary to take the A/B testing. Thus, we transitioned A/B testing into a survey format so we could gather more various insights on a much larger scale. 2 demographic questions and 5 UI related questions were asked. A total of 86 responses were gathered during the period of June 3 to June 13, 2020. *(See Appendix I-j)*

2.2.4 Thinking Out Loud

For user testing and Wizard of Oz sessions, participants were asked to think out loud for our team to understand their thought process in a more comprehensive manner. We aimed to observe the participants' motivation, expectation, and reaction to our prototype.

3. Result

3.1 User Research

3.1.1 Quantitative Research

Surveys

1st Round: Problem Definition (81 Responses)

As a method of preliminary research, our team conducted a survey. 81 responses were gathered and this acted as a guide to the direction of the platform that could gently introduce students to the idea of acknowledging the severity of mental health concerns. *(See Appendix II-a)*

According to the results of the survey of 81 responses from the students, more than ⅔ participants were not aware of the school's counselling center. This clearly indicates the failure of service promotion, whether the students need it or not.

Is there a counselling center in your school?
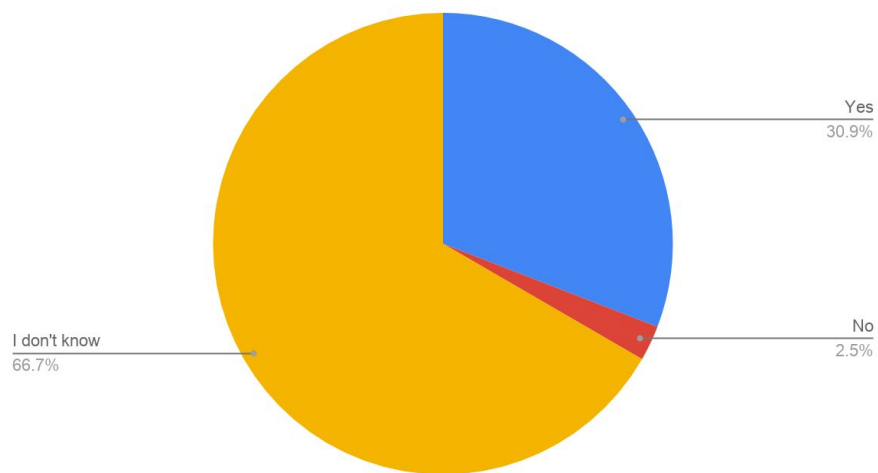
<Figure 1> Students' Awareness of the Counselling Center in School

On the question regarding students' previous experience of concerns about their mental health, the majority of the students responded that they did have concerns. This result, along with the result from Figure 1, shows that there is a need for an immediate action. This is a major problem that the students are in need of help and counselling while they are not aware of the school services.

Have you had any concerns about your mental health e.g. stress, anxiety, low mood?

No
12.5%

Yes
87.5%
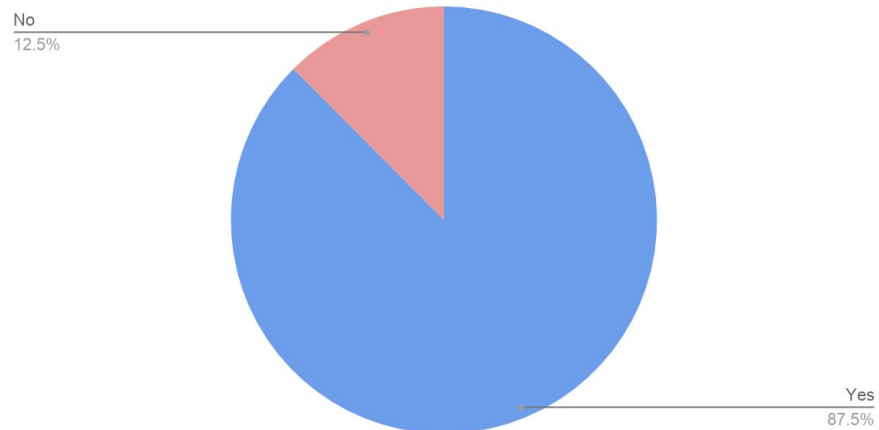
<Figure 2> Students Experience of Concerns for Mental Health

According to further interpretations of the survey result, not being aware of the school centers was not the only issue. When students were asked the reasons why they do not seek help from therapy sessions is because of the social stigma of receiving therapies, the constraint of time, the cost of therapy sessions, and the lack of awareness of where these services are located or how these services are to be reached.

Rank the reasons why you think people don't go to therapy sessions.

Cost
16.1%

Unaware of their issues
22.4%

Inaccessible
19.9%

Social Stigma
21.1%

Time Constraint
20.5%
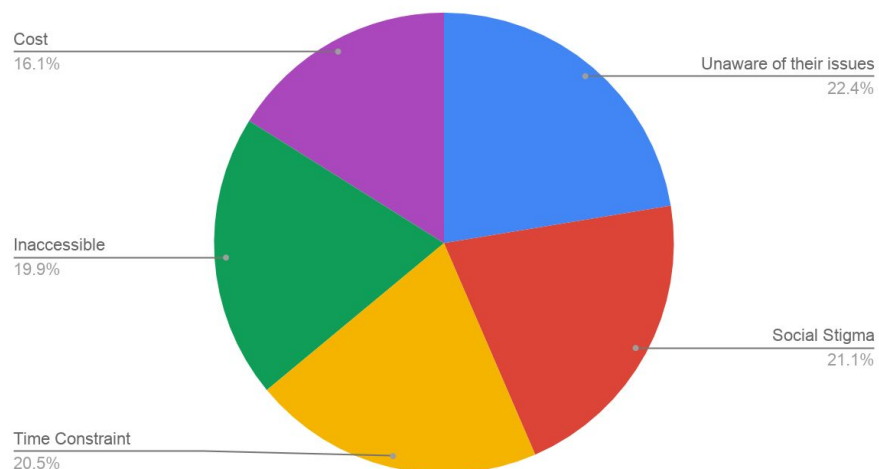
<Figure 3> Reasons the Students Don't go to Therapy Sessions

2nd Round: Design Development (74 Responses, See Appendix II-b)

The findings of the survey from the secondary user research gave more detailed directions on effectiveness of different approaches compared to the results from the preliminary interviews and surveys. More than half were willing to use smartphones (apps) to relieve their stress, and about ⅓ were undecided. From this, we could infer that students do need a type of smartphone service to alleviate stress and we could target not only the majority of participants that are willing to use the service, but also provide a good solution to acquire the interest of participants that are indecisive.

Willingness to use apps that help de-stress
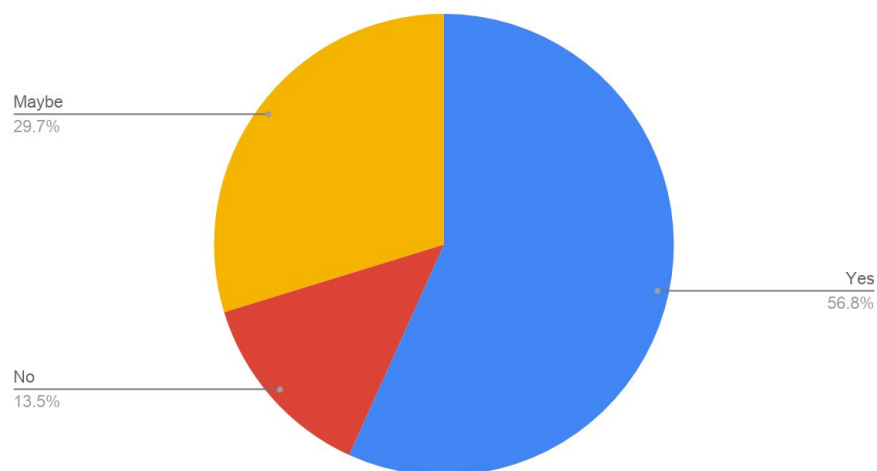
<Figure 4> Students' Willingness to Use Applications for De-stress

When we asked why people potentially use smartphones to relieve stress, some insights we gained are the following: convenient, cost and time efficient, fun and entertaining. However, answers also included some alerting responses such as "addiction" and not knowing or not having access to any other methods of relieving stress. Most importantly, we were able to learn that our initial idea of "burying our worries" was not so popular for visualizing stress-relief. A lot of the participants actually preferred to write a diary, and also provided some other methods of visualizing stress relief such as burning the paper, tearing the paper apart, writing

messages in a bottle and letting go of it, and etc… This information gave us a clearer direction to utilize in further developing visualizations for our prototype.
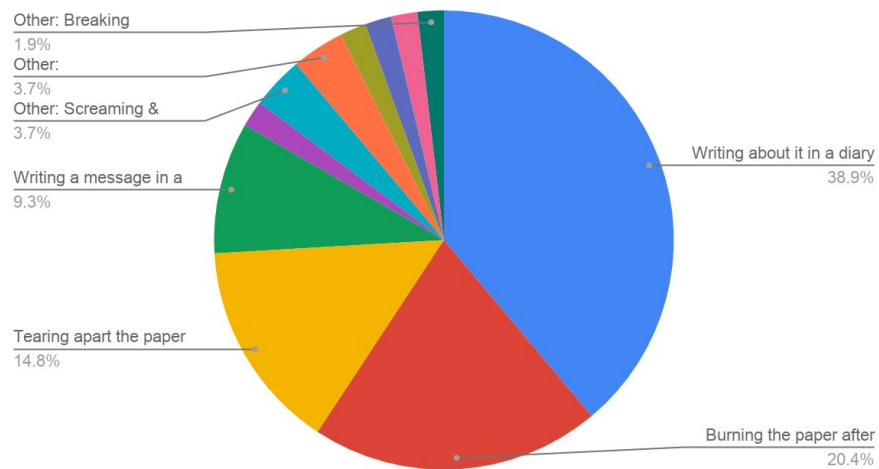
<Figure 5> Visualizing Stress-relief

Ratings (T Test Based on Prototype Evaluation)

Based on the ratings for each features (Sassy, Let Go, VR Safespace, Settings) including overall ratings retrieved from the prototype evaluation, by 8 participants, the average ratings all scored very high which indicates that our team was on the correct pathway of implementing solutions that could potentially solve generalized anxiety amongst college students. The overall average rating of our conceptual application was very high of 8.625, and each functionality such as AI voicebot or Let Go was on a par. However, one of our features, the VR Safespace (7.375), although still high, was more than 1 rating point lower than the average overall rating (8.625), indicating that it had the most room for improvement. *(See Appendix II-h)*

Average Ratings of Each Functions
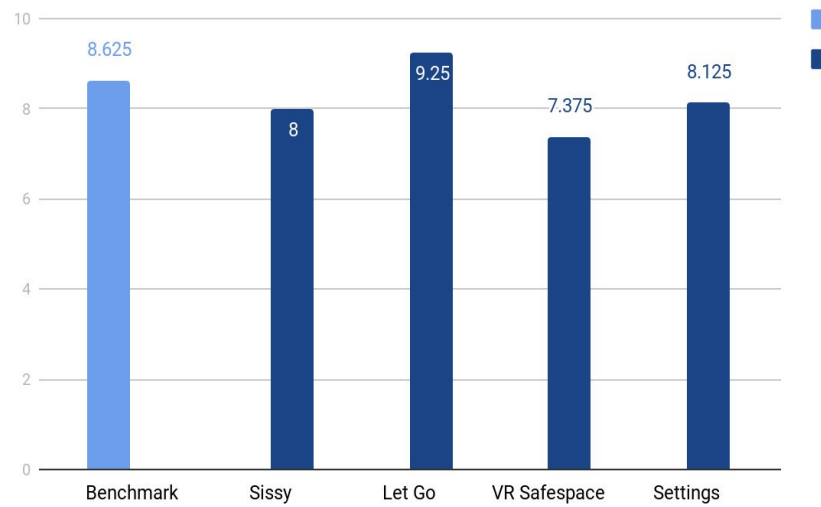
<Figure 6> Average Ratings of Each Functions

Other than just comparing average ratings, we performed a T test to see if there were any significance in between the features and overall concept. As shown in the graph above, it is evident that the high average scores of Sissy, Let Go, and Settings contributed to the high overall score (P-Value > 0.05). However, the Overall score was higher than the VR Safespace score, and at the same time, the two yielded a P value less than 0.05, which contradicts our initial hypothesis in this case. This instance possibly indicates that VR Safespace has not contributed to elevating the overall score. Thus, more improvements should be applied to VR Safespace in order for it to positively affect the overall score.

A (Benchmark)	B (Average Score)	P-Value
Overall (8.625)	Sissy (8.000)	0.159
	Let Go (9.250)	0.063
	VR Safespace (7.375)	0.010
	Settings (8.125)	0.376

<Figure 7> P Values Based on the T Test Results

3.1.2 Qualitative Research

Individual Interviews

1st Round: Problem Definition (10 Participants, See Appendix II-c)

The 10 participants shared the sentiment that the main reason one would not go to therapy nor seek psychological counseling is the inaccessibility of services for the average college student in Korea. The problem of inaccessibility can be further specified into: the social stigma attached, the constraint of time, the cost of therapy sessions, and the lack of awareness of where these services are located or how these services are to be reached. However, despite listing social stigma as a reason people avoid seeking therapy/counseling, none of our participants showed negative feelings towards anyone that has gone to therapy; in fact, a few displayed overwhelmingly positive feelings and admiration for such people. Other reasons participants shared for not going to counseling were anxiety over bringing up issues to a stranger, or the belief that their problems were not severe enough to warrant counseling.

Furthermore, our results showed that our target audience disliked the idea of an AI chatbot service. The most common sentiment shared with our research team was that knowing that it is an AI and not a human, the answers the AI could provide would be shallow and unhelpful. Besides this, a few participants had already used apps like Woebot and had expressed their distaste of the app.

Sentiments towards the use of journals or diaries were similarly negative. Most participants had started writing what they were going through or putting down their emotions in journals when they were younger, but all had inevitably quit the activity once journal-writing became a chore. From this, our team was able to infer that the users would prefer a personalized chatbot if it were to service.

2nd Round: Design Development (8 Participants)

According to the interview interpretations, there was not an obvious path for the questions. For example, when the participants were asked to visualize "releasing

stress," they responded with mixed opinions of non-active (non violent) and active (violent) actions. We concluded that this could be our opportunity to provide students with healthier options such as raising awareness for mental health concerns, keeping track of their life events, and practicing to express oneself. *(See Appendix II-d)*

Focus Group Interview (4 Participants, See Appendix II-e)

During the focus group interview with 4 participants, when the topic of cause for stress was brought up, the participants had a common opinion; participants being university students, a few of many reasons they were stressed upon were from studying, schoolworks, friends, love, and responsibilities. The participants did not have a reasonable method to manage their stress, which led to negative consequences such as deteriorating friendships, constant conflicts with family members, and chain smoking. When they were asked to imagine the effectiveness of sending away worries, the participants responded that the visualization sounds very satisfying, but desired to keep the contents because of privacy concerns. They also thought journaling was a crucial element for self management, and were positive about talking, instead of writing for journaling purposes. Throughout the discussion, it was revealed that all the participants preferred the AI voicebot to have a sassy personality since they thought they could use some sense of humor when feeling stressed out.

Card Sorting (4 Participants)

Card sorting was conducted on 4 participants and on average, each participant took roughly eight minutes to sort all the cards. There was some overlap in the categories they created, such as similarities in sorting the cards labelled "smoking," "dreams/nightmares," and "crying" under categories labelled "Negative Emotions" or "Negative way[s] of coping." *(See Appendix II-f)*

What was revealing was how participants seemed to reach the consensus, without sharing their ideas, that cards such as "music," "memes," or "gaming" were stress relievers, whereas cards labelled "homework" or "exams" were identified half of the time as stress-inducing or as stressors.

No significant outliers in our data collection existed, although with such a low number of participants, our results are in no way indicative of scientifically-correct results.

3.2 Prototype Evaluation

The final prototype (dubbed *Safespace*) consisted of four distinct tabs that served an overarching purpose of benefiting the user's mental state, mental health, and emotional well-being during or after use. The mobile application format for smart devices lends itself to convenient, 24/7 self-care the user can give themselves through use of *Safespace's* functions.

The app itself uses a calming, actionable blue as its primary colour, combined with a complementary pink or purple in a gradient. Together with the Open Sans font, *Safespace's* overall look and feel is consolidated to feel like one cohesive and non-threatening app the user should find aesthetically pleasing.

The prototype for *Safespace* was created and tested in Adobe XD by team members on desktop. The working demo was then downloaded onto team members' phones for participants to use and test with. However, our team did not anticipate the technical difficulties that would arise as users tried to utilize the working demo once it was on a smartphone screen (e.g. trying to tap a button to get to the next screen itself proved difficult).

3.2.1 AI Voice/Chatbot

One of the primary functions of *Safespace* is to provide an AI personality (akin to Siri) that the user can chat with at any time within the app. These conversations can be carried out purely verbally or typed out on one's mobile device in a familiar chatroom-style UI setting.

The AI, formerly named Sissy, is not designed to perfectly replicate nor replace a trained counselor or therapist. As such, it does not possess a neutral tone when conferring with the user -- rather, Sissy has a vivid personality full of "sass" that may offer users some perspective on their situation or give validation on the emotions that they are feeling. However, some users felt that Sissy's personality was too harsh and not helpful, or that the advice she offered was overly negative.

3.2.2 VR Safe Spaces

One function that our team endeavoured to virtually recreate that would make *Safespace* more unique in the realm of mental health apps was a tab that can incorporate VR (Virtual Reality). Inexpensive VR headsets are now available on the market that enable users to cheaply experience and benefit from VR technology. By activating the VR Safe Spaces in *Safespace* and placing their smartphone inside, the user can engage in a form of escapism by simulating another locale, e.g. the beach. However, without a properly working VR demonstration to show, a few users did not understand the point to having these simulated Safe Spaces. Alternatively, some users felt that the VR experience could be expounded upon to be more immersive and therapeutic, for example adding audio tracks (e.g. birds tweeting, waves lapping on the shore) or the option for a guided meditation session within the VR tab.

3.2.3 Let Go

Explicitly derived from our findings from user research, this tab enables the user to write down their negative, invasive, or anxiety-inducing thoughts and then "let go" of them in a virtual fire. Let Go utilizes physical actions from the user's end, i.e. dragging the paper into the fire, shaking the smartphone to 'grow' the fire, and then blowing on the mic to extinguish the flames, Through this act, the user can immediately benefit from some feeling of catharsis, or help set the intent to move on from a painful experience.

Let Go was generally well received by participants in user testing, but our team was informed that the nature of the text on screen looked cluttered and needed to be reorganized.

3.2.4 Settings

The settings tab is where the user can expect to find user settings. Here, the user can set their nickname for how Sammy will refer to them, as well as what voice the system will have (i.e. choose from different regional accents). A dark mode is also provided for low-light conditions.

Some users were delighted to see the option for regional accents, giving our team the feedback that that kind of representation is very welcome, especially to international students. However, we were told the app should include other gendered options for voices as well, rather than just female.

Finally, although it was stressed as a low priority, a few users expressed the desire to be able to pick from other coloured themes as well, in the event they grew tired of the blue/pink colour scheme.

4. Implications

4.1 A more engaging experience with an AI personality

It came up repeatedly in user interviews and in research that oftimes the reason college students (both Korean and International) resort to negative coping methods (e.g. heavy drinking, chain-smoking, etc.) is due to the lack of an understanding support network, or at least one that can be present at all times. Our team deduced that enabling the user to chat with an entity that can simulate an understanding conversational partner could be beneficial for users that are experiencing spikes of stress. Participants also revealed that it was not too helpful to them to feel like they were talking to a "machine," so the Safespace system's AI (Sammy) having a clearly defined personality is key in order to best serve the user. (It also discourages the user from thinking of Sammy as a perfect replacement for a real-life psychologist or therapist, which it is not.)

4.2 A variety of input options to best suit user preferences

As survey results came in and interviews were conducted, it became apparent that users have a wide variety of ways in which they prefer to relieve stress or deal with their troubles. Some prefer to journal (write it down), others prefer to talk about it with someone, and still others tend to gravitate more towards sensory performances that evoke visceral responses, such as breaking objects or listening to guided visualizations -- or some sort of combination thereof. Therefore, we implemented a wide variety of therapeutic techniques into Safespace that can each be interacted with in multiple ways, e.g. using the mic to talk to Sammy or the keyboard to spell things out instead.

4.3 Haptic feedback as entertainment and stress relief

After receiving feedback from the users that many resort to physical interaction to relieve stress, our team decided to test out incorporating haptic feedback (i.e. interacting with the smart device in a manner other than tapping or scrolling on the screen) into Safespace. In particular, we added shaking the smart device in the Let Go tab in order to fan the flames and then blowing into the mic to extinguish the fire to our prototype. User testing showed that participants tended to enjoy this mode of interaction greatly, citing it as "fun" and "stress-relieving," or even audibly laughing as they followed the on-screen commands. User response to haptic feedback was overwhelmingly positive, so it remains a component of Safespace. *(see II-h: Interview transcripts)*

4.4 Preference for familiar interfaces

Users (especially distressed users) do not want to have to deal with a steep learning curve when just starting out with using a new app, so Safespace utilizes plenty of familiar UI that is commonplace. Following this logic, the chatroom with Sammy looks like an ordinary chatroom with text bubbles on the left and right to signify back-and-forth conversation, just as it would look like if one were texting a friend. When our team tested the Safespace prototype with users, there was no profound confusion regarding what each tab of the app was meant to do, and the participants could figure out how the app was meant to work with one trial run of each function.

4.5 Importance of linguistic style

Participants shared the importance of and need for the Safespace system's AI voice (Sammy) to be customizable, in order to best satisfy individual user needs. Some users responded well to Sammy's originally very cheeky personality, whilst others felt that Sammy was being too overly negative and therefore unhelpful, so a personality slider was implemented. This gives the user control over how polite or sassy they want Sammy to be.

Linguistic style can be expanded from tone of voice and attitude to regional accents and gender, as well. Our test users shared with us how important it was to them to

feel represented, and that how the person that they are talking to *sounds* like matters when they are seeking solace or stress relief -- one British user in particular shared her delight with how a "United Kingdom" accent was available for Sammy instead of just a standard American English one. Therefore, in order to better establish Sammy as an inclusive and customizable AI personality and to cater to these diverse users' needs, gendered options (including a non-binary option) for Sammy's voice was added to the settings. The need for further regional accented options has been noted. *(see II-h: Interview transcripts)*

5. Limitations

Although our team accomplished much over the course of 15 weeks, there are a number of limitations placed upon our final product. These limitations are more of a technical nature than they are of viability.

None of our members are truly familiar with code, meaning we could not create a real app in the sense that *Safespace* could be installed as an application on a user's phone and then run. Instead, our team had to rely on using Adobe XD to create the illusion of a working prototype, but this too had its own limitations. Some of the key features we wished to include for instance, such as blowing into the mic in Let Go to extinguish the fire, simply cannot be replicated in Adobe XD at this time.

Our promise of an AI voice/chatbot with a customizable personality would also be an extremely difficult one to realistically deliver. Voice banks for each combination of regional accent and gendered (or non-gendered) voice would very likely lead to enormous file sizes for *Safespace,* as well as the fact that we lack the present-day technology to make a convincing AI chat partner that could truly help someone with their problems like Sammy could. Therefore, Sammy would most likely be better used for venting or ranting in its current state if our team was looking into making this a reality than for anything else.

As for incorporating audio tracks into VR Safe Spaces, this too would likely lead to bloating of file sizes for *Safespace.*

6. Future Plans

Our team plans to focus on and further develop our VR Safespace tab aesthetically and functionally to release the app to the public. In order to do so, we are currently in discussion with Hallym University Medical Center for them to share anonymous data that will strengthen our perception on mental health and allow us to refine our service. Fundamentally, with the improved service, we want to work together with Yonsei University's counseling center to provide students with our service free of charge. Some possible functional improvements include integrating audio and video to the VR Safespace to let users engage more deeply with our service.

7. Conclusion

Multiple phases of diagnosing and understanding the initial problem, comparing existing services, designing and assessing alternate functionalities, developing and evaluating the prototype have helped us to continuously fix and refine our solution to tackling the pain point of generalized anxiety and mental stress. As a result, our team was able to extract the functional requirements of intuitiveness, minimalism, confidentiality, and most profoundly providing a safe userspace for mental stress relief. We equally distributed the required elements into the functions of Sammy the voicebot with a customizable personality, a Safespace with VR technology to provide mental stability, and Let Go with physical interaction for visual catharsis. In conclusion, our team hopes to bring positive changes and significantly enhance the quality of the entire student body with our application.

Appendix

I-a.

1st round survey questionnaire

1. Age Group				
0-9	10-19	20-29	30-39	40-49
2. Gender				
Male	Female	Prefer not to share		
3. Are you a Korean or an Int'l Student?				
Korean	International			
4. How often do you write in your journal?				
Never	Rarely	Sometimes	Regularly	Almost Everyday
5. How often do you use emotional well-being apps?				
Never	Rarely	Sometimes	Regularly	Everyday
6. Is there a counselling center in your school?				
Yes	No	I don't know		
7. Have you had any concerns about your mental health e.g. stress, anxiety, low mood?				
Yes	No			
7. 1 Level of Knowledge for your concerns				
1 Very Low	2 Low	3 Moderate	4 High	5 Very High
7.2 Who has supported you/your friend with mental health stuff?				

Family & Friends	Online Community	Professionals	I did not want support	There wasn't support I wanted to access
7.3 If you didn't get support but wish you could have, what sort would you have liked?				
Family	Friends	Online Community	Professional	Others
8. When you feel stressed, what is the stress level from following? (1-5)				
School work				
Family Problems				
Concerns for Career				
Social Activities (Busy, Unwanted drinking, etc)				
Other (Please specify:				
9. Do you have experiences with therapist sessions?				
Yes	No	Prefer not to share		
10. Do you think chatbots can be helpful?				
Very Unhelpful	Unhelpful	Moderately Helpful	Helpful	Very Helpful
11. Rank the reasons why you think people don't go to therapy sessions. (1 - Biggest, 4 - Smallest)				
Unaware of their issues	1	2	3	4
Social Stigma	1	2	3	4
Time Constraint	1	2	3	4
Inaccessible	1	2	3	4
Cost	1	2	3	4

Other	1	2	3	4

I-b.

2nd round survey questionnaire

1. Age

2. Occupation	
College student	Others:

3. Gender		
Male	Female	Prefer not to say

4. On your smartphone, which functions do you use to relieve stress?				
Mobile gaming	Communication (Messenger, SNS, etc)	Watching videos	Writing e.g. diary	Others:

5. Would you use an app that helps you de-stress?		
Yes	No	Maybe

6. How often do you use anxiety-reducing or stress-relieving apps?				
Always	Frequently	Sometimes	Rarely	Never

7. Why do you use these apps?

8. Have you ever felt comforted by an app?			
Yes, through encouraging texts	Yes, through healing photos	No, I haven't	Others:

9. Imagine yourself in a stressful situation, just in your imagination, which of the following actions would be the best for relieving your stress?					
Writing about it in a diary	Burning the paper after writing on it	Writing a message in a bottle and letting go of it in the ocean	Burying the paper after writing on it	Tearing apart the paper after writing on it	Others:

10. When you visualize "releasing stress", what comes to mind?

11. Do you think reflecting on past event would help you move forward?

12. Would you be willing to express/write about frustrations? Ex. diary

13. If you answered "yes" to questions 12, how much time are you willing to use?

14. Do you think writing about past happy moments, positive thoughts could help you relieve stress in the future?

I-c

1st round interview script:

Age
Occupation
Gender
Ethnicity
Relationship Status

Hello, we are Information & Interaction Design students from Yonsei University. Our team is called Team NoDoubt, and you are here today to help us conduct a study for our Interaction Design class. Thank you for participating in this study. As a part of our course, our team is researching how English-speaking college students in Korea manage their mental health and emotional wellbeing. We are conducting a few preliminary interviews this week for this purpose.

Q: How do you feel today?

Q: Have you ever used an emotional well-being app before? (meditation apps, mood journal apps, etc.)
- If you have, how was your experience with it/them?

Q: Do you have a diary or a journal?
- If you do, when do you use your diary or journal?
- If you don't, why not?

Q: When do you feel stressed?

Q: How do you relieve stress?
- Q: Do you feel like that is sufficient in relieving your stress?

Q: Is there a counselling center in your school?
- Do you know any counselling center around you?

Q: What do you think of people that go/have gone to therapy sessions?
- Do you know anyone who has gone to therapy sessions?

Q: Have you ever had any sessions with a therapist?

Q: What do you think the biggest reasons people don't go to see a therapist, counselor, or other mental health professional are?

Q. Do you feel like/Have you ever felt like your concerns or anxieties are/were not great enough to warrant speaking to a professional?

Q. Do you find it difficult or uncomfortable to open up to someone you don't know?
- What about your friends/someone close to you?
- Would talking to an impartial entity, such as an AI chatbot, help?

Q. When I say "AI," or "chatbot," what comes to mind?

I-d
2nd round interview script:

Interview #
Interviewer:
Interview Date:

나이 (Age)	
직업 (Occupation)	
성별 (Gender)	

Hello, we are Team NoDoubt from Interaction Design class. Our team is currently researching "efficient and effective ways to express/relieve stress on a smartphone for university students" and as a part of the research, we are conducting an interview. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we transcribe your response? If you say yes, we will proceed with the interview.

인터뷰 / Interview
1. "스트레스 푸는 것"을 시각화했을 때, 무엇이 떠오르나요? (When you visualize "releasing stress," what comes to mind?)

2. 스트레스를 받았던 지난 경험을 되돌아보는 것이 도움이 될 것이라고 생각하나요? (Do you think reflecting on past events would help you move forward?)

3. 스트레스 받는 일에 대해서 표현하거나 쓸 의향이 있나요? 예) 일기
(Would you be willing to express/write about frustrations? ex) diary)
- 아니라면 왜 아닌가요? (If not, why not?)

I-e
Focus group script:

Hello! Thank you for participating in this focus group. We are Team NoDoubt, students at Yonsei University taking the course Interaction Design. We are conducting this focus group in order to learn more about our potential users, and also gain feedback on some design alternatives. Please have in mind that there are no right or wrong answers. Moreover, your responses will only be used for user research purposes, and your name will not show in our organized demographic data.

1. When are you stressed?

    1.1. Does this change throughout the day/year?

2. How do you cope with stress?

3. How do you visualize stress?

4. When was the lowest time for your life?

5. What helped you overcome that time?

6. Does stress affect how you behave?

7. What are the usual causes of stress in your life?

8. Would you use an app to release stress?

9. How would you "let go" of your problems, if you could in any way?

    9.1. Would burning it help?

    9.2. What about putting a message in a bottle and casting it into the ocean?

10. In your experience/opinion, does journaling help alleviate these symptoms at all?

    10.1. What if every time you type (or talk) about your day and feelings, there's a domino block created in the color that represents your mood for the day, and you get to knock them down like a domino?

    10.2. Which do you think would be better: writing down the journal or recording your voice?

        voice..so, I'd go with writing!

10.3. How would you feel if your content of the journal was color-coded based on your emotion?

10.4. Would providing you with options based on detected words from the content you write to be helpful?

11. Would chatting with someone about what's giving you anxiety or stressing you out help?

11.1. What if it was an AI?

11.2. Do you have a preference for the AI's personality? (Sassy, compassionate, professional, etc.)

12. Do pets, in your experience, help alleviate some of your symptoms of stress?

12.1. Have you ever had a virtual pet before?

12.2. Did it help you feel better?

I-f

Card sorting items:

Burning papers	Recording voice journal	Exams	Netflix	Friends and family
Sending off to ocean	Color-coding mood	Relationships	Alone time	Drinking
Virtual pet	Domino of journal	Animal Crossing	Black blob	Food
Talk about stress	Neopets	Crying	Dreams	Sleeping
Type about stress	Tamagochi	Homework	Jumping off tall building	Visualized meditation
Writing in journal	Gaming	Memes	Smoking	Music

I-g
Consent form:

CONSENT TO PARTICIPATE IN RESEARCH STUDY

Title of Study: Tackling the Pain Point of Generalized Anxiety Amongst College Students via Technology

Name of Team: NoDoubt

I hereby give my consent to Team NoDoubt and its members to use my image and/or any interview statements from me in its research project, including in-class presentations.

This consent includes, but is not limited to:

- ❏ (a) Permission to interview, film, photograph, and/or record my voice
- ❏ (b) Permission to use my name
- ❏ (c) Permission to use quotes from the interview(s) (or excerpts of such quotes), the film, photograph(s), and/or recording of my voice, in part or in whole, in its research project (including the in-class presentations).

Participant Name: _____.

Signature: _____.

Date: _____.

I-h

User testing & Interview script:

Interview #
Interviewer:
Interview Date:

나이 (Age)	
성별 (Gender)	
직업 (Occupation)	
상담 경험 유무 (Counseling Experience)	

Hello, we are Team NoDoubt, a team of Yonsei University students that is taking a class named Interaction Design. We have developed a prototype named "Safespace," a mobile application prototype that aims to tackle the pain point of generalized anxiety amongst college students via technology. As a means of user testing, we are conducting an interview. You will be conducting benchmark tasks that we tell you to do, and then you will be given some questions regarding your experience of conducting those tasks. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we take a video, audio recording, and notes as a means to record this session? It is okay to say no to the video recording. If you say yes to audio recording and note-taking, we will proceed with the interview.

Q. Please interact with Sissy tab, the VUI feature of our app.

Q. How was your experience?

Q. Do you think that this feature would be helpful?

Q. Please interact with the Let Go tab, the feature that virtually burns your unnecessary concerns.

Q. How was your experience?

Q. Do you think that this feature would be helpful?

Q. Please interact with the Safespace tab, the VR spaces that you can choose to destress in when you are stressed.

Q. How was your experience?

Q. Do you think that this feature would be helpful?

Q. Please interact with the Settings tab.

Q. How was your experience?

Q. Do you think that this feature would be helpful?

[Ratings]
Q. On a scale of 1 to 10, please rate the AI voicebot ("Sissy").

Q. On a scale of 1 to 10, please rate the Let Go tab.

Q. On a scale of 1 to 10, please rate the VR Safespace tab.

Q. On a scale of 1 to 10, please rate the Settings tab.

Q. On a scale of 1 to 10, please rate the overall application prototype.

Thank you for participating in this interview! Your feedback is highly appreciated.

I-i
Wizard of Oz script:

Interview #
Interviewer:
Interview Date:

나이 (Age)	
성별 (Gender)	
직업 (Occupation)	
상담 경험 유무 (Counseling Experience)	

Hello, we are Team NoDoubt, a team of Yonsei University students that is taking a class named Interaction Design. We have developed a prototype named "Safespace," a mobile application prototype that aims to tackle the pain point of generalized anxiety amongst college students via technology. As a means of user testing, we are conducting a Wizard of Oz interview. You will be conducting benchmark tasks that we tell you to do, and then you will be given some questions regarding your experience of conducting those tasks. When you conduct tasks, one of the members of our team will respond, but please think that the app is responding in this case. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we take a video, audio recording, and notes as a means to record this session? It is okay to say no to the video recording. If you say yes to audio recording and note-taking, we will proceed with the interview.

Q. Please say hi to Sissy.

Q. Please tell Sissy your concerns.

Q. Please freely interact with Sissy like you would do with a counselor.

Q. How was your experience?

Q. What aspects of the conversation were helpful?

Q. If you think that this feature could be improved upon, what aspects do you think we could make better?

Q. (In the case of interesting behavior) Why did you do that action?

Q. (In the case of behavior that displays confusion) What aspect of this feature might be confusing you?

I-j
A/B testing questionnaire:

A/B Testing for Safespace

Hello, we are Team NoDoubt, a team of Yonsei University students that are taking a class called Interaction Design. We have developed a prototype named "Safespace," a mobile application that aims to tackle the pain point of generalized anxiety amongst college students by using technology!

We are conducting A/B Testing as part of our user experience research. Please choose the screen of your preference A (left) or B (right). In some cases there will be more than two options -- please select your (1) preferred option.

Please keep in mind that there are no right or wrong responses for this test (you cannot fail) and that your responses will be used solely for the purposes of our research for this class. As always, your information will remain anonymous. Thank you!

1. How old are you? (International age, not Korean age) *
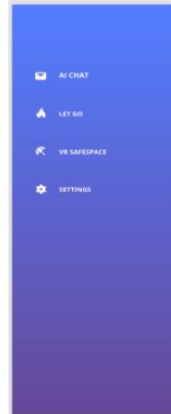- ◯ 18-22
- ◯ 23-27
- ◯ 28+

2. What is your gender? *
- ◯ Female
- ◯ Male
- ◯ Prefer not to say

3. Which user interface do you like better? *

Option A has all the 4 app features available from a sidebar that pushes out from the left. Option B has the 3 main features available on the bottom navigation bar with settings on the top right.
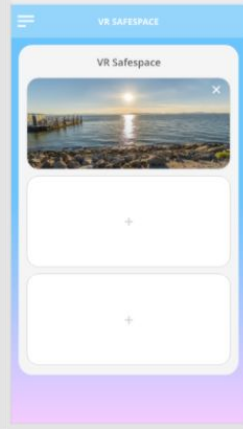

- ◯ A: Side-bar navigation menu
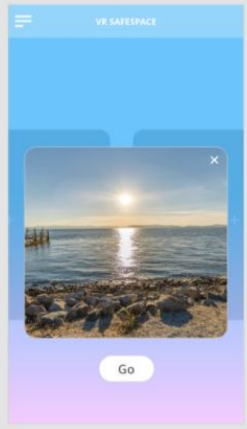- ◯ B: Bottom-bar navigation menu

4. Which user interface do you like better? *

Option A has all 3 sceneries viewable at once, but in smaller portion. Option B showcases 1 scenery per screen (scrollable sideways for remaining 2 sceneries), but in a larger resolution compared to option A.
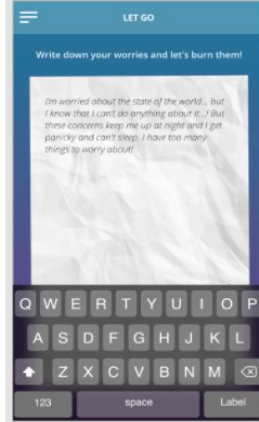

- ◯ A: Options to be displayed on one screen
- ◯ B: Options to be scrolled sideways

5. Which user interface do you like better? *

Original intention was to mimic writing on a paper. Option A has wrinkle effect on the page you write on. Option B looks more like a standard note app.

- ◯ A: Writing on a paper feel
- ◯ B: Typing on a memo

6. Which user interface do you like better?

Please select the wording you prefer.

A. Settings - Set Nickname

SETTINGS

Set Nickname

System Voice

Dark Mode

So, what do you go by?

OK

B. Settings - Set Nickname – 1

SETTINGS

Set Nickname

System Voice

Dark Mode

So, what should I call you?

OK

○ A: "So, what do you go by?"

○ B: "So, what should I call you?"

7. Which user interface do you like better?

Please select what your preferred look for 'dark mode' is.

○ A:

○ B:

○ C:

○ D:

II-a

1st round survey results

1. Age Group	0-9	10-19	20-29	30-39	40-49
			81		
2. Gender	Male	Female	Prefer not to share		
	39	26	16		
3. Are you a Korean or an Int'l Student?	Kor.	Int'l			
	45	31			
4. How often do you write in your journal?	Never	Rarely	Sometimes	Regularly	Almost Everyday
	27	23	18	10	3

5. How often do you use emotional well-being apps?	Never	Rarely	Someti mes	Regula rly	Everyd ay
	62	14	5	0	0
6. Is there a counselling center in your school?	Yes	No	I don't know		
	25	2	54		
7. Have you had any concerns about your mental health e.g. stress, anxiety, low mood?	Yes	No			
	71	10			
7. 1 Level of Knowledge for your concerns	1 Very Low	2 Low	3 Moder ate	4 High	5 Very High
	24	27	13	4	3
7.2 Who has supported you/your friend with mental health stuff?	Family & Friend s	Online Comm unity	Profes sionals	I did not want suppor t	There wasn't suppor t I wanted to access
	15	7	3	15	31
7.3 If you didn't get support but wish you could have, what sort would you have liked?	Family	Friend s	Online Comm unity	Profes sional	Others
	5	2	6	12	6
8. When you feel stressed, what is the stress level from following? (1-5)	1 Very Low	2 Low	3 Moder ate	4 High	5 Very High
School work	0	8	22	35	16
Family Problems	42	22	11	4	2
Concerns for Career	4	12	14	23	28

Social Activities (Busy, Unwanted drinking, etc)	7	8	21	29	16
Other					
9. Do you have experiences with therapist sessions?	Yes	No	Prefer not to share		
	9	66	6		
10. Do you think chatbots can be helpful?	Very Unhelpful	Unhelpful	Moderately Helpful	Helpful	Very Helpful
	13	32	25	6	4
11. Rank the reasons why you think people don't go to therapy sessions.	Unaware of their issues	Social Stigma	Time Constraint	Inaccessible	Cost
	22.4%	21.1%	20.5%	19.9%	16.1%

II-b
2nd round survey results

1. Age				
20~29	**10~19**	**30~39**	**50~59**	**Total**
65 (87.9%)	7 (9.5%)	1 (1.4%)	1 (1.4%)	**74 (100%)**
2. Gender				
Female	**Male**	**Prefer not to say**	**Total**	
58 (78.4%)	14 (18.9%)	2 (2.7%)	**74 (100%)**	
3. Occupation				
Uni. Student	**Employed**	**Total**		
71 (95.9%)	3 (4.1%)	**74 (100%)**		
4. Smartphone features you use to relieve stress				

Mobile Gaming	Communicating	Videos/Music	Writing a diary	
21	49	71	13	

5. Willingness to use apps that help de-stress				
Yes	**No**	**Maybe**		
42 (56.8%)	10 (13.5%)	22 (29.7%)		

6. Usage Frequency for anxiety-reducing or stress-relieving apps				
Always	**Frequently**	**Sometimes**	**Rarely**	**Never**
5 (6.8%)	19 (25.7%)	17 (23.0%)	8 (10.8%)	25 (33.8%)

7. Why do you use these apps? For…	
Fun & Entertainment	9
Convenient & Time, Cost Efficient (Easy to Access)	8
Relaxation / Sleeping	5
Taking my mind off stressful events	10
Diagnosing the cause of stress by writing a diary	3
Addiction	5
No other way…	7

8. Have you ever felt comforted by an app?		
Yes, through encouraging texts	**Yes, through healing photos**	**No, I haven't**
28	25	29

9. Visualizing Stress-relief	
Writing about it in a diary (including mobile apps)	21 (28.4%)
Burning the paper after writing on it	11 (14.9%)
Tearing apart the paper after writing on it	8 (10.8%)
Writing a message in a bottle and letting go of it in the ocean	5 (6.8%)

Burying the paper after writing on it	1 (1.4%)
Other: Screaming & Swearing	2 (2.7%)
Other: Expressing/sharing my own stress	2 (2.7%)
Other: Entertaining contents	1 (1.4%)
Other: Checking bank account balance	1 (1.4%)
Other: Calming videos	1 (1.4%)
Other: Breaking	1 (1.4%)
10. Contact Number	
[Censored for Privacy Issues]	

II-c

1st round interview transcript:
Interview #1
Interviewer: Chiwon Lee
Interview Date: April 11th, 2020
Interviewee Information:

Age	25
Occupation	University Student (Senior)
Gender	Male
Ethnicity	Korean
Relationship Status	In a relationship

Hello, we are Information & Interaction Design students from Yonsei University. Our team is called Team NoDoubt, and you are here today to help us conduct a study for our Interaction Design class. Thank you for participating in this study. As a part of our course, our team is researching how English-speaking college students in Korea manage their mental health and emotional wellbeing. We are conducting a few preliminary interviews this week for this purpose.

Q: How do you feel today?
A: I'm feeling okay, thank you.

Q: Have you ever used an emotional well-being app before? (meditation apps, mood journal apps, etc.)
A: No. I didn't know they existed.

Q: Do you have a diary or a journal?
A: Yes, I do.
> Q: If you do, when do you use your diary or journal?
> A: It's for work. It's to manage my time or work schedule.

Q: When do you feel stressed?
A: Everyday. These days, especially because of work. I feel pressure regarding work and my role as a student.

Q: How do you relieve stress?
A: : I usually smoke. I get beers with my mates or meet my girlfriend.
> Q: Do you feel like that is sufficient in relieving your stress?
> A: Yes. It gets my mind off of things that stress me. Smoking is also a habit. I'm just used to smoking when I'm stressed. I know it's bad for my health.

Q: Is there a counselling center in your school?
A: I think so, I'm not sure. I've never been.
> Q: Do you know any counselling center around you?
> A: Yes. Several. I've seen banners around.

Q: What do you think of people that go/have gone to therapy sessions?
A: What do I think of them? Why would I think of them? I don't have a bias if you're talking about that. In Asian culture, if someone sees others going to the mental hospital, they wouldn't really like them, but I don't care personally. I view that it is necessary, it's like going to the hospital when you're sick.
> Q: Do you know anyone who has gone to therapy sessions?
> A: Yeah. My good buddies, a lot of them.

Q: Have you ever had any sessions with a therapist?
A: Yes, I was in high school and I was having a bad time. I thought it would help.

Q: What do you think the biggest reasons people don't go to see a therapist, counselor, or other mental health professional are?
A: I believe they don't want to show their vulnerability. First, we don't want to admit how weak we are. Second, other people judge, and I don't want to take that possibility of being judged as crazy or as a lunatic. It's a horrible label.

Q. Do you feel like/Have you ever felt like your concerns or anxieties are/were not great enough to warrant speaking to a professional?
A: Yes, like a few years ago, when I was working, I didn't really get enough sleep, I was really stressed because of colleagues and team leaders and my workload was crazy. I couldn't sleep when I had the time, I could feel my heartbeat, I wasn't well in general. I didn't really have the time, I wasn't going to tell my company that I have to see a therapist because of the fear of having to leave the company. Plus, therapy sessions last a few months, and I didn't have the time for that.

Q. Do you find it difficult or uncomfortable to open up to someone you don't know?

A: I feel uncomfortable opening up to someone I don't know. Because I don't know them and I don't want to be judged. I feel that showing my personal side would make them judge me.

> Q: What about your friends/someone close to you?
> A: Usually no, because of the fear of being judged and because of the fear of.. I just don't want to show my weak points. I don't want to seem weak.
> Q: Would talking to an impartial entity, such as an AI chatbot, help?
> A: No, because data would be recorded and be saved. I would rather talk to a professional.

Q. When I say "AI," or "chatbot," what comes to mind?
A: What a great new world. I'm joking. It would help actually. AI or chatbot would relieve the limitations of me having to physically have to visit the office. An AI chatbot would remove the barrier of having to physically go. It would be comfortable since I would be able to get a session anywhere anytime. It would help sometimes. The drawbacks I think like in the end it's just a database. I worry about my data saved somewhere that I don't know. It might help everyone somehow but I still don't feel safe about my data.

Interview #2
Interviewer: Chiwon Lee
Interview Date: April 12th, 2020
Interviewee Information:

Age	24
Occupation	University Student (Senior)
Gender	Male
Ethnicity	Korean
Relationship Status	In a relationship

Hello, we are Information & Interaction Design students from Yonsei University. Our team is called Team NoDoubt, and you are here today to help us conduct a study for our Interaction Design class. Thank you for participating in this study. As a part of our course, our team is researching how English-speaking college students in Korea manage their mental health and emotional wellbeing. We are conducting a few preliminary interviews this week for this purpose.

Q: How do you feel today?
A: I feel okay.

Q: Have you ever used an emotional well-being app before? (meditation apps, mood journal apps, etc.)
A: No, I have not. I have used a diary app, but only for a couple of days and it didn't stick. It was just like it didn't have much feedback. Diaries are just for myself but it wasn't fun. No point. I was busy and it was hard to do it consistently.

Q: Do you have a diary or a journal?
A: No.

    Q: If you don't, why not?
    A: It was my first attempt to do a journal, the app, but it didn't work out.

Q: When do you feel stressed?
A: Um… Always. When I have a lot of workload I guess. Maybe except the time when I eat and rest before sleep. The rest is all stressful. Responsibilities as a student are very stressful but that's just a part. More broadly, what do I have to do for my life… that's what I think about. Preparing for the future, I'm not always content with what I'm doing. Not that I'm capable of doing anything more.

Q: How do you relieve stress?
A: Um.. I watch movies, I sometimes play video games, I sometimes go out with my girlfriend or friends. Mostly those things.

    Q: Do you feel like that is sufficient in relieving your stress?
    A: No. Um… I'm not sure. Even if I do those things, I still get a lot of my stress in my everyday life. I'm not sure if anyone can completely relieve their stress. I'm not sure if it's possible.

Q: Is there a counselling center in your school?
A: Yes. I believe there is.

    Q: Do you know any counselling center around you?
    A: I've heard about the counseling center at Yonsei but I've never gone or searched.

Q: What do you think of people that go/have gone to therapy sessions?
A: I guess I admire their courage to go there.

    Q: Do you know anyone who has gone to therapy sessions?
    A: A couple of friends.

Q: Have you ever had any sessions with a therapist?
A: No.

Q: What do you think the biggest reasons people don't go to see a therapist, counselor, or other mental health professional are?
A: For myself, I guess I'm not completely sure it would help me. If it's about medication, I don't want to do medication. If it's a therapy session, I'm not sure it would be super effective. I think it's a process of healing but it might not have a strong effect.

Q. Do you feel like/Have you ever felt like your concerns or anxieties are/were not great enough to warrant speaking to a professional?
A: No. Not necessarily. I think it's good enough but I don't go because of the lack of time and because of the thought that I might get better. Makes me double think.

Q. Do you find it difficult or uncomfortable to open up to someone you don't know?
A: No, it's okay.

    Q: What about your friends/someone close to you?

A: I'm comfortable about opening up. Maybe by sharing the stress, in a way, relieves the stress. Even though I'm not completely comfortable with someone, if the atmosphere is okay, I can share.

Q: Would talking to an impartial entity, such as an AI chatbot, help?

A: I'm not sure. I've heard it does have a positive effect.

Q. When I say "AI," or "chatbot," what comes to mind?

A: Um.. Because I'm studying computer science, I think about algorithms. I think about programming.. It takes away the magic of it.

Interview #3
Interviewer: Chiwon Lee
Interview Date: April 12th, 2020
Interviewee Information:

Age	26
Occupation	University Student (Senior)
Gender	Female
Ethnicity	Korean
Relationship Status	Single

Hello, we are Information & Interaction Design students from Yonsei University. Our team is called Team NoDoubt, and you are here today to help us conduct a study for our Interaction Design class. Thank you for participating in this study. As a part of our course, our team is researching how English-speaking college students in Korea manage their mental health and emotional wellbeing. We are conducting a few preliminary interviews this week for this purpose.

Q: How do you feel today?

A: Little stressed because it is Sunday and I need to go to work tomorrow.

Q: Have you ever used an emotional well-being app before? (meditation apps, mood journal apps, etc.)

A: No, but I have heard about an application doing this. Trost?

Q: Do you have a diary or a journal?

A: Yes.

Q: If you do, when do you use your diary or journal?

A: I have a diary to plan things out.

Q: When do you feel stressed?

A: Every single second I am at work and the colleague I do not wish to talk to comes over and spits out a single word.

Q: How do you relieve stress?

A: I eat a lot.

Q: Do you feel like that is sufficient in relieving your stress?
A: No, it actually gives bad emotions after eating.

Q: Is there a counselling center in your school?
A: I think so, I'm not sure though.
    Q: Do you know any counselling center around you?
    A: Yes.

Q: What do you think of people that go/have gone to therapy sessions?
A: It is good for them. I don't really care.
    Q: Do you know anyone who has gone to therapy sessions?
    A: Me!

Q: Have you ever had any sessions with a therapist?
A: I did!

Q: What do you think the biggest reasons people don't go to see a therapist, counselor, or other mental health professional are?
A: From a Korean perspective, if your friends find out, they will think I have mental issues.

Q. Do you feel like/Have you ever felt like your concerns or anxieties are/were not great enough to warrant speaking to a professional?
A: Not really.

Q. Do you find it difficult or uncomfortable to open up to someone you don't know?
A: No, I feel more comfortable because they will forget.
    Q: What about your friends/someone close to you?
    A: Depends, but usually friends are better
    Q: Would talking to an impartial entity, such as an AI chatbot, help?
    A: Um........... if they are good enough to sensitively talk back to me?

Q. When I say "AI," or "chatbot," what comes to mind?
A: Therapy is really what a human to human contact is needed. not sure if chatbots or ai will replace this.

Interview #4
Interviewer: Nara Han
Interview Date: April 11th, 2020
Interviewee Information:

Age	26
Occupation	University Student (senior)
Gender	Female
Ethnicity	Korean
Relationship Status	In a relationship

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Q: How do you feel today?
A: Good. I'm just resting all day.

Q: Have you ever used an emotional well-being app before? (meditation apps, mood journal apps, etc.)
A: Yes I actually did.

> Q: If you have, how was your experience with it/them?
> A: I used an app called 'Calm' for ambience sound. It was one of the high-quality meditation apps I have tried out so far. I particularly enjoyed using it for night-time mood setters; the natural sound and some of the free audio book stories are the ones I used more frequently. I would just listen to it on my bed before I fell asleep or just when I was taking a break alone in my room.

Q: Do you have a diary or a journal?
A: No.

> Q: If you don't, why not?
> A: Um..I just don't…? It's just not my thing. I think it's kind of like not something someone like me will do. I don't even clean my room so it's just too bothersome.

Q: When do you feel stressed?
A: Usually, before important events such as tests, interviews, etc. School tests are not that stressful; it's just the amount that's sometimes overwhelming for me. But things like internship interviews, or recently, I had some job interviews and they are really stressful. I get stressed from like a week before. My stomach doesn't feel good around those times and yeah. It's all I can think about. It just lies behind all my thoughts so yea. I get pretty stressed around those events. Oh and also, when I'm around with a lot of people that I'm not that close to? It just feels really awkward so I feel like I should do something, but you know that's not me. So yeah. During those times, I get stressed.

Q: How do you relieve stress?
A: I make sure that I have some time alone for just myself. This works for all the different types of stress that I feel. Being alone in my room just lets me organize my thoughts and concentrate on myself. But sometimes, when I think about it, I sometimes seek for advice from the people I trust. It doesn't have to like real serious advice but just talking to them about my thoughts sometimes helps.

> Q: Do you feel like that is sufficient in relieving your stress?
> A: Sometimes yes and sometimes no. Things like interview stresses and getting jobs, I mean like that doesn't disappear until I get a job haha so

maybe just knowing that someone understands? What am I going through? but it's not enough.

Q: Is there a counselling center in your school?
A: Yes, our school provides student free counseling sessions and I am currently using the service. It's actually quite good. I think I'm getting some kind of help from the sessions.

Q: What do you think of people that go/have gone to therapy sessions?
A: Well to start with, I have. And I think it is important to create an embracing environment for people to take care of their own emotional well-being as much as they put much effort on maintaining physical health. I know some people might be reluctant to go to those kinds of sessions but you know, mental help is just as important as physical. So I get why you are asking that question and I hope everyone feels the same way some day.

Q: Have you ever had any sessions with a therapist?
A: Yes.

Q: What do you think the biggest reasons people don't go to see a therapist, counselor, or other mental health professional are?
A: Well, I actually did some research because of some project I was doing, and from the research I found out that there were 3 main reasons. They were: negative social awareness regarding mental health/counseling in South Korea. South Korea's case is very different from that of the States. I feel like Korea is not yet grasping the importance of mental health. Also, the cost is quite expensive. And lastly, it is not often accessible. Sometimes, you don't even have centers around you, sometimes you just don't feel like you want to because it's very time and energy consuming.

Q. Do you feel like/Have you ever felt like your concerns or anxieties are/were not great enough to warrant speaking to a professional?
A: Yes, some of the issues can be perceived as trivial, so I tend to just hold it for myself.

Q. Do you find it difficult or uncomfortable to open up to someone you don't know?
A: Yes.
> Q: What about your friends/someone close to you?
> A: I share my thoughts or concerns with only several people. Not a lot. Maybe because I don't have a lot of friends haha.
> Q: Would talking to an impartial entity, such as an AI chatbot, help?
> A: I am not sure. I've never done it, but I don't think so. I mean it doesn't really know me so I feel like it wouldn't be able to give me the right advice? as much as someone who really knows me can.

Q. When I say "AI," or "chatbot," what comes to mind?
A: Um…lacking empathy…but truthful to facts and maybe precise?

Q: Any final thoughts?

A: Um no, but I feel like this is a great topic to deal with for any project so I hope you do well.

Interview #5
Interviewer: Nara Han
Interview Date: April 11th, 2020
Interviewee Information:

Age	27
Occupation	University Student (senior)
Gender	Male
Ethnicity	Korean
Relationship Status	Single

Hello, we are Information & Interaction Design students from Yonsei University. Our team is called Team NoDoubt, and you are here today to help us conduct a study for our Interaction Design class. Thank you for participating in this study. As a part of our course, our team is researching how English-speaking college students in Korea manage their mental health and emotional wellbeing. We are conducting a few preliminary interviews this week for this purpose.

Q: How do you feel today?
A: Pretty good. I had work today so I'm kind of tired but I've been feeling okay these days.

Q: Have you ever used an emotional well-being app before? (meditation apps, mood journal apps, etc.)
A: No, I haven't haha. Will I be able to help you? I feel like I won't.

Q: Do you have a diary or a journal?
A: No. But I do have like a calendar app that I keep track of everyday. And it counts, a planner. It's just like a to-do list kind of thing I keep for myself.
 Q: If you don't, why not?
 A: It's too much work for me. I don't like writing things down and diaries, you kind of have to write in sentences right? I'm not a writer type haha.

Q: When do you feel stressed?
A: When I used to take classes, mostly tests? Exams, sometimes team projects definitely. There are..different types of people around the world so yeah, communicating with new people was stressful for me. But right now, since I'm on a break and doing the internship, maybe workwise? It's just a new environment for me so I felt some stress adjusting to this new everything in life.

Q: How do you relieve stress?
A: Hanging out with my friends? That helps a lot. I talk and laugh a lot when I'm with them so just having some drinks with them helps.

Q: Do you feel like that is sufficient in relieving your stress?
A: No. I mean I temporarily feel good and happy when I'm with them but once I'm back home and I have to deal with work and studying again, the stress comes back. So it's just like a one-time stress reliever I guess. I can't meet friends everyday so…

Q: Is there a counselling center in your school?
A: I'm not sure. I'm thinking there must be but I've never seen it.
  Q: Do you know any counselling center around you?
  A: No. I haven't really searched for any so I don't know if there are any around me.

Q: What do you think of people that go/have gone to therapy sessions?
A: Hm..I haven't really thought of that. I don't know anyone around me who has gone to therapy sessions, but I don't really have any specific thoughts about them? But now that you ask the question, if someone around me told me that they were going to these therapy sessions, to be honest, my first question would be, "What's wrong? Is something bothering you?" Like I would guess they were going through some hardships, and maybe that might be a wrong thought to have I guess.

Q: Have you ever had any sessions with a therapist?
A: No. I don't think I would feel comfortable going and talking to a therapist.

Q: What do you think the biggest reasons people don't go to see a therapist, counselor, or other mental health professional are?
A: This kind of is what I mentioned in the other question. Other people would assume that people who do go see some kind of mental health therapist have some problem..? I mean not like a mental problem but some kind of hardships with their life, and I don't..I mean like I wouldn't want anyone to assume that about me. And also, I feel like those sessions will be expensive? since it has a 1:1 session. So yeah, I think those two reasons will be like the major ones.

Q. Do you feel like/Have you ever felt like your concerns or anxieties are/were not great enough to warrant speaking to a professional?
A: Yeah, I don't feel like they are like professional worthy problems. Things that I'm going through are like what everyone went through so I haven't thought of them as a big deal. It's like, "It will all pass" kind of problems.

Q. Do you find it difficult or uncomfortable to open up to someone you don't know?
A: Yes.
  Q: What about your friends/someone close to you?
  A: Even with some close friends, I don't really share my really deep concerns. I don't know why. I guess it's just how I interact with people.
  Q: Would talking to an impartial entity, such as an AI chatbot, help?
  A: That, definitely a no. It doesn't really know me so I'm not sure how it can help.

Q. When I say "AI," or "chatbot," what comes to mind?
Um…technology and robot? It's something of the future haha.

Q: Any final thoughts?
A: I don't think so. I just hope I helped a little.

Interview #6
Interviewer: Nara Han
Interview Date: April 12th, 2020
Interviewee Information:

Age	24
Occupation	University Student (junior)
Gender	Female
Ethnicity	Korean
Relationship Status	Single

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Q: How do you feel today?
A: Same as always. I love staying home haha.

Q: Have you ever used an emotional well-being app before? (meditation apps, mood journal apps, etc.)
A: No I don't think I have.

Q: Do you have a diary or a journal?
A: Yes!! I do keep a diary. It's not the paper diary that we used to write when we were young. It's like a diary app, oh wait, does this mean that I have used a well-being app? haha. Anyways, I love decorating the diary app. It's like the first thing that I did when I bought an iPad! So I keep all my schedules there and sometimes I put down these little emojis that represent how I felt that day.

Q: When do you feel stressed?
A: There are a lot of causes. First of all, we have school work so sometimes that stresses me out. You know like just when there are simply too much work, I feel stressed out since I feel like I'm never going to finish them all, but I do eventually haha. Also, sometimes in team projects? I don't really like team projects so yeah. And also when we do discussions in classes and someone says something that I just can't understand from my point of view, I also get stressed. Right now, the online lectures are working well for me. It's freeing me from most of these problems.

Q: How do you relieve stress?

A: Chatting? I chat on the phone for like hours with my friend. I call you so you know what I'm saying haha. I just chat with people who feel the same way as I do, or have similar opinions and experiences and that really helps. I laugh a lot on the phone. So yeah.

> Q: Do you feel like that is sufficient in relieving your stress?
> A: Haha I don't want to say this in front of you, but you must know that that's not enough. I love chatting but it doesn't get rid of all my problems. Chatting just helps me put them behind me for a while? at least while I'm talking. But it all comes back when I have to face the problem.

Q: Is there a counseling center in your school?
A: Yes. I heard we have one.

> Q: Any counseling centers that you know of?
> A: Outside of school? No. I don't think I know any.

Q: What do you think of people that go/have gone to therapy sessions?
A: I'm not sure if I feel anything for them. I definitely feel like everyone can benefit from going to therapy sessions. I personally haven't but I heard it really helps people express themselves..? and also just teach them how to deal with their emotions and stress. That must be pretty great. Nobody really teaches us these things so those sessions will be of help and people who are taking them are I think in a way very diligent? and brave? It's not an easy thing in Korea.

Q: Have you ever had any sessions with a therapist?
A: No. I would love to though.

Q: What do you think the biggest reasons people don't go to see a therapist, counselor, or other mental health professional are?
A: Mostly, they are kind of lazy? You have to look up the necessary info, compare the centers, prices and look at the reviews, and I bet there aren't enough reviews to judge from. Also, the experiences that people have here are very different from each other, so I don't even think reviews can really be beneficial. So it's just a lot of work to go through to actually find the right therapist. Also, they might be too expensive. I think a lot of people will think that it's not worth it. I actually feel that way. I mean I want to have a session but it's just too much work.

Q. Do you feel like/Have you ever felt like your concerns or anxieties are/were not great enough to warrant speaking to a professional?
A: Yes. I think that's what I feel almost every time. I bet there are a lot of people who are going through things that are so much more intense than what I'm going through so my concerns seem a little too trivial?

Q. Do you find it difficult or uncomfortable to open up to someone you don't know?
A: Yes. I think so. I've never even tried to haha.

> Q: What about your friends/someone close to you?
> A: I share a lot with my friends. When I have any concerns regarding like boys or just school, work and everything, I think I almost go to my friends. I know that they won't judge me regardless of what I say so yeah. I feel very

comfortable around them. I mean this for only some of my close friends, like you haha.

Q: Would talking to an impartial entity, such as an AI chatbot, help?
A: Um…no. I would want the person or thing that I'm talking to, to actually get me and empathize? with me. I don't think like an AI chatbot can do that right?

Q: When I say "AI," or "chatbot," what comes to mind?
A: Um..robot..and smart? Big data and these things. Like a programmed person.

Q: Any final thoughts?
A: Nope. Good luck on your project though.

Interview #7
Interviewer: Joyce Lee
Interview Date: April 9th, 2020
Interviewee Information:

Age	24
Occupation	College Student
Gender	Female (Would rather not say)
Ethnicity	Caucasian (British)
Relationship Status	In a relationship

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Q: How do you feel today?
A: "Ups and downs, really. Ups and downs."

Q: Have you ever used an emotional well-being app before? (meditation apps, mood journal apps, etc.)
A: "I have!"

Q: If you have, how was your experience with it/them?
A: "I used it a few times, I don't think it helped THAT much… because like.. it was like an AI thing… my friend told me to use it… and if you ever felt stressed or anxious or something, you could like text with it? But I can't remember the name of it, I'll see if I can send it to you later, but the answers it gave me were always a bit vague, so it didn't really help me… And obviously it will always say 'We always recommend getting professional help,' and I understand that, but it was always kind

of vague. It didn't really help much. I mean I stopped using it, so I guess it really wasn't that effective [laughs]" "It was Woebot!! That was the one I used."

Q: Do you have a diary or a journal?
A: "No."

Q: If you don't, why not?
A: "I don't have time, and also, even if I did have time, I wouldn't do it because it's just not something *I've* done…? Like I tried a diary as a kid, but I was just never into it. I've never found it something interesting, I've never found it something helpful, and I don't enjoy going back and reading things. I'm more of a visual person I guess. I enjoy seeing things. If it was like a visual diary, I don't know… Textual things have never really appealed to me, I guess."

Q: When do you feel stressed?
A: "Every fucking day. When do I feel the MOST stressed? Because honestly, all the time [laughs]... I would say I feel the most stressed when things are out of my control, I guess. So like when I don't understand things properly, or when I need to do something difficult that's out of my control to do I guess? Like for example today I had to go to the immigration office to sort out my visa extension, and I went up to the desk she was like "Do you have your transcript?" and I was like "I have a list of my grades, but not my transcript," and I don't even know how to GET [a transcript] -- so things that I know I have to do, but I have no idea how to get them. Things that are out of my control. Those are very stressful to me."

Q: How do you relieve stress?
A: "[laughs] Can I say sex…? You don't have to write that down. Spending time with loved ones. Eating. If I'm REALLY stressed the first thing I do is grab a packet of cookies. Walks in the countryside help, we like hiking. I'd say those are my top 3. My other ways of relieving stress are not really RELIEVING it but just putting it off for a later time* [laughs] but yeah, I would say the main one is being with someone, whether it be eating or hiking."
*when prompted to elaborate "That would be aimlessly scrolling facebook, watching youtube, doing other tasks so I don't have to do THAT task. That would probably be my Achilles' heel. Just lying in bed, sleeping, etc…"

Q: Do you feel like that is sufficient in relieving your stress?
A: "No, because it always comes back. Like there's always another thing, you know? So, no. I would say they're more like delaying--I'd say it's more like putting the pause button on, you know? It's more like just pausing the stress, and then returning to it again later."

Q: Is there a counselling center in your school?
A: "Yeah, from what I know? Yeah. [answer sounded unconfident]"

Q: Do you know any other counselling centers around you?
A: "I have access to information about them, but I don't know exactly where they are."

Q: What do you think of people that go/have gone to therapy sessions?
A: "OH, good for them! Keep a healthy mind."

Q: Do you know anyone who has gone to therapy sessions?
A: "Yeah."

Q: Have you ever had any sessions with a therapist?
A: "No."

Q: What do you think the biggest reasons people don't go to see a therapist, counselor, or other mental health professional are?
A: "Social stigma, money, time, and maybe also just like social anxiety? Like I feel like there would be kind of just anxiety about-- because from what I've heard, therapy sessions aren't easy, you know, so like the anxiety about having to bring up all the bad stuff again must be quite painful…"

Q. Do you feel like/Have you ever felt like your concerns or anxieties are/were not great enough to warrant speaking to a professional?
A: "All the time. Recently I figured out that even if you are happy, it's good to keep going to therapy because it's like exercise for the mind and the soul, you know? [laughs] Like even our bodies, we try to prevent ourselves from going sick, we don't just go when we need to be hospitalized. So I think therapy is good for saving yourself from getting sick in the head. And I think we have the idea that we need to be on our brain's death bed before we go to therapy. And I'm aware of all this, and yet I still don't do it [laughs]"

Q. Do you find it difficult or uncomfortable to open up to someone you don't know?
A: "[pauses to think] Yeah. I don't really like people who I don't really know, knowing me, you know? I'm a very private person, so… I try to keep myself private."

Q: What about your friends/someone close to you?
A: "Oh, yeah. I can talk to them all about stuff. I mean like… I will say that I'm a little bit more reserved when it comes to mental health stuff, because I feel like a lot of my friends still don't *quite* understand… Like I understand that they all have their own problems… And I guess that's part of it, cuz they have their own shit to deal with… But yeah, I don't know… But like [my boyfriend] I can talk to about anything. So I guess both yes and no [laughs]."

Q: Would talking to an impartial entity, such as an AI chatbot, help?
A: "Um… [thinking noises] the idea of it is appealing, however I don't know if it would work in practice."

Q. When I say "AI," or "chatbot," what comes to mind?
A: "[thinking] Like texting to like a computer."

Q: Was there anything more you'd like to add, or information you'd like to divulge that you think I missed? If you can't think of anything now but you think of it later, you can reach me on KakaoTalk.

A: "If someone could make a really good AI chatbot, then it could work. I was very excited about the Woebot, but it really didn't do much for my anxiety. Oh! This is one thing: it was talking in VERY complicated language, which I really didn't understand! [If you evaluate it] you'll see what I mean. Cuz you have different options that you can do, like you can have a daily log or chatting when you're feeling panicked [which is what I usually did], and it would ask you how you're doing or it would give you options based on what you said, but the answers it gave [me] were really, really complicated, and it felt like a logic puzzle I had to figure out... but it was too confusing... and then it would ask you "Has this helped?" and if you said no, it would just say the same things over again... so I would not get what it was talking about, but it has such limited response, you know, it would take what you say and plant it into a [pre-programmed] response, so after I used it five times I would just see the same responses."

"I was going to say, there are other options -- surely there must be other scientifically proven methods that have calmed people down rather than just talking, does that make sense? For example, I don't know why, but you know that test where you look at different prints [the Rorschach InkBlot Test]? There's something so calming about that to me. [laughs] I feel like I'm learning something about myself. I don't know why but when I think of therapy, I think of that [laughs] But I do agree with the chatbot thing--I think the idea of it sounds so promising, but it just doesn't work. It's just not any kind of replacement for therapy at all. Because you're not talking to a real person. So it just doesn't feel even a little bit like that. Because it's just a robot, so... I think it'd only really work once we have more intelligent AI, you know?"

"Oh, like, there must be some kind of game you could make that would be calming?"

(We talk about the game 2048 and how I found it very calming for a little while.)

I think if they had an app where there were multiple things and it was advertised as 'anxiety calming', I think more people would use it as such. I don't know if it's problematic to do that, but surely as long as you declare that "This is not a replacement for therapy" thing, then surely it would be fine, but like I don't know. I don't know, something like that. But maybe that's capitalizing on people's mental health--I don't know where the line is, there's a fine line somewhere. That's why there's apps like Calm, but I've never used that, because you have to pay for it, and I don't see the point where you have to pay for that-- Oh! There's one thing as well. When I go to sleep at night, or when I'm going to have a nap during the day, I do those guided meditations, but I only use one specific one: the Honest Guys on Youtube. I've tried those other guided meditations and stuff, but they make me MORE anxious, um... If I do one for more anxiety, it always makes me more anxious. It always makes me feel like I can't breathe. So I do the sleep talk-downs [by the Honest Guys], they're the only ones that have been able to help me. If you ever want to get a really good night's sleep, just listen to one of those [laughs]"

"Oh! I think I know what it is. Their guided meditations are more [like] stories. So it's a very visualization kind of thing. And they do their breathing exercises in the beginning, and then it's like you'll be in a summer cabin, or at a beach, or like... yeah, those are really good. And probably some other channels on Youtube as well. I

guess I just like those people's voices more, or something. I guess every person has a different voice that they find more calm. I think the only reason I can listen to these ones is because they're British [laughs] when I try to listen to American voices or women, it doesn't really work either, [I like a] very deep man's voice. So, if you do this on your app, it might be good to have different voices on it, because everybody is tuned to find a different person's voice to be [more] calming."

(We talk about Headspace and Sleepcasts.)

"Right! So that's why I feel like apps that are not explicitly DIRECTED at anxiety but have that added side-effect of alleviating it have done way more for me than [so-called] 'anxiety' apps--because those have always made my anxiety worse. And also that's one thing about the Honest Guys as well--like for their sleep talk-downs, they don't talk about sleep! And ones that do talk about sleep kind of break the fourth wall and make me panicky because I'm not getting to sleep [laughs] and then I'm just like "they're talking about sleep but I can't get to sleep right now!" That's why I like ones that tell more of a story."

Interview #8
Interviewer: Joyce Lee
Interview Date: April 10th, 2020
Interviewee Information:

Age	23
Occupation	Unemployed
Gender	Male
Ethnicity	Japanese and German (mixed)
Relationship Status	Single

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Q: How do you feel today?
A: "I feel a little… without purpose. I mean it's not a very heavy feeling -- you know, it's not taking a dig at my emotional health -- but there's nothing [for me] to do here, and that does have larger ramifications but you know I'm not feeling ENTIRELY anxious about that feeling, but that kind of sums up how today's like."

Q: Have you ever used an emotional well-being app before? (meditation apps, mood journal apps, etc.)
A: "No."

Q: Do you have a diary or a journal?
A: "No."

Q: If you don't, why not?
A: "I've thought about it, and I think I've started a couple times. I haven't tried it recently, but in the past when I did try, it ended up feeling [like] more of a chore and less of a time of reflection or a relief, it was more of a burden. Yeah."

Q: When do you feel stressed?
A: "Every fucking day *[laughs]* I think a lot of people do [this] as well, but the way I live my life is like I'm always *looking* for things to be stressed about, and if I'm *not* stressed, that means I [must] *not* be considering everything I *should* be considering at that given moment in time. And so, I think for me the feeling of stress is more [of an] assurance that I'm thinking of everything that I SHOULD be thinking, of whether that's career, relationship, what I'm going to eat that day, things like that. And it happens like this all the time where I'll forget what I was stressing about, and then [that] makes me stressed and I'm like "Oh no, I was stressing about something but now I forgot what I was stressing about, now I have even more stress! ...What was the question?" (When do you feel stressed? *[laughs]*) "Oh, all the time! It's just a daily cycle of how stress feeds off of me and how I feed back off of stress."

Q: How do you relieve stress?
A: "I think that I don't have a repertoire, where I'm like "I'm stressed now, [so] I'm going to do *this*," you know? It's more of… lifestyle adjustments that I take part in. For example, the big one is going to the gym. I go to the gym usually everyday, but in the times where I'm NOT going to the gym, I can feel even more of that heightened stress because I didn't have that outlet. But that's not to say that when I'm feeling stressed I'll be like "Oh I'll go to the gym now and relieve stress," no, it's just kind of like -- the system is there, and when the system is absent, then I'm even more stressed. So there's that, and you know meeting friends can be more of an immediate response in terms of like, if I'm feeling ESPECIALLY stressed, I can be like "Hey let's meet up today and just hang out." Or it does kind of work similarly to that gym example where it's like if I'm in a time of my life where I'm constantly meeting friends, then I'm less stressed than if I CAN'T be meeting my friends."

Q: It helps having people around?
A: "Right."

Q: Human contact.
A: "Right, right."

Q: So you feel like meeting people, maybe doing things, maybe getting out of the house--?
A: "Yeah, for sure."

Q: Now you've just graduated, you were in school just a couple months ago. Was there a counselling center at your school?
A: "I think in the last semester I was there they maybe introduced something? I started receiving emails very close to the end of my time there. Oh, it might have

been the last two semesters. Of some… I don't even know what to call it. It sounded like they had meetups occasionally? But there was also some body within the university that handled specifically mental health for international students? I was curious about it but I never ended up doing anything with them, just because I figure: my school can't do anything right, there's no way this is going to be a helpful institution *[laughs]"*

Q: Do you know any counselling center around you?
A: "Not particularly."

Q: What do you think of people that go/have gone to therapy sessions?
A: "Bless up! Can you refer me?"

Q: Do you know anyone who has gone to therapy sessions?
A: "I don't think so. I think being in Korea, those are harder to come by, especially in English. I thought about it. I think it was 2 years ago… I needed some [therapy]. I was looking online but it just seemed--not complicated, but you know, you'd have to go and pay and it wasn't easily accessible I would say, at that time in my life. So I never did go. What was the question, was it if I knew anybody? No. I never went, I don't really know anybody, just because like I said I think it can be difficult to find options for English-speaking people in Korea, so I haven't heard of anybody."

Q: Have you ever had any sessions with a therapist?
A: (At first he believed he hadn't, but then at the very end of the interview he suddenly remembered that he *had* gone as a child, after he revealed his sexuality to his mother, who then referred him to a Christian counselor. The experience felt like a 'fever dream' to him)

Q: What do you think the biggest reasons people don't go to see a therapist, counselor, or other mental health professional are?
A: "Right, so I think accessibility is one of the main ones. But then past that, there is this quote unquote 'counseling center' at the school now, so it's hard to make the argument [now] that it's not accessible. Like I said earlier, I'm very skeptical about the efficacy of that body. I feel like I'm not one to judge, since I've never done anything with them, but I feel like operating within the school -- to do counseling for these international students successfully, you would have to show a deep understanding of those people, of those international students -- and EVERYTHING that the school does shows that they are NOT capable of anything NEAR that. And you know, I can imagine now that a lot of their actions are centered around maybe connecting people? [Maybe like a] group therapy, or people just talking to each other? More of a meet-up or get-together than any type of solid counseling? Just because whoever's running the show there -- I can't imagine they have actual psychologists there. I can't imagine that they've been given the body of tools to understand and target the intended audience."

Q: By 'intended audience'… do you feel like the counseling center at school is maybe better for Korean students or international students?
A: "Looking at the fact that the housing body is Yonsei University; we're in Korea; the people who run the show are Korean; therefore, they can understand the Korean

students' troubles a lot more accurately than they would be able to for international students. Not only do these people who are managing this counseling center probably don't -- it's a large assumption, but I'm assuming they don't have close to the experiences that the people who would be going to the counseling center have. Have they been international students at all? If they have, great, that's fantastic, but have they been a foreign student in Korea, at a Korean university? I'm going to go ahead and answer that and say no. At that point I feel like *I* could do a better job of running this counseling center, just because I would know the experience of what these students going to that counseling center are having, and therefore can take action on that -- having understood that experience [firsthand]."

Q. So you haven't been and you don't think you know anyone that's gone, but you have this very specific experience of being at Yonsei, and you don't feel like anyone there would be able to understand that? Did I get that right?

A: "Yes. And I think it transcends that -- this needs to be encompassing different sets of understanding *tailored to* whoever's coming to the counseling center! For example, peoples' expectations and experiences can alter based on where they're from. So for me, coming from the States, I could have certain stresses and certain troubles that are different from someone coming from China or Europe. How can somebody running this counseling center be able to understand that? And it's unrealistic to think that they have a counselor from America who ALSO studied at Yonsei as an international student, they're just waiting for me to go in there and seek counseling from that person -- that's unrealistic…"

Q: You're skeptical of their ability, basically. "How good can it be?"

A: "Exactly! At the very basis, skeptical of their ability just based on… red flags, almost. Yonsei University isn't great at understanding international students. Therefore, would a counseling center *from* Yonsei University be able to do that? I don't think so. Are there Korean nationals who haven't really lived abroad running that counseling center? Then they wouldn't be able to know an international experience at all!"

Q: Do you feel like/Have you ever felt like your concerns or anxieties are/were not great enough to warrant speaking to a professional?

A: "I don't think that's quite how I view it. I think whatever your anxieties or troubles are, it's less so about the *size* of that anxiety or trouble, and more so *how* it's affecting your life. So if I did have this tiny, tiny, tiny problem -- like I don't know, I can't decide which detergent to use -- SOUNDS like a tiny problem, but if it's acting as some debilitating worry in my head, then that's the answer -- go seek help! What I'm trying to say is it doesn't matter [whether] "Is it serious enough?" or not, it's more so "Am I just having trouble right now?" And if so, then go."

Q. Do you find it difficult or uncomfortable to open up to someone you don't know?

A: "No! *[laughs loudly]* Oh God, I just talk so much. No. I think the concerns I have is less so "Do I know this person well or not?" and more so "if I do disclose any sort of sensitive information, what are they going to do with it?" And so, I could talk to a barista who I do NOT know at the corner coffee shop about my most intimate problem, just because I know that barista's not gonna do anything with it. What are they gonna do, tell somebody? The amount of closeness is very peripheral to what my concerns are when talking to somebody."

Q: So your main things, then, would be security and confidentiality?
A: "Confidentiality, yes."

Q: So as long as you feel it's confidential, that matters more than the degree of familiarity?
A: "Mm-hmm."

Q: Would talking to an impartial entity, such as an AI chatbot, help?
A: "... When thinking about that, I'm remembering my distrust in Yonsei's counseling body where I feel like a big misstep there, allegedly, would be that you just cannot understand what I'm going through. To give me advice that is very specific to my needs -- and of course, maybe you can hit me with counseling cliches - yes, that could solve the problem, but… I think one of the things that's really important for counseling is that through discussion, there's a sense of understanding, and in that understanding, there can be some sort of solution. Or maybe not a solution, but a path of progress based on understanding. And so for an AI -- I mean, I'd be willing to try…"

Q: Like if you think it's hard for a human to understand, then an AI would be even more unhelpful?
A: "That's kind of along the lines of what I'm getting at. Yeah."

Q. When I say "AI," or "chatbot," what comes to mind?
A: "'Chatbot' sounds a lot worse than 'AI.' I'm not entirely familiar with either, I'd say. 'AI' just sounds a little bit more trendy and smart, a little bit more 'this-is-the-future-of-our-society' and 'we're progressing with science and technology!' Whereas 'chatbot' just sounds so… like a weird, obscure message board on some dark corner of the internet."

Interview #9
Interviewer: Wonjun Choi
Interview Date: April 9th, 2020
Interviewee Information:

Age	26
Occupation	College Student
Gender	Male
Ethnicity	Korean
Relationship Status	Single

Hello, we are Information & Interaction Design students from Yonsei University. Our team is called Team NoDoubt, and you are here today to help us conduct a study for our Interaction Design class. Thank you for participating in this study. As a part of our course, our team is researching how English-speaking college students in

Korea manage their mental health and emotional wellbeing. We are conducting a few preliminary interviews this week for this purpose.

Q: How do you feel today?
A: I just finished a job interview and it went well, so I am feeling good.

Q: Have you ever used an emotional well-being app before? (meditation apps, mood journal apps, etc.)
A: Nope, never used any.

Q: Do you have a diary or a journal?
  Q: If you do, when do you use your diary or journal?
  A: I don't keep a separate journal or a diary, but I do use a memo app on my iPhone to write down thoughts and emotions. I write, but don't really look back into it. I think I write on it about once every 2-3 days.

Q: When do you feel stressed?
A: When there are too many schoolworks to do, I feel pressured. For example, there is a specific season[time] in the semester where there are many assignments, group projects, or exams and during this period I feel very stressed to complete many things in a very short time. I usually don't get stressed or I try not to be stressed about my career, because worrying and being stressed about it doesn't help at all. Instead, I try to approach those problems step by step.

Q: How do you relieve stress?
A: I alleviate stress by eating delicious food, and drink alcohol with my friends. I think that's all I do to relieve my stress.
  Q: Do you feel like that is sufficient in relieving your stress?
  A: I think that's enough for me since I don't get stressed too often.

Q: Is there a counselling center in your school?
A: I am not sure, but I think there is one in my school.
  Q: Do you know any counselling center around you?
  A: No, I don't know any.

Q: What do you think of people that go/have gone to therapy sessions?
A: I don't have any special thoughts about them, but I think it's really nice to have therapy if the person needs one. I heard a lot of people go through mental health issues, but they themselves are not aware of that, so many people miss the chance to go to a session.
  Q: Do you know anyone who has gone to therapy sessions?
  A: No.

Q: Have you ever had any sessions with a therapist?
A: No, never been to one.

Q: What do you think the biggest reasons people don't go to see a therapist, counselor, or other mental health professional are?

A: I think the biggest reason people don't seek mental health care is because people are not taking mental health issues seriously. Some are not even aware that they potentially have problems. They just regard it as simple stress and ignore it. Secondly, the atmosphere of the current society looks at going to therapy as something "bad", and they are worried that they might be judged.

Q: Do you feel like/Have you ever felt like your concerns or anxieties are/were not great enough to warrant speaking to a professional?
A: Definitely. I feel like the stress I currently have is not really serious; I don't think it's severe enough to impact my mental health. Stress I go through is very temporary, it comes and goes so it's very self-manageable.

Q: Do you find it difficult or uncomfortable to open up to someone you don't know?
A: To someone I don't know, I don't and wouldn't want to share my situation or problems with them. Even if they are professionals or experts, I don't trust them. If they are not close with me, or don't know me, I feel like they can fully understand the situation I am in, so I am not so confident in relying on them to alleviate or solve my concerns.

    Q: What about your friends/someone close to you?
    A: If it's my friends, or someone close to me, like my family, then I can talk to them because I believe that sharing and talking about my concerns with them helps to relieve my stress.

    Q: Would talking to an impartial entity, such as an AI chatbot, help?
    A: I think they are worse than talking to people you don't know [including professionals] because I am talking to them knowing that they are not human, so it feels very awkward for me. I think the key in communication is sharing of emotions, but machines can't do that. This is different from expressing yourself on SNS because you are expecting human feedback, who exchanges emotions.

Q: When I say "AI," or "chatbot," what comes to mind?
A: I think the chatbots are fascinating at first, but it isn't reliable at all. They talk very awkwardly, I can tell that they are machines right away, and I don't like to have emotionless communication. When I talk, I need the feeling that I am being understood.

Q: Final thoughts?
A: Once again, I want to emphasize that when I have concerns, I feel more confident opening up to friends and families instead of people I don't know, even if they are professionals; it's just the way how we are connected in personal life.

Interview #10
Interviewer: Wonjun Choi
Interview Date: April 10th, 2020
Interviewee Information:

Age	24

Occupation	College Student
Gender	Female
Ethnicity	Korean
Relationship Status	Single

Hello, we are Information & Interaction Design students from Yonsei University. Our team is called Team NoDoubt, and you are here today to help us conduct a study for our Interaction Design class. Thank you for participating in this study. As a part of our course, our team is researching how English-speaking college students in Korea manage their mental health and emotional wellbeing. We are conducting a few preliminary interviews this week for this purpose.

Q: How do you feel today?
A: Great, it has been a long time since I didn't come outside, so I'm feeling good.

Q: Have you ever used an emotional well-being app before? (meditation apps, mood journal apps, etc.)
A: Right now I don't regularly use any,
    Q: If you have, how was your experience with it/them?
    A: but in the past, I tried an app called mooda. Mooda is a type of mood journal. You can pick an emotion with cute faces for the day. It did have a cute design, which I liked, but at that time [last year], there were very limited choices of emotions to fully express myself, such as happy, sad..yeah. It was just something interesting.

Q: Do you have a diary or a journal?
    Q: If you do, when do you use your diary or journal?
    A: Yes, I have a journal. I write on it about once a week whenever I have free time; it doesn't have to be on special occasions. I write about what happened that day, nice phrases/sentences/quotes; most about what I did or felt that day.

Q: When do you feel stressed?
A: As a student, there are so many occasions [haha] I have two kinds of stresses, one is coming from myself, and the other is stress I get from the outside. The stress coming from myself is about me not doing anything(procrastinating) while having so much work to do, not meeting my own standards. When I cannot meet my own expectations, I get stressed.
During school, I get so much schoolworks that I don't know where to start. Even if I get one thing done, I get stressed thinking of the schoolworks that I have left to do. From outside would be from douchebags [haha] Some people don't have common senses which stresses me a lot. I guess it's a type of socializing issues, conflicting with others. When the other people have no logic for their actions, I have a hard time with nonsensical people.

Q: How do you relieve stress?

A: I usually watch movies, go to exhibitions, go for a walk around Han River. I think these 3 are the main things. I used to have drinking habits, but I noticed that it didn't solve anything, but made my situation worse. I got stressed from my drinking habits as well, so I stopped relying on alcohol.

Q: Do you feel like that is sufficient in relieving your stress?

A: It's not enough, I think it's temporary relief. But without these I won't be able to move on. It's the most I can do.

Q: Is there a counselling center in your school?
A: Yeah, I know one.

Q: Do you know any counselling center around you?

A: Not really.

Q: What do you think of people that go/have gone to therapy sessions?
A: That's cool. Basically, I don't care. I don't really have any thoughts about them.

Q: Do you know anyone who has gone to therapy sessions?

A: Yeah, some of my friends go to centers, but they don't share detailed experiences. So all I know is that some of my friends have gone to sessions. I don't know much about their satisfaction, but i think they got better after sessions.

Q: Have you ever had any sessions with a therapist?
A: No, but if there is a chance, I would like to go, I wouldn't hesitate.

Q: What do you think the biggest reasons people don't go to see a therapist, counselor, or other mental health professional are?
A: I know there was some kind of prejudice against people that go to sessions, but I think that problem is relieved these days. So the main reason would be people don't think that they are severe, so people think they don't need to go. People tend to go to centers as a last resort. They think the level of their stress is something that everybody else has.

Q: Do you feel like/Have you ever felt like your concerns or anxieties are/were not great enough to warrant speaking to a professional?
A: Yeah, when I shared my stress and story with my friends, all of them were feeling the same stress, which means it's not a special case. So I think the concerns I have are not that big of a deal to go seek a professional.

Q: Do you find it difficult or uncomfortable to open up to someone you don't know?
A: Depends on their credibility. If my concern is very severe, I would consider going.

Q: What about your friends/someone close to you?

A: I feel more comfortable sharing my stressed stories with friends or family, but I will never share any depressing thoughts, as I am afraid they might become depressed as well.

Q: Would talking to an impartial entity, such as an AI chatbot, help?

A: I don't think AI chatbot would help. Interacting with humans is better for me since we can share our own stories and experiences, but that's not possible with chatbots.

Q: When I say "AI," or "chatbot," what comes to mind?
A: I personally think chatbots are better fit for something like customer centers. I know that I am talking to a machine. That's all.

Q: Final thoughts?
A: I'm not sure if it's related to AI, but if the app has an entertaining way of diagnosing mental health concerns, I would definitely use it. It has to be friendly and fun.

II-d

2nd round interview transcript:

Interview #1
Interviewer: Chiwon Lee
Interview Date: April 24, 2020

나이 (Age)	26
직업 (Occupation)	College student (Senior)
성별 (Gender)	Female

Hello, we are Team NoDoubt from Interaction Design class. Our team is currently researching "efficient and effective ways to express/relieve stress on a smartphone for university students" and as a part of the research, we are conducting an interview. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we transcribe your response? If you say yes, we will proceed with the interview.

인터뷰 / Interview
1. "스트레스 푸는 것"을 시각화했을 때, 무엇이 떠오르나요? (When you visualize "releasing stress," what comes to mind?)
    a. When I think about visualizing releasing stress… Hm… I guess I think about black or grey turning into something of a more pastel colour? Or maybe a black or grey blob turning into something bright and luminous? Or maybe a rainbow? I guess a transition from dark to something bright.

2. 스트레스를 받았던 지난 경험을 되돌아보는 것이 도움이 될 것이라고 생각하나요? (Do you think reflecting on past events would help you move forward?)
    a. I think so. I was really, tremendously stressed out when I was preparing for college admissions. My health was really negatively affected I think. I think that reflecting back on that stressful experience let me be more chill and relaxed when it comes to similar situations. For example, I'm preparing to go to a graduate

school in the United Kingdom, and I am more relaxed because now I know that it's not necessary to stress too much on admissions. Being too stressed isn't going to help me. So, yeah, reflecting on my past experience of stress helps me.

3. 스트레스 받는 일에 대해서 표현하거나 쓸 의향이 있나요? 예) 일기
(Would you be willing to express/write about frustrations? ex) diary)
    a. Yeah. I think I would be willing to express my frustrations. I read from a book called "The Things They Carried" that writing about concerns is therapeutic. For example, the writer said that his comrade from the Vietnam war suicided while he survived because he wrote about his trauma from the war all the time. I think that I would try it out. However, I would try it out under the precondition that I wouldn't have to put too much time in writing since I'm really busy with homework. It would also be cool if there was an app that could do that. I mean if there's a fun and easy way to express my frustrations, that'd be great.

Interview #2
Interviewer: Joyce Lee
Interview Date: April 27, 2020

나이 (Age)	21
직업 (Occupation)	Student
성별 (Gender)	Male

Hello, we are Team NoDoubt from Interaction Design class. Our team is currently researching "efficient and effective ways to express/relieve stress on a smartphone for university students" and as a part of the research, we are conducting an interview. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we transcribe your response? If you say yes, we will proceed with the interview.

인터뷰 / Interview
1. "스트레스 푸는 것"을 시각화했을 때, 무엇이 떠오르나요? (When you visualize "releasing stress," what comes to mind?)
    a. Exercising. In my mind… I'm sweating.

2. 스트레스를 받았던 지난 경험을 되돌아보는 것이 도움이 될 것이라고 생각하나요? (Do you think reflecting on past events would help you move forward?)
    a. To some extent, but I don't think just overthinking or over-reflecting is a good thing. It's good to look back and see

where you made mistakes and then just move on. What happened, happened.

3. 스트레스 받는 일에 대해서 표현하거나 쓸 의향이 있나요? 예) 일기
    (Would you be willing to express/write about frustrations? ex) diary)
    a. I think that's actually a very good therapy [technique] that might work for a lot of people. Writing it down or talking to someone about that is a good way of releasing that anxiety and stress.

Interview #3
Interviewer: Nara Han
Interview Date: April 26, 2020

나이 (Age)	24
직업 (Occupation)	College student (Senior)
성별 (Gender)	Female

Hello, we are Team NoDoubt from Interaction Design class. Our team is currently researching "efficient and effective ways to express/relieve stress on a smartphone for university students" and as a part of the research, we are conducting an interview. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we transcribe your response? If you say yes, we will proceed with the interview.

인터뷰 / Interview
1. "스트레스 푸는 것"을 시각화했을 때, 무엇이 떠오르나요? (When you visualize "releasing stress," what comes to mind?)
    a. Well, you might say I'm a little dark after you hear this, but releasing stress to me is like break things? Maybe like by throwing them with all my strength. I just saw it on the TV show once and it looks pretty relieving to me. I wish I could do that but you know it's not possible in real life to smash things. I heard there's like this "break" room in Korea where you are officially allowed to break things if you pay money.

2. 스트레스를 받았던 지난 경험을 되돌아보는 것이 도움이 될 것이라고 생각하나요? (Do you think reflecting on past events would help you move forward?)
    a. Definitely yes. I mean the stressful things that I experienced were just stressful then. I look back at them and I'm like that was nothing most of the time. I don't know why I was obsessed with such little things. So when I look back at them, I try to remember what kind of thoughts and feelings I had back then and just not to

repeat them again because I know they were such minor things now.

3. 스트레스 받는 일에 대해서 표현하거나 쓸 의향이 있나요? 예) 일기
   (Would you be willing to express/write about frustrations? ex) diary)
   a. Hm...I guess…? I'm not so sure though. I don't really talk to people about some stressful things that are going on in my life. I just don't want to bother them with my thing when I already know everybody has a LOT on their plate!! So I just usually take some time to think over some things alone in my room and that tends to help me a lot. I don't think I even really expressed my frustrations before.

Interview #4
Interviewer: Wonjun Choi
Interview Date: April 24, 2020

나이 (Age)	25
직업 (Occupation)	Powerplant engineer
성별 (Gender)	Male

Hello, we are Team NoDoubt from Interaction Design class. Our team is currently researching "efficient and effective ways to express/relieve stress on a smartphone for university students" and as a part of the research, we are conducting an interview. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we transcribe your response? If you say yes, we will proceed with the interview.

인터뷰 / Interview
1. "스트레스 푸는 것"을 시각화했을 때, 무엇이 떠오르나요? (When you visualize "releasing stress," what comes to mind?)
   a. When I think of visualization of relieving stress, expressions such as eruption, explosion, speeding(driving), steam comes to my mind. I think these extreme expressions coming to mind are deeply related to my personality and my daily behavior. For instance, I enjoy a form of extreme sports such as circuit racing.

2. 스트레스를 받았던 지난 경험을 되돌아보는 것이 도움이 될 것이라고 생각하나요? (Do you think reflecting on past events would help you move forward?)
   a. I personally think it would not help at all. Life is a continuous cycle of stress, and I am going through enough stress at the moment, I don't want to add past stressful events to my current state. So I think reminding myself of past stressful events would be harmful to

my own mentality. It will not have any positive effect whatsoever, but rather be a disturbance in my present life.

3. 스트레스 받는 일에 대해서 표현하거나 쓸 의향이 있나요? 예) 일기
(Would you be willing to express/write about frustrations? ex) diary)
   a. I would not. I'm too busy to be wasting my time on expressing myself. I'm not the type of person who writes or takes notes of myself, especially negative ones. Again, I don't like reminding myself of difficult times I went through!

Interview #5
Interviewer: Wonjun Choi
Interview Date: April 25, 2020

나이 (Age)	24
직업 (Occupation)	University Student
성별 (Gender)	Female

Hello, we are Team NoDoubt from Interaction Design class. Our team is currently researching "efficient and effective ways to express/relieve stress on a smartphone for university students" and as a part of the research, we are conducting an interview. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we transcribe your response? If you say yes, we will proceed with the interview.

인터뷰 / Interview
1. "스트레스 푸는 것"을 시각화했을 때, 무엇이 떠오르나요? (When you visualize "releasing stress," what comes to mind?)
   a. crashing something, I dont know, maybe cars or glasses, with a bat. That's the first thing pops out of my mind. i think it's because there are lots of scenes in movies or dramas in which characters crash things when they get stressed or struggle with depressed emotions. Normally they go with their friends, crash things, and have some emotional bonding and run away,, u know. Or maybe,,, is it because I am the aggressive one..?

2. 스트레스를 받았던 지난 경험을 되돌아보는 것이 도움이 될 것이라고 생각하나요? (Do you think reflecting on past events would help you move forward?)
   a. Hmm.. well for me, I think it depends on how you reflect on those past events. If you keep thinking about every detail of that event, I don't think it would help. It may anchor you in the past and maybe makes you only regret or even more stressed, u know. Um so for me, instead of all those details.. reflecting on.. like overview and

key lessons? I'll say? of that event would definitely help to move forward.

3. 스트레스 받는 일에 대해서 표현하거나 쓸 의향이 있나요? 예) 일기
   (Would you be willing to express/write about frustrations? ex) diary)
   a. Yes, because I think bursting your stress out to writing is a really good way to ease your feelings and clear your thoughts. So,,,, when you write about your frustrations, especially when it is a personal writing only u can see, you just write shit about things and.. u know, feel better. But I won't keep those writings to myself for long, I just throw it right away. I will just use it as my,, um stress-relieving method? yeah. looking at those writings after some time may bring you to that stressful moment again. aaand no. I don't want that, so. Yep.

Interview #6
Interviewer: Wonjun Choi
Interview Date: April 25, 2020

나이 (Age)	24
직업 (Occupation)	University Student
성별 (Gender)	Female

Hello, we are Team NoDoubt from Interaction Design class. Our team is currently researching "efficient and effective ways to express/relieve stress on a smartphone for university students" and as a part of the research, we are conducting an interview. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we transcribe your response? If you say yes, we will proceed with the interview.

인터뷰 / Interview
1. "스트레스 푸는 것"을 시각화했을 때, 무엇이 떠오르나요? (When you visualize "releasing stress," what comes to mind?)
   a. When you say "releasing stress" I envision going out and doing something active to get my mind off of things. However, when I "relieve stress", usually I like to stay at home and do relaxing things like sleeping or watching netflix.

2. 스트레스를 받았던 지난 경험을 되돌아보는 것이 도움이 될 것이라고 생각하나요? (Do you think reflecting on past events would help you move forward?)
   a. I absolutely think that reflection helps me to move forward. I'm the kind of person that thinks of past events over and over again until I

come up with a logical conclusion to the issue/situation. Reflection allows me to revisit these past events, understand and process what happened and why it happened.

3. 스트레스 받는 일에 대해서 표현하거나 쓸 의향이 있나요? 예) 일기
(Would you be willing to express/write about frustrations? ex) diary)
   a. I only do this when I am actually writing to a person. If it is for the purpose of a diary, I don't think I would be interested in writing down my thoughts. I'm too lazy to go to that extent.

Interview #7
Interviewer: Wonjun Choi
Interview Date: April 25, 2020

나이 (Age)	27
직업 (Occupation)	Product Manager
성별 (Gender)	Male

Hello, we are Team NoDoubt from Interaction Design class. Our team is currently researching "efficient and effective ways to express/relieve stress on a smartphone for university students" and as a part of the research, we are conducting an interview. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we transcribe your response? If you say yes, we will proceed with the interview.

인터뷰 / Interview
1. "스트레스 푸는 것"을 시각화했을 때, 무엇이 떠오르나요? (When you visualize "releasing stress," what comes to mind?)
   a. The first thing that comes to my mind is the view from the top of a mountain. I usually go to a mountain when I feel stressed. While I walk, I can forget bad things and get rid of stress. Another thing is delicious foods I like such as fried chicken and tonkatsu. Since eating delicious foods makes me happy, just thinking of them helps me to release stress.

2. 스트레스를 받았던 지난 경험을 되돌아보는 것이 도움이 될 것이라고 생각하나요? (Do you think reflecting on past events would help you move forward?)
   a. It depends on the situation. If the situation is really bad and bothering, reflecting on the memory worsens my feelings. On the other hand, if the situation is not serious, reflecting on it does nothing to me.

3. 스트레스 받는 일에 대해서 표현하거나 쓸 의향이 있나요? 예) 일기
   (Would you be willing to express/write about frustrations? ex) diary)
   a. Personally, I don't like to write because there are many other ways to express my frustrations such as watching a movie, listening to music, and playing instruments. I can just think about the frustration and overcome it without writing about it. I don't want to leave traces of my bad memories.

Interview #8
Interviewer: Wonjun Choi
Interview Date: April 25, 2020

나이 (Age)	26
직업 (Occupation)	University Student
성별 (Gender)	Male

Hello, we are Team NoDoubt from Interaction Design class. Our team is currently researching "efficient and effective ways to express/relieve stress on a smartphone for university students" and as a part of the research, we are conducting an interview. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we transcribe your response? If you say yes, we will proceed with the interview.

인터뷰 / Interview
1. "스트레스 푸는 것"을 시각화했을 때, 무엇이 떠오르나요? (When you visualize "releasing stress," what comes to mind?)
   a. My type of releasing stress would be doing nothing in my bed with my big cup full of iced coffee next to me. I'm watching Netflix without watching the time and I can always take a nap if I want. Taking a long and worry-free break, that's what I do.

2. 스트레스를 받았던 지난 경험을 되돌아보는 것이 도움이 될 것이라고 생각하나요? (Do you think reflecting on past events would help you move forward?)
   a. I'm most of the times quite optimistic and tend to forget things very well. Reflecting on past events, for me, would be another stress because I would have already forgotten about it by the time I'm looking back at it.

3. 스트레스 받는 일에 대해서 표현하거나 쓸 의향이 있나요? 예) 일기
   (Would you be willing to express/write about frustrations? ex) diary)
   a. Nah, I don't know about others but not for me. It's tedious and more annoying to write them down. I would rather move on and do something else that will get my attention out of that stressful thing.

Or I think I might just go to sleep to get away from it as quickly as possible.

II-e

Focus group transcript:

Hello! Thank you for participating in this focus group. We are Team NoDoubt, students at Yonsei University taking the course Interaction Design. We are conducting this focus group in order to learn more about our potential users, and also gain feedback on some design alternatives. Please have in mind that there are no right or wrong answers. Moreover, your responses will only be used for user research purposes, and your name will not show in our organized demographic data.

1. When are you stressed?

    P4: I feel stressed when I have homework coming up.. I feel especially stressed when I have a list of things that I have to do but I haven't done anything yet.
    P2: Yeahh, I get like that as well.
    P3: In my case, I feel stressed when due dates are coming up for school work. Sometimes, when I pull an allnighter and only have about 2 hours left to sleep before class, I can't decide whether to go to sleep or not.
    P1: I also feel stressed when there's a lot of homework too. I also feel stressed when I don't have a clear idea of what to do next, like just in life generally.
    P2: I for one just never do all-nighters if I can help it, it really wrecks my mood and health… What was the question? When do I get stressed? Well that varies. Uh… sometimes my parents stress me out, but I love them, so… and when school gets to be too much, I'm tempted to just stop doing anything and lowkey give up. Which isn't good of course *(laughs)*

    1.1. Does this change throughout the day/year?

    P4: It changes throughout the year. For instance, I feel really stressed during the midterms or finals. I also feel stressed before the semester starts. I also feel stressed before a big meeting for my job. So, I guess anytime before a stressful event? But mainly during midterm and finals season.
    P3: Yeah, I think it changes on a daily basis for me.
    P1: I agree with all of you. It does change a lot on a daily basis and also throughout the year. Even within the day, like one minute, I'm like it's nothing but like 5 minutes later, I just feel really really stressed. In terms of the year, I feel stressed when the semester begins and ends because I'm thinking, what did I do this semester or like what am I going to do this semester since I want to do something that seems really important for my future.

P2: Ahahaha. Yeah, I get like that… I don't know if there are *particular* times of the year where I get stressed, per se. But, I do think I'm a lot happier when the sun's out. It just naturally buoys my mood. But absolutely if I had a serious responsibility to like my job I'd be constantly stressed about that, I think.

2. How do you cope with stress?

P4: I cope with stress by just doing nothing or like going through my phone. Oh right, I go through my phone or laptop. I try to look at images or memes that do not stress me out, you know, like carefree memes. I don't want to see anything stressful.

P3: I usually try to complete the task as soon as possible, and as a reward, I'd grab myself some beer.

P2: Right, same. I also call my friends a lot. There's nothing like having a really close friend who understands you listen to you just go off about your day or whatever it is you're strung about, and then help you out a little. I like doing the same in return.

P1: I just like to spend my time alone like in my room thinking or watching Netflix. Just some shows that I watched like more than 10 times and lying down helps me organize my thoughts. I don't think I go to my friends for help a lot.

P2: Kind of the opposite of me then, ahaha. Oh right, I forgot to mention, meditating outside helps a lot when I have the time for it, and it kinda goes in hand with how the sun just naturally lifts my mood I think.

3. How do you visualize stress?

P4: I visualize stress as a black blob that has a bad personality. I feel like stress is a toxic friend that isn't really leaving

P3: In my case, when I am under serious stress, I tend to dream about it when I fall asleep. I dream about myself at a very high place like on the peak of a mountain or like a tall building, and jump off from it, knowing that it's a dream. Then, I feel like I'm flying.

P1: I agree with P4 about the black blob thing. I've never given the blob a personality but just when I think of stress, this massive black blob comes into mind. And it's also interesting how P3 mentioned dreams because when I get stressed about a certain thing, I usually dream about that after like 4 hours of not being able to fall asleep.

P2: Wow, you guys are metal...

(everyone laughs)

P2: Stress doesn't have this physical form for me.. It's just this dull, throbbing persistent pain in my head that doesn't go away until I do something about it. Like sleep. But even that doesn't always work.

4. When was the lowest time for your life?

P4: The lowest time of my life was when I was preparing for admissions to college. Oh, actually, one of the lowest parts of my life was when I broke up with my boyfriend. That was extremely

tough. It was also a low point for me when I decided to not see a friend anymore because of an altercation.

P2: God, I can relate. I'm sorry about that.

P4: Another low point is when I was criticized at work for something that I couldn't do much about. I guess I faced multiple moments of low haha.

P3: Just like P4, I have multiple "low times" related to school admissions. I was studying in Canada, and received my admission to my dream university, but I had to leave the country for denial of permanent residency. So, I had to go through the entire admission process once again in Korea, which was really stressful.

P1: Hm...It's amazing how you guys can come up with your lowest time that fast. I don't know why but when I look back at my life, it just seems that everything wasn't that bad. I know like college admission was really tough, but somehow, I loved that time of my life because it was just fun to study with my friends and just go through the hard times with them. So when I look back, it's just like "Oh I miss those times."

P2: Yeah, and I try to remember like, whatever you're going through now, the You that will exist a few years from now will look back and be really proud of the You now that's going through those things, and growing and learning. But anyways, I've hit several low points, I think the worst one by far was just last year, it's sort of similar to what P4 shared, but uh… *(pause)* without going into it too much, I was traumatized by a few different people I thought I could trust, and it took some time to recover from it. College of course can be really stressful, but all the worst times in my life, it was because my relationships with people close to me deteriorated. Not cuz of school as much.

5. What helped you overcome that time?

P4: I think that friends and family helped, but especially, my phone and laptop helps a lot.

P2: I sound a bit like a broken record here, but my friends definitely helped me. It's true. They were a lot more understanding and had more time for me and accepting than like, my parents would be, I think. I also had a dog, he was wonderful [for helping me feel better].

P1: I know what you mean by your pet helping you. I also have a dog and he is just like the best energy in my house. Just playing with him made me feel better. I lived in the dorms during high school so whenever I felt overwhelmed by all the studies, I would just go home for the weekends to play with him. Also, just ordering some chicken or pizza with my friends in the dorms was like these small happinesses that helped me deal with stress.

P3: Unlike P4 or P2, not only that I didn't have any friends to talk to in Korea, I just didn't want to talk to anyone, it felt like the end of the world for me [haha]. I can relate to P1 about dogs being the best energy, spending time with my dog was, and still is everything for me!

6. Does stress affect how you behave?

P4: Yeah, my family says they can feel that I am really down and lifeless. I don't talk much and my facial expressions reduce to a bare minimum. Sometimes, I will say things that I don't mean, and I will regret it when I'm stressed. I wish there was a way to release stress in a better way. Man, maybe I need a personal therapist but that's expensive.

P2: Aw.

P3: Yeah, I hate to regret the things I said which I shouldn't have had. So, I tend to avoid meeting people, even my friends and family, when I am under extreme stress. I know it's bad, but I go for chainsmoking..

P1: I heard that a lot of smokers do that.

P2: Yeah, you don't have to feel too guilty about that, I've done it.

P1: I also agree with saying things that I shouldn't have and regretting that. I usually do that to people who are close to me like my families or sometimes even my friends, and it just really brings out the ugly side of me, and I feel really bad and guilty about it.

7. What are the usual causes of stress in your life?

P4: The usual causes of stress in my life is studying, love, friendship, food, sleep, all the responsibilities I have as a 20 something living on this planet haha.

P2: Yup… I think she nailed it.

(everyone laughs)

P2: There are more personal things as well that can cause me stress, but I don't really dwell on them because there's no 'fixing' it right now. I just remind myself that things will always work out, maybe not the way they want you to, but they will.

P1: Haha I agree. It's just everything around me that stresses me out but also makes me happy, like the things that you (looking at P4) said: studying, love, friendship and such.

P3: Yeah everything P4 said haha. As a side effect, even small stuff makes me really sensitive, like when there are a lot of people on the metro, I don't even want to think about it..

8. Would you use an app to release stress?

P4: Yeah, if it's effective, and if the price is reasonable yeah. Because I look on my phone anyways when I'm stressed.

P2: And I already do anyways. I've got something called 'Insight Timer' at the moment, it's like… it's aight, but I liked Headspace more, back when it was free. Visualized meditations are pretty cool. Oh actually though, I'm actually learning Arabic right now, and it's funny because that's actual work, learning a language, but it always puts me at such peace when I'm practicing Arabic *(laughs)*. So Duolingo counts?

P1: Haha that's cool. Learning a new language will never put me at peace. Hm I never used an app to release stress. Oh but maybe like playing games? I play MarioKart on my phone and I guess it helps

me relieve stress. So yeah if there was an app that could really like effectively help me release stress, I can try to use it.

P3: I think learning a new language to relieve would give me more stress, to be honest, haha. I have never used a stress-relief dedicated app, but I do use an app as a journal purpose, to keep a record of my events in general, stressful or joyful.

9. How would you "let go" of your problems, if you could in any way?

P4: I guess I would write my concerns on a paper, crumble it up, and then throw it away. Or like say all of my problems out loud and try to forget about it. Or cry my problems away.

P2: I used to write down my problems, but then I wouldn't want to throw them away, I'd hold onto them because they'd become a memento of who I was and what I once struggled with, but then THAT becomes a problem because I end up hanging onto a lot of baggage… that's why I don't write things down anymore *(laughs)* To me, when I imagine "letting go" of problems, I imagine myself standing by a riverbank listening to music. Like the OK Computer album by Radiohead. *(beat)* I've actually done this exact thing before and it worked!

P1: That's awesome! I never tried any of the methods you guys said. I would just try to solve it? If it's like something that I can solve if I try. If it's something out of my control, I would just try to concentrate on other things, like TV or cooking, or any other homework. But if I were to imagine like letting go of my concerns, I think of just relaxing overall and closing my eyes.

P3: Hmm, it's interesting to see the responses. In my case, I think "letting it go" would just alleviate stress for that instance only, it doesn't solve my initial problem,, right?

9.1. Would burning it help?

P4: Yeah. I mean I heard that personal therapists, the expensive kind, burn your problems for you.

P2: Not for me.

P3: Yes, I don't know if it has any therapeutic effect, but when I see my cigarette burning, I do get satisfaction. So if I were to burn my problems, it would be even more satisfying!

P1: If like there's no actual danger of fire, yes. That would be cool.

9.2. What about putting a message in a bottle and casting it into the ocean?

P4: I saw that in a children's book and that has been my dream ever since. I'm kidding, but then again, I'm not. Actually, that sounds like a good idea. I actually want to do that now.

P2: I actually would never, I'm constantly worried about how polluted the ocean is-- oh but, if it were an app, then hm… I'd try it. No big expectations though.

P3: Yeah, this sounds fun, but then again, just like what P2 said, I consider myself an environmentally friendly person, so I wouldn't.

P1: Hm...I saw it a lot in the movies like pirate movies? But hm...I don't think it would really help me.

10. In your experience/opinion, does journaling help alleviate these symptoms at all?

P4: Yeah, I read in a book that journaling helps tons. It helps release stress and gives catharsis.

P2: It definitely can, but like I said earlier in my case, it ends up backfiring on me. Oops…

P1: I don't think like the actual journal would help me but keeping a journal with all my thoughts and to do lists organized would definitely like decrease my level of stress since I know what I have to do next, or I know why I did such things before.

P3: Forcing yourself to write regularly could be another stressful element, but I do write randomly and it has helped me out significantly, I've been keeping a journal on-going, I think it's my 7th year right now.

10.1. What if every time you type (or talk) about your day and feelings, there's a domino block created in the color that represents your mood for the day, and you get to knock them down like a domino?

P4: Oh my goodness that would be awesome. I'd use that.

P2: Hm… I think I'd try it once as a novelty, but I can see myself just using it once and then never again. I'm not very good at using those types of things on a daily basis, not even duolingo, which gives you incentive to keep 'playing' everyday. Snapchat streaks don't even do that for me either. So anyways what I'm trying to say is, I'm not motivated like at all to do something everyday, unless I actually make it a personal goal.

P1: Hm..I mean I love dominos and I did them a lot when I was young. I think it would be pretty cool. I mean I would try it at first, and if I like it, I would keep on using it.

P3: That reminds me of Dominos Pizza, my favourite pizza place haha just kidding, I think this is a very cute idea to provide the user a quick insight of the past events!

10.2. Which do you think would be better: writing down the journal or recording your voice?

P4: Hm… I think it would depend on the day. If I'm super exhausted, I would record my voice, if not, I would write?

P2: Yeah? I would write. If it was too much to write, I'd leave a voice memo, but in general, I like looking back on what I've written, not listening to my own voice.

P1: Hm..writing down? I think I would feel a bit awkward talking to a phone and there's no one on the other line. But

I agree with P4 because I never want to type when I'm too tired.

P3: I'm not too confident with recording my voice..so, I'd go with writing!

10.3. How would you feel if your content of the journal was color-coded based on your emotion?

P4: I think that would be visually entertaining.

P2: Yeah that'd be pretty.

P1: I love pretty things so yes. I would definitely love that.

P3: Yes, the color would help me replicate the mood of the time of writing!

10.4. Would providing you with options based on detected words from the content you write to be helpful?

P4: Yeah, that would be pretty cool. I would love that. It would be convenient.

P2: I don't know, I…. I don't know if that'd be helpful for me, honestly.

P1: Hm. If they are able to detect the words very well without any errors it would be pretty cool, but if there's like too many mistakes, then it would just be a useless feature. I also think it depends on like why the service would be detecting the words.

P3: I'm not sure..I would feel like someone is reading my writing..

11. Would chatting with someone about what's giving you anxiety or stressing you out help?

P4: Definitely yes. I buy food or drinks to friends who hear me out as I know that it helps.

P2: I do that all the time already

P1: Not for me. I just like being alone when I feel anxious or stressed out.

P3: Not for me as well, as I mentioned earlier, I tend to stay alone, not talk to anyone since I am afraid I might make a mistake.

11.1. What if it was an AI?

P4: I would definitely try it out since I wanted to do that ever since science fiction movies depicted it.

P2: Again, I myself would try it out for novelty, but that's it. No AI has managed to keep me as a constant chat buddy since like the MSN SmarterChild days.

P1: I agree with P2. I would try since it sounds cool but I feel like I won't be able to stick with that idea for long.

P3: I am currently studying AI and I would use it once in a while, for entertainment!

11.2. Do you have a preference for the AI's personality? (Sassy, compassionate, professional, etc.)

P4: Sassy sounds fun, but compassionate may be more effective? I don't know, I think it would depend on my mood.

P2: Aha, interesting, I'd try them all. I'd try them all but, at the end of the day, my friends are also usually readily available to talk whenever, so I'd still choose them over an AI. I'd end up uninstalling [the AI] before long.

P1: Haha sassy also sounds fun for me too. But again, like P4 said, when I feel stressed out like seriously, then sassy personality might hurt me I guess. So I might be discouraged to use the system when I feel really stressed.

P3: Sassy, I don't think I am comfortable with compassion from a machine!

12. Do pets, in your experience, help alleviate some of your symptoms of stress?

P4: Yes!! I have a pet dog, and I go home to just hug and pet my dog. She's a little angel and she makes the world a better place. Healing to the max with a pet dog.

P2: God, yes, a million times yes. I no longer have a dog anymore but I wish everyday I did. I think just taking care of someone and cuddling with them does *so* much.

P1: Yes! Definitely yes. I would love to have my dog as a hologram and pet him anywhere.

P3: Yes, I do the same thing as P4. I don't think I'll be able to survive without my dog

12.1. Have you ever had a virtual pet before?

P4: Yes! I did.. I forgot.. Uh.. It was a game. It's the only game I ever played, and it was about raising a virtual pet. Neopet?? Oh I think it was named Neopet.

P2: Oh my God, Neopets!! Yes, me too. Big time. I also had Tamagotchis for a long time, and other things too

P1: I think I did when I was young but I don't remember.

P3: A long time ago, it's called Nintendogs, not sure if you guys are aware of it tho haha

12.2. Did it help you feel better?

P4: It did! But I quit the game when it made me feel that I have to be competitive. I didn't want to feel too stressed because of the game.

P2: I wouldn't say it helped me feel 'better,' it just became a new routine, compulsory thing to do everyday. When it wore off on me, I'd stop. Like Animal Crossing. Animal Crossing is a very therapeutic game in my opinion -- actually, there's a lot of games that do that, like Stardew Valley -- but there always comes that day where you stop playing, you know? So anyways yeah. It helped me feel better for a period of time, until I got sick of it…

P1: I think it did. But back then, it was only to have fun and mostly because I wanted a dog. If I used it now, it would definitely be for healing purposes.

P3: Back then when I was on it, I don't think it helped me directly because it was more of a time killer, but if I were

to use it under such intentions or assumptions, I think it could help me.

II-f
Card sorting results:

Participants

Completion	Time taken	Location
4 out of 5	**8**m **52**s	**South Korea** 100 %
4 of 5 (80%) participants completed your study. 1 abandoned.	It took your participants a median time of 08:52 to complete the study. The longest time was 46:52 and the shortest was 03:57.	Your participants were mainly from South Korea. You set up an English (UK) language study.

Categories

Categories created	Standardization
Your participants created a **total of 32 categories**, with a **median of 8 categories** each.	

Card	Sorted into	Categories Show all	Frequency	Average position
"Black blob"	4 different categories	visual	1 time	5.0
		Negative Emotions	1 time	2.0
		What stress looks like	1 time	1.0
		▼ Show 1 more category		
Alone time	4 different categories	Solitary Activity	1 time	8.0
		Ways to relieve stress	1 time	2.0
		long term which I prefer	1 time	1.0
		▼ Show 1 more category		
Animal Crossing	4 different categories	My dream way to relieve stress	1 time	5.0
		Games	1 time	4.0
		companion	1 time	4.0
		▼ Show 1 more category		
Burning paper	4 different categories	My dream way to relieve stress	1 time	4.0
		visual	1 time	2.0
		Solitary Activity	1 time	2.0
		▼ Show 1 more category		

	Participant	Time taken	Cards sorted	Categories created	Categories named
☐	Participant 1	Abandoned	0%	0	0%
☐	Participant 2	00:06:53	100%	8	100%
☐	Participant 3	00:46:52	100%	10	100%
☐	Participant 4	00:03:57	86%	5	100%
☐	Participant 5	00:10:51	100%	8	100%

	Category	Contains	Cards Show all	Freq	Avg pos	Created by
☐	📁 avoid under stress	**1** different cards	Friends and family	1	1.0	**1** participants
☐	📁 Basic Maslow Hierarchy	**2** different cards	Food	1	2.0	**1** participants
			Sleeping	1	1.0	
☐	📁 companion	**4** different cards	Animal Crossing	1	4.0	**1** participants
			Virtual pet	1	3.0	
			Tamagotchi	1	2.0	
			▼ Show 1 more card			
☐	📁 Consequences	**3** different cards	Jumping off a tall building	1	3.0	**1** participants
			Crying	1	2.0	
			Dreams/Nightmares	1	1.0	
☐	📁 Don't know what this is	**1** different cards	Neopets	1	1.0	**1** participants

Recording voice journal

100																									Color-coding mood journal
66	66																								Burning paper
33	33	75																							Cast off to ocean
33	33	75	100																						Visualized meditation
33	33	50	50	50																					Jumping off a tall building
0	0	25	25	25	75																				Crying
0	0	0	0	0	25	50																			Smoking
0	0	0	0	0	25	75																			Drinking
0	0	0	0	0	0	25	25																		Food
0	0	0	0	0	0	25	25	100																	Sleeping
33	33	25	0	0	0	0	0	25	25																Alone time
33	33	25	0	0	0	0	0	25	25	100															Music
33	33	25	0	0	0	0	0	25	25	75	75														Netflix
0	0	25	25	25	0	0	0	25	25	50	50	50													Memes
0	0	33	66	66	0	0	0	33	33	33	33	33	66												Domino
0	0	0	0	0	0	0	0	25	25	25	25	25	25	33											Tamagotchi
33	33	25	25	25	25	0	0	0	0	0	0	0	0	0	75										Virtual pet
33	33	25	25	25	25	0	0	0	0	0	0	0	0	0	75	100									Animal Crossing
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	75	75								Neopets
0	0	0	0	0	0	0	0	25	25	25	25	50	50	33	50	25	25	25							Gaming
0	0	0	0	0	0	0	0	25	25	50	50	25	33	25	0	0	0	25							Relationships
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50							Exams
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	100						Homework
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	50	50					Friends and family
0	0	25	25	25	25	25	25	0	0	0	0	0	0	25	33	0	0	0	0	0	25	25	25	25	"Black blob"

The actual agreement method works best with 30 or more participants and will depict only absolutely factual relationships. We call this the skeptical dendrogram.
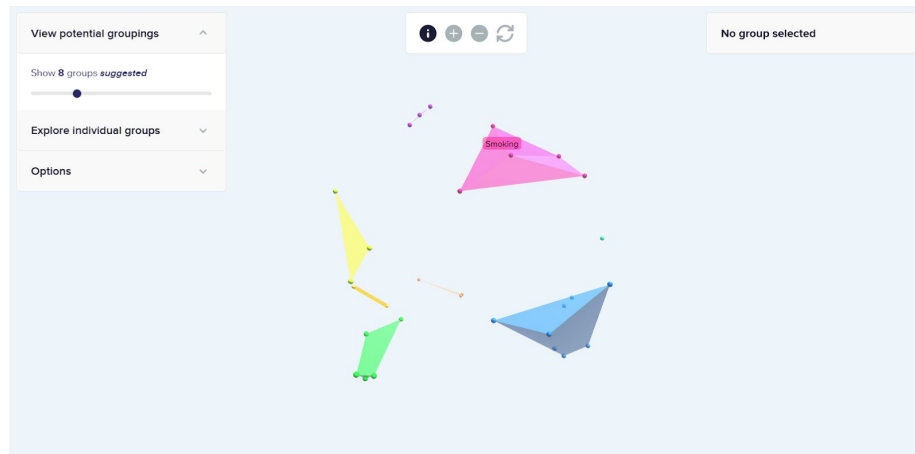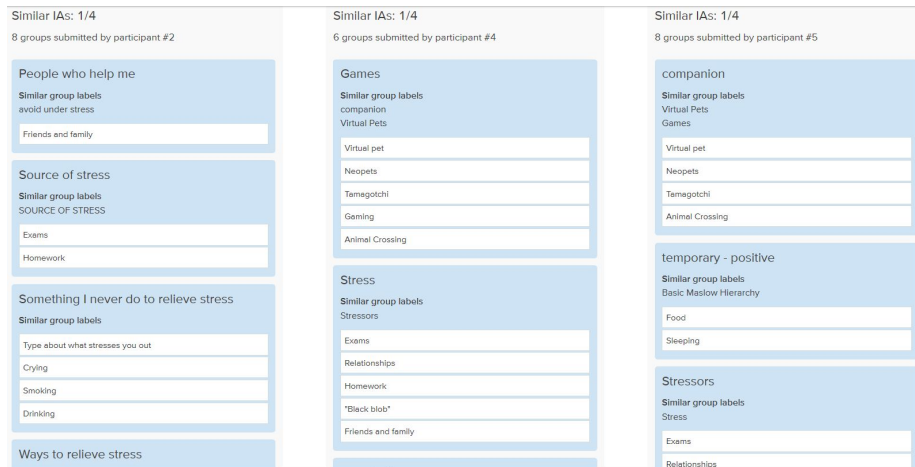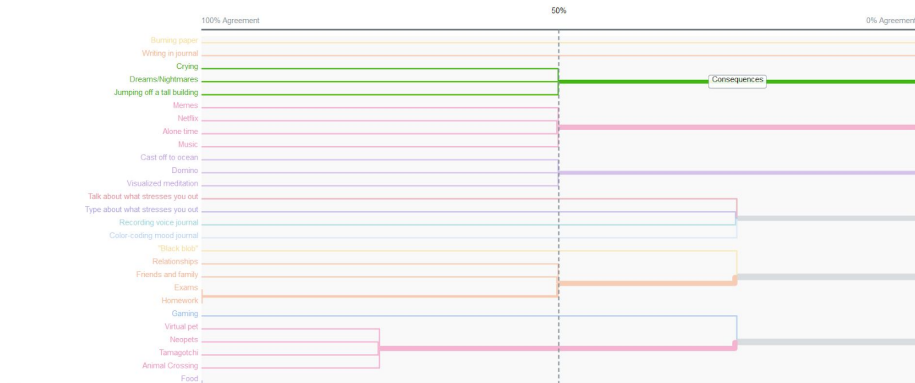
II-g
Consent form:
[Censored due to privacy concerns]

II-h

User Testing & Interview Transcripts and Results:

INTERVIEW
Interview 1
Interviewer: Chiwon Lee
Interview Date: June 7, 2020

나이 (Age)	25
성별 (Gender)	Male
직업 (Occupation)	College Student
상담 경험 유무 (Counseling Experience)	O

Hello, we are Team NoDoubt, a team of Yonsei University students that is taking a class named Interaction Design. We have developed a prototype named "Safespace," a mobile application prototype that aims to tackle the pain point of generalized anxiety amongst college students via technology. As a means of user testing, we are conducting an interview. You will be conducting benchmark tasks that we tell you to do, and then you will be given some questions regarding your experience of conducting those tasks. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we take a video, audio recording, and notes as a means to record this session? It is okay to say no to the video recording. If you say yes to audio recording and note-taking, we will proceed with the interview.

Q. Please interact with Sissy tab, the VUI feature of our app.
A. Sure.

Q. How was your experience?
A. When I was interacting with Siri, it didn't feel like I was interacting with a person at all. It felt like I was interacting with a robot. However, this app feels much more natural. I think it's because the chat has a personality. I also like the voice. It sounds like the human-like robot that fully interacts with Matt Damon in the movie "The Martian." I would also like to say that I thought it was much more refreshing than other AI chatbots because it had a personality.

Q. Do you think that this feature would be helpful?

A. I think that this feature is helpful because having the AI chatbot that has a personality feels much more natural. I think that having a sassier personality would also be nice since the conversation would even seem more natural in my opinion.

Q. What do you think about the input function?
A. I think that the voice input detection must be super good in order for the input function to only be put as voice. So, I think that it is great that there is an input option for typing. Since voice user input is not that advanced at this time, I think having a type option for users is a must. I think it would be annoying if the service does not pick up my voice input at all times. So, yeah. I think a type input is necessary.

Q. Please interact with the Let Go tab, the feature that virtually burns your unnecessary concerns.
A. Sure! Oh, this is really cute.

Q. How was your experience?
A. I thought it was really cute. I think it's really good. I attended a therapy session before and I have heard about this. I heard that my friend did it but I wasn't able to do it because I thought it was too expensive to add on visual catharsis therapy at that time. I think that this is game-like, and very entertaining in this sense. I want to emphasize that it is a really cute function.

Q. Do you think that this feature would be helpful?
A. Hmm… I don't think this would cure my problems. But I think that it is a great option for me to resort to when I am not able to meet close friends. I have to meet really close friends to be able to talk about my problems to relieve my stress. However, this function is a quick fix that I think that I would actually use. Although I think that people with serious concerns regarding mental health should seek professional help, I think that this function is awesome for people with generalized anxiety and concerns like me since I can use it anytime and anywhere. As I said, it's a quick fix. For example, I can't drink and talk about my problems to a close friend often, so this would be helpful.

Q. Please interact with the Safespace tab, the VR spaces that you can choose to destress in when you are stressed.
A. Oh, wow. It's cool that this app has a VR feature. Super interesting.

Q. How was your experience?
A. I think it was cool! However, I think it would be great if I could see a video than a still image. For example, when I think about the ocean, I want to see waves moving and hear the sound of the waves crashing on the sand. So, I hope that the VR experience is a bit more enriched.

Q. Do you think that this feature would be helpful?
A. Yeah, I think this feature would be really helpful. I feel like escaping from reality when I am really stressed, so this VR safespace feature would be really helpful to get my mind off unnecessary concerns. For example, I watch a lot of Youtube videos of peaceful places like an aquarium or the zoo. This is called ASMR, and I like it. I think this would be like a mental ASMR.

Q. Please interact with the Settings tab.
A. Sure! Oh, it's really simple.

Q. How was your experience?
A. It was great! I liked the disclaimer at the start that shows that this app won't save any personal data. However, I think that it would be great if there is a reminder somewhere in the Settings tab that reminds me that my personal data is not being recorded because I would be talking about sensitive issues in the app.

Q. Do you think that this feature would be helpful?
A. Yeah! I think this is a very comprehensive solution to generalized anxiety that I have. It would be like a mini safe space in my phone. I get why the app is named this way. I hope this app is available to all college students.

[Ratings]
Q. On a scale of 1 to 10, please rate the AI voicebot ("Sissy").
A. Hm.. I think 8 because I liked the personality.

Q. On a scale of 1 to 10, please rate the Let Go tab.
A. I think a 10 because it was really cute.

Q. On a scale of 1 to 10, please rate the VR Safespace tab.
A. I would give it a 6 because I wish it was a video instead of a still image.

Q. On a scale of 1 to 10, please rate the Settings tab.
A. I would say 7 because I liked how it guarded privacy.

Q. On a scale of 1 to 10, please rate the overall application prototype.
A. I would say a 9! It's really comprehensive and I was impressed! I hope all college students could have access to this kind of app.

Thank you for participating in this interview! Your feedback is highly appreciated.

INTERVIEW
Interview 2
Interviewer: Chiwon Lee
Interview Date: June 7, 2020

나이 (Age)	26
성별 (Gender)	Male
직업 (Occupation)	College Student

상담 경험 유무 (Counseling Experience)	O

Hello, we are Team NoDoubt, a team of Yonsei University students that is taking a class named Interaction Design. We have developed a prototype named "Safespace," a mobile application prototype that aims to tackle the pain point of generalized anxiety amongst college students via technology. As a means of user testing, we are conducting an interview. You will be conducting benchmark tasks that we tell you to do, and then you will be given some questions regarding your experience of conducting those tasks. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we take a video, audio recording, and notes as a means to record this session? It is okay to say no to the video recording. If you say yes to audio recording and note-taking, we will proceed with the interview.

Q. Please interact with Sissy tab, the VUI feature of our app.
A. Oh, okay!

Q. How was your experience?
A. I personally liked it! There is a perception that AI services are really dull and not fun. I think that the incorporation of a personality would allow users to have an emotional attachment with the AI, which is important when it comes to counseling sessions. You want to feel like you are talking to a human, and humans have personalities.

Q. Do you think that this feature would be helpful?
A. I think that this would be helpful personally. I also liked that text input was available because I know that there are people who get more anxious when there is a lot of people around. When there is a lot of people around, the texting function would be great! The user would be able to fire up the app when he or she is feeling anxious in the crowd.

Q. Please interact with the Let Go tab, the feature that virtually burns your unnecessary concerns.
A. Okay! Oh, this is interesting.

Q. How was your experience?
A. It was great! This reminded me of a popular app that made your concerns written down vanish away. I liked it because it was more interactive since I got to engage with the app! I thought that it was really fun to shake the app and blow on the screen. I think the features are neat. However, I think that it would be good if the haptic interaction features are optional since I may feel lethargic and want to relax.

Q. Do you think that this feature would be helpful?
A. I think it would be helpful since I used the app that makes my concerns vanish before, but I have a concern about whether the concern that I wrote down would be

stored in a database. I think that there should be a reminder that assures me that the concerns that I write down are not being stored.

Q. Please interact with the Safespace tab, the VR spaces that you can choose to destress in when you are stressed.
A. Okay.

Q. How was your experience?
A. It was great! However, I think that it would be great if I could engage more with the VR safe space like I can with VR platforms such as VRChat.

Q. Do you think that this feature would be helpful?
A. Yes! I think that it is a great function that could allow people to experience what counselors tell students to do. It's hard to imagine a place when I'm stressed, so I love that the app allows me to see a space I would take comfort in. Moreover, I like that I can just say a place that I feel that I would feel comfortable in instead of typing and searching for a location since I would want minimal stages in order to get to a VR safe space when I'm stressed.

Q. Please interact with the Settings tab.
A. Sure.

Q. How was your experience?
A. It was great that the app did not ask for personal information.

Q. Do you think that this feature would be helpful?
A. I think that it is helpful that there is a dark mode since I would use this app before sleep since I have a hard time falling asleep due to generalized concerns. I also think that the fact that the app does not require personal information is great since users including me have a lot of privacy concerns regarding services for mental health.

[Ratings]
Q. On a scale of 0 to 10, please rate the AI voicebot ("Sissy").
A. I liked it a lot. So, 9.

Q. On a scale of 0 to 10, please rate the Let Go tab.
A. It was super cute. I liked the haptic too so 9.

Q. On a scale of 0 to 10, please rate the VR Safespace tab.
A. I wish it was more interactive but I think it's great since other therapy apps that I know don't have it so 7.

Q. On a scale of 0 to 10, please rate the Settings tab.
A. I think there should be more indicators regarding safety but overall 7 since it's simple.

Q. On a scale of 0 to 10, please rate the overall application prototype.
A. I think a 9! It's an awesome app. I think your idea is great. Timely and useful.

Thank you for participating in this interview! Your feedback is highly appreciated.

INTERVIEW
Interview 3
Interviewer: Wonjun Choi
Interview Date: June 7, 2020

나이 (Age)	24
성별 (Gender)	Female
직업 (Occupation)	University Student (Senior)
상담 경험 유무 (Counseling Experience)	No

Hello, we are Team NoDoubt, a team of Yonsei University students that is taking a class named Interaction Design. We have developed a prototype named "Safespace," a mobile application prototype that aims to tackle the pain point of generalized anxiety amongst college students via technology. As a means of user testing, we are conducting an interview. You will be conducting benchmark tasks that we tell you to do, and then you will be given some questions regarding your experience of conducting those tasks. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we take a video, audio recording, and notes as a means to record this session? It is okay to say no to the video recording. If you say yes to audio recording and note-taking, we will proceed with the interview.

Q. Please interact with Sissy tab, the VUI feature of our app.
A. Okay!

Q. How was your experience?
A. When I heard "chatbot" at first, I automatically thought of the chatbots that online shopping sites use, you know, like the robots that inform you with store operating hours..but I think it's interesting to see AI being used for counseling purposes. The sassy personality is very creative and fun!

Q. Do you think that this feature would be helpful?
A. Yes, it is something very new to me, but yeah I think it would be really interesting to talk to.. not just about my concerns, but I would also use it when I am bored

Q. Please interact with the Let Go tab, the feature that virtually burns your unnecessary concerns.
A. Oh, so if I write stuff down, it just burns it? I'm usually scared of fire but this is really cute!

Q. How was your experience?
A. Blowing into the mic was fun haha

Q. Do you think that this feature would be helpful?
A. Yeah, as I said earlier, I am normally scared of burning..I'm just scared of fire in general, but since I know that this is a fake representation of fire, I feel more comfortable! I just wish I can write instead of typing. You know, like I want to write down short swearing words and burn it right away.

Q. Please interact with the Safespace tab, the VR spaces that you can choose to destress in when you are stressed.
A. Alright.

Q. How was your experience?
A. Hmm, I am not sure about this one. I get the idea that it is my own personal space..but since I don't have the VR sets, although I can use them, what's the difference between looking at photos?

Q. Do you think that this feature would be helpful?
A. I think it would be better for me if I can use my own photos, or if there were some sounds in the background. For example, for the ocean, it may have white noises like wind and wave sounds which actually calms me. Or even narration in slow and low voice would be healing!

Q. Please interact with the Settings tab.
A.

Q. How was your experience?
A. It's pretty straight forward.

Q. Do you think that this feature would be helpful?
A. Normally, if I go to settings on any service, I usually get lost from all the options and unusual terms, but I like how this app focuses on just the core setting functions. Straight forward, I like them.

[Ratings]
Q. On a scale of 1 to 10, please rate the AI voicebot ("Sissy").
A. For me, this was the most interesting feature, so I'd give it a 9. AI with personality and giving both voice and text input is very considerate.

Q. On a scale of 1 to 10, please rate the Let Go tab.
A. I'd give it an 8 for the cuteness.

Q. On a scale of 1 to 10, please rate the VR Safespace tab.
A. It was creative, but I'm giving it a 7 for now. As I said, maybe add some sounds?

Q. On a scale of 1 to 10, please rate the Settings tab.
A. I loved the simplicity. Giving it an 8.

Q. On a scale of 1 to 10, please rate the overall application prototype.
A. I enjoyed all the interactions, and I think the motive of the app was very thoughtful. So, 8.

Thank you for participating in this interview! Your feedback is highly appreciated.

INTERVIEW
Interview 4
Interviewer: Wonjun Choi
Interview Date: June 7, 2020

나이 (Age)	26
성별 (Gender)	Male
직업 (Occupation)	University Student (Senior)
상담 경험 유무 (Counseling Experience)	No

Hello, we are Team NoDoubt, a team of Yonsei University students that is taking a class named Interaction Design. We have developed a prototype named "Safespace," a mobile application prototype that aims to tackle the pain point of generalized anxiety amongst college students via technology. As a means of user testing, we are conducting an interview. You will be conducting benchmark tasks that we tell you to do, and then you will be given some questions regarding your experience of conducting those tasks. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we take a video, audio recording, and notes as a means to record this session? It is okay to say no to the video recording. If you say yes to audio recording and note-taking, we will proceed with the interview.

Q. Please interact with Sissy tab, the VUI feature of our app.
A.

Q. How was your experience?
A. I really enjoy how Sissy has a personality. Reminds of this Korean app called 심심이. At first, people actually thought they were talking to a person haha I think this is even better, it not only has a personality but also voice input! The amount of detail Sissy replies with, regardless of personality, resembles a more complete form of conversation. This is what people were waiting for, bots that don't feel like bots.

Q. Do you think that this feature would be helpful?

A. Definitely! As I am learning artificial intelligence right now, it's really cool to see theory come to actual application. I think the fact that you don't need to have a very serious concern to talk about is an advantage to make use of Sissy. Who would go to mental therapy for having too much to study, right? Well, some could, but I don't think there's that many that would.. I think the sassy machine is where people should go, to solve lightweight concerns, a mood changer!

Q. Please interact with the Let Go tab, the feature that virtually burns your unnecessary concerns.
A.

Q. How was your experience?
A. It's my first time seeing anything like this. I've never imagined using a phone for uses other than call, message, game, and social media.

Q. Do you think that this feature would be helpful?
A. I am positive about this feature but, the mixture of big and small font sizes looks a bit off, wish they were more consistent.

Q. Please interact with the Safespace tab, the VR spaces that you can choose to destress in when you are stressed.

Q. How was your experience?
A. For me, it was inconvenient to use on my phone. Since you dealt with many visual aspects in other features above, how about adding auditory components like relaxing ASMRs?

Q. Do you think that this feature would be helpful?
Instead of having to speak the space I would like to visit, it would be better for me if there was a selection that I can choose from.

Q. Please interact with the Settings tab.

Q. How was your experience?
A. It's not just about the settings menu, but overall, having to touch a button on the top to get to another menu to reach different functions is inefficient. A more direct access would be preferred for the sake of simplicity.

Q. Do you think that this feature would be helpful?
A. Other than that, the simplicity of the settings tab itself is very neat. What more is needed? I honestly can't think if there's any. Good job!

[Ratings]
Q. On a scale of 0 to 10, please rate the AI voicebot ("Sissy").
A. 8.

Q. On a scale of 0 to 10, please rate the Let Go tab.
A. 9.

Q. On a scale of 0 to 10, please rate the VR Safespace tab.
A. Great idea as well, but it was a bit of disappointment compared to the two other features. As I said, add some sounds, give the user some guides. 6 for now.

Q. On a scale of 0 to 10, please rate the Settings tab.
A. I'm giving it a 6 because of the fact that you had to go through unnecessary steps to get to other tabs. Other than that, I liked the simplicity of it!

Q. On a scale of 0 to 10, please rate the overall application prototype.
A. Very nice use of AI, very simple, intuitive. I'll give it an 8.

Thank you for participating in this interview! Your feedback is highly appreciated.

INTERVIEW
Interview #5
Interviewer: Nara Han
Interview Date: 06/07/20

나이 (Age)	27
성별 (Gender)	Male
직업 (Occupation)	Graduate Student
상담 경험 유무 (Counseling Experience)	X

Hello, we are Team NoDoubt, a team of Yonsei University students that is taking a class named Interaction Design. We have developed a prototype named "Safespace," a mobile application prototype that aims to tackle the pain point of generalized anxiety amongst college students via technology. As a means of user testing, we are conducting an interview. You will be conducting benchmark tasks that we tell you to do, and then you will be given some questions regarding your experience of conducting those tasks. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we take a video, audio recording, and notes as a means to record this session? It is okay to say no to the video recording. If you say yes to audio recording and note-taking, we will proceed with the interview.

Q. Please interact with Sissy tab, the VUI feature of our app.
A: OK.

Q. How was your experience?
A: Overall, it was very new. I mean, it's a conversation that I would expect to have with my friends and not a machine, so that was very interesting. I loved how it had a

personality instead of this artificial polite helper thing going on. I also think having the voice input was a huge plus. I use Siri a lot because it's convenient and since this app would most likely be used at home when I'm alone, having the voice input as an option, not a must, gives me more flexibility which is always nice and convenient.

Q. Do you think that this feature would be helpful?
A: Definitely. I'm not sure if I can say that I would use this everyday. But, I can say that if my friends aren't available, and there's this real urge to talk to someone about certain things, I will think of Sissy and consider using it if I have the time. I sometimes talk to Siri when I'm really bored haha. Anyways, it would help me by just being an option that I can talk to.

Q. Please interact with the Let Go tab, the feature that virtually burns your unnecessary concerns.
A: Sure.

Q. How was your experience?
A: Ha I loved this tab. I like how you can shake it and blow on it. It's really engaging! Just the shaking hard part kind of makes me less stressed I think. Even though the fire is like an animation fire, it was really cute and still pretty cool. I think I might sometimes just put one or two words that really stress me out and burn it here.

Q. Do you think that this feature would be helpful?
A: I think so? I feel like this would be more instant relief compared to the Sissy that I just used. It's just like a one-time thing that I would interact with. Since it has limited function, like a certain flow in how the user can interact with it, I think sometimes, I might get bored with it? But as a first time user, I sure had a LOT of fun with it. It made me laugh which is therapeutic itself, so thanks for that. Anyways, I think the physical interaction was a huge plus for me.

Q. Please interact with the Safespace tab, the VR spaces that you can choose to destress in when you are stressed.
A: That's cool.

Q. How was your experience?
A: It was okay I guess. I loved how you guys used technology to improve upon the things that they actually do in therapy sessions. I heard that a lot of therapy sessions tell you to imagine the space, I've never had one personally though. Rather than imagining, having the space virtually around you I think would be much more effective. I would personally prefer the VR to the therapy session then haha.

Q. Do you think that this feature would be helpful?
A: Definitely. It's a really good way to combine technology and actual therapy methods. I wish they would use this in real therapy sessions haha. I think it would be much better though if the user can take a photo? I don't know how the technology would work but just ideally, it would be good if the user can put in their own comfort place instead of having a preset option for them because a safespace is really diverse for everyone.

Q. Please interact with the Settings tab.
A: Sure.

Q. How was your experience?
A: It was very nice. Very simple. I like how it doesn't have too many things in the settings tab. Some apps tend to do that and it just looks really complicated for me. I also like how you don't have to log in, and you only demand a nickname which would be used for the Sissy tab. It feels like I'm not revealed as much so I can really say private things that I wouldn't say to a person.

Q. Do you think that this feature would be helpful?
A: Definitely. Having the dark mode was also good. I think it's like a trend after Apple offered the dark mode with their products. But just health wise, darker screens are better for night use so I think that was really good. I also like how you can change the voice of Sissy. I personally feel like the voice is a big part of the general feeling of the conversation so somehow customizing it would be very nice.
[Ratings]
Q. On a scale of 1 to 10, please rate the AI voicebot ("Sissy").
A. I would give it a 9? Is that too generous? haha. But I loved it so I'll give it a 9!

Q. On a scale of 1 to 10, please rate the Let Go tab.
A. 10 for the idea and the execution! Nice job with this.

Q. On a scale of 1 to 10, please rate the VR Safespace tab.
A. Hm for this one maybe an 8..? I feel like it would've been a 9 or a 10 with the sounds and also the actual AR kit.

Q. On a scale of 1 to 10, please rate the Settings tab.
A. A 10 for me. I don't think there's anything else to add or take out.

Q. On a scale of 1 to 10, please rate the overall application prototype.
A. It would be a 9?

Thank you for participating in this interview! Your feedback is highly appreciated.

INTERVIEW
Interview #6
Interviewer: Nara Han
Interview Date: 06/07/20

나이 (Age)	23
성별 (Gender)	Female
직업 (Occupation)	College student

상담 경험 유무 (Counseling Experience)	X

Hello, we are Team NoDoubt, a team of Yonsei University students that is taking a class named Interaction Design. We have developed a prototype named "Safespace," a mobile application prototype that aims to tackle the pain point of generalized anxiety amongst college students via technology. As a means of user testing, we are conducting an interview. You will be conducting benchmark tasks that we tell you to do, and then you will be given some questions regarding your experience of conducting those tasks. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we take a video, audio recording, and notes as a means to record this session? It is okay to say no to the video recording. If you say yes to audio recording and note-taking, we will proceed with the interview.

Q. Please interact with Sissy tab, the VUI feature of our app.
A: Okay.

Q. How was your experience?
A: Great experience! I love how you guys enabled voice input which made me really feel like I was talking instead of typing my words. That helped me engage in the conversation more. I also love the personality! It's such a fresh approach to solving anxiety problems. I know that in Korea, we often have these kinds of things but I think it's really rare for an AI chatbot to do that. I don't know why no one has thought of that before. It's really attractive.

Q. Do you think that this feature would be helpful?
A: I think so. I can only speak from my point of view, but I personally like it when someone has that kind of attitude to some concerns that I have. I mean, I don't think everybody around should be like that but I like the diverse reactions and feedback I get when I talk to people about certain hardships that I'm going through. They don't necessarily all have to be constructive. Sometimes, a friend with a sassy personality is enough to just relieve my worries.

Q. Please interact with the Let Go tab, the feature that virtually burns your unnecessary concerns.
A: This is cool!

Q. How was your experience?
A: I feel like I'm saying this too much but also loved this feature as well. The shaking motion is very engaging. I feel like I'm going to use that a lot if it were out in the app store haha. Although I am a little worried about dropping my phone when I'm shaking it too hard. That would cause me more stress haha. But I love the idea of shaking the phone to make the fire bigger, and actually "letting go" of the paper that I wrote. The extinguishing part is not a must but definitely something fun to have.

Q. Do you think that this feature would be helpful?
A: I think it will. I'm not sure if it'll have the same effect as actually burning fire. That would be honestly, more stress relieving than a virtual one. But considering that I wouldn't have to worry about lighting my house on fire, it's a good substitute.

Q. Please interact with the Safespace tab, the VR spaces that you can choose to destress in when you are stressed.
A: Sure. VR sounds awesome.

Q. How was your experience?
A: I wish I had the headset thing to have a more engaging experience but from the idea point of view, it was very pleasing. This would be more effective than just imagining it. You know how people say when you are angry, just go to your happy place and you'll find peace. I feel like this would be the tech-way to do that. Just allowing me to take a breath before deciding something or doing something.

Q. Do you think that this feature would be helpful?
A: Yes, I think it will. It will feel like a break from the real world for me. Something that will allow me to escape from whatever, in my case, my final exams, and just dive into this virtual world where everything is peaceful. But one thing that would make this experience even more awesome would be maybe having a sound effect? along with the VR? So like if it's the ocean, have the sound of the waves hitting the shore. Or if it's a forest, have some birds chirping and winds blowing the trees and things. That would make the experience even more realistic.

Q. Please interact with the Settings tab.
A: Oh very neat.

Q. How was your experience?
A: The settings tab is very well organized. It doesn't have too many options which I think in this case was very good.

Q. Do you think that this feature would be helpful?
A: Definitely. First, having the nickname to call me makes the conversation feel more personal which is great. Also, being able to change the voice and the accent of Sissy will make users feel more appreciated, and the dark mode is always a nice thing to have. Just the dark atmosphere gives the app a more calming feeling.

[Ratings]
Q. On a scale of 1 to 10, please rate the AI voicebot ("Sissy").
A. I think an 8 would do. I feel like the degree of sassiness was a little bit tricky.

Q. On a scale of 1 to 10, please rate the Let Go tab.
A. A 9 would be okay. I really like the idea and the interactions.

Q. On a scale of 1 to 10, please rate the VR Safespace tab.
A. I think that would be an 8? I liked the idea a lot, and with only a few adjustments, I think the tab would be really awesome.

Q. On a scale of 1 to 10, please rate the Settings tab.
A. A 10! I don't really have any complaints with that.

Q. On a scale of 1 to 10, please rate the overall application prototype.
A. I would say a 9 since I had one 8 haha. Overall, the application was really original. I loved that about it.

Thank you for participating in this interview! Your feedback is highly appreciated.

INTERVIEW
Interview # 7
Interviewer: Joyce Lee
Interview Date: June 4 2020

*In general, I followed the script, but kept a semi-open structure to my interviews and Wizard of Oz sessions. Thus, my transcripts are not exact to the template. Additionally, as described below, my audio recording for this session was of very poor quality, so I'm mostly going by the notes I took during the session.

나이 (Age)	32
성별 (Gender)	M
직업 (Occupation)	English Teacher
상담 경험 유무 (Counseling Experience)	None

Hello, we are Team NoDoubt, a team of Yonsei University students that is taking a class named Interaction Design. We have developed a prototype named "Safespace," a mobile application prototype that aims to tackle the pain point of generalized anxiety amongst college students via technology. As a means of user testing, we are conducting an interview. You will be conducting benchmark tasks that we tell you to do, and then you will be given some questions regarding your experience of conducting those tasks. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we take a video, audio recording, and notes as a means to record this session? It is okay to say no to the video recording. If you say yes to audio recording and note-taking, we will proceed with the interview.

[Blue text prefixed with an "A:" denotes when the participant is talking.]

Q. Please interact with Sissy tab, the VUI feature of our app.

A: Oh, okay. "Hello, how are you?"

Q: Oh, no, you have to press the microphone, there we go.

A: Ah *[laughs]*

Q: It's a demo, so it's not fully working.

A: *[taps screen]*

SISSY: What's up?

A: "Not much, how are you?" (*participant was supposed to say "I'm so done")

Q: Just follow what the screen says -- you're pretending [to say the same things as in this scenario].

In general, the participant struggled greatly with getting the voice function to work. He did not understand when the mic was on or when it was off. He needed lots of instruction and coaching from me, and would have definitely given up on the app otherwise, but was still laughing throughout the interview and seemed to find it somewhat enjoyable. As mentioned on Kakao before, his voice is barely audible in my audio recording of our interview, so it serves poorly for transcription purposes -- we suspect it has to do with his low pitched voice

Furthermore, as I also mentioned on Kakao, we did not test out the demo/prototype on a mobile device, and so as it turns out, the buttons are incredibly finicky and difficult for the average participant to actually press or get anywhere without help

Q. Please interact with the Let Go tab, the feature that virtually burns your unnecessary concerns.

* The participant laughed at the "I'm worried about the state of the world" entry and had obvious fun shaking the phone to grow the fire. When the on-screen message "Feel lighter now?" appeared, he said: "Yeah, I suppose I do"

Q. Please interact with the Safespace tab, the VR spaces that you can choose to destress in when you are stressed.

*Same thing here, this participant had enormous difficulty figuring out how to use the voice command feature properly, and needed me to hold his hand through it or outright do it for him

Q. Please interact with the Settings tab.

A: [when asked about his experience using the Settings] There are not too many functions here that I would use, but once I got it [figured it out], yeah, everything here [would work well].

Q: I think you'd agree that if we made it easier for the buttons to be more pressable, that would be more helpful?

A: Yeah, probably.

Q: 'Cause we spent like half the time trying to get the buttons to [work]… 'cause we made the prototype on the computer, once it's on a phone, it's obvious, like 'oh shoot, these buttons aren't [working],' so that was very annoying for us…

A: Yeah, just a little problem with the buttons...

Q: Yeah. And it's funny, maybe it's just an old person thing -- because my mom does this too -- just like, pressing really hard on the screen? Doesn't work! All you gotta do is touch it--

A: *[laughing]* Lightly?

Q: Yeah, haha.

Ratings
AI voicebot
A. 6.5
(Of course the directions of how to use the app and the buttons were not too responsive, but the idea for the snappy responses were interesting).

Let go tab
A. 8.5.
(I thought that the let go tab was a clever idea and think that people do or would do things like that to help relieve some stress).

VR safe space tab
A. 8.
(Again I thought this was an idea that was neat and worthwhile, something again that I think is probably practical and applicable for a lot of people).

Settings tab
A. 8.
(The settings tab seemed fine for the most part. It was plain and simple and uncluttered which makes navigating easy).

[TAKEAWAYS]
- We need much clearer on-screen instructions (e.g. "Long press on the mic icon lightly and talk clearly into your phone. Release your press when you're done talking.")
- We should have a message (perhaps on the splash page?) that this is a demo, so for demo purposes, to repeat and say exactly the same things as what's on the screen
  - This is also very important in the VR Safespace tab, as there was no indication what words the participant was meant to say for the

demo -- which necessitated me telling them exactly what to do ("top: ocean, middle: field, bottom: town, top again: home")
- Maybe you won't find these on-screen instructions necessary, but if it's important that the demo be usable by anyone without one of the developers (us) helping them, then we absolutely need to make it more clear what to do
- We really need to fix the buttons and make the hitboxes much larger and more easily pressable -- it should not take several attempts to switch tabs or open a menu
- TLDR: Our app is still too ambiguous, demo or no it has to be clearer what the user is supposed to do.
    - **Suggestion:** Either more on-screen instructions or a (?) icon that brings up a Help window.
    - **Overall**: He liked our app and felt that it was "on the right track"

INTERVIEW
Interview # 8
Interviewer: Joyce Lee
Interview Date: June 4 2020

*In general, I followed the script, but kept a semi-open structure to my interviews and Wizard of Oz sessions. Thus, my transcripts are not exact to the template.

나이 (Age)	24
성별 (Gender)	F
직업 (Occupation)	College Student
상담 경험 유무 (Counseling Experience)	None

Hello, we are Team NoDoubt, a team of Yonsei University students that is taking a class named Interaction Design. We have developed a prototype named "Safespace," a mobile application prototype that aims to tackle the pain point of generalized anxiety amongst college students via technology. As a means of user testing, we are conducting an interview. You will be conducting benchmark tasks that we tell you to do, and then you will be given some questions regarding your experience of conducting those tasks. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we take a video, audio recording, and notes as a means to record this session? It is okay to say no to the video recording. If you say yes to audio recording and note-taking, we will proceed with the interview.

[Blue text prefixed with an "A:" denotes when the participant is talking.]

Q. Please interact with Sissy tab, the VUI feature of our app.

Q: [explanation of how to go through the XD demo/prototype on mobile] When you tap on the screen, it'll flash blue where you're supposed to tap, basically. But it doesn't always work. So you need to be pressing on the microphone here… just tap. There we go. Tap on the mic again. And we're simulating talking, so if you long press on the screen and say "Anybody there?", it should work.

A: "Anybody there?" *[succeeds on 2nd attempt]*

Q: So long press on the mic again, [and] keep simulating the conversation… Just tap on it if the voice command doesn't work.

A: "I'm so done." This is the start of my acting career.

Q: *[laughs]*
A: *[reading]* "Yikes, what is it this time?" Do I just go on?

Q: Yeah.

A: "Somebody keeps trash-talking me. I'm so annoyed and frustrated."

SISSY: You're going to let the opinion of one clown affect your mood? Don't be bothered. Let them be bitter. See if you care.

A: 'Kay...

Q: So now we're going to tap on that, to switch to typing mode.

A: Okay. "You're right."

SISSY: Sure. Just remember, there's no changing some people….

Q: So that was the chat feature. So yeah, you can pick one of those [prompts] to move onto the next tab, basically.

A: Okay. *[presses VR Safespace]*

Q. Please interact with the Safespace tab, the VR spaces that you can choose to destress in when you are stressed.

Q: So this is the VR Safespace. Nowadays, it's actually really common to make your own headset. You can buy them at Daiso for like 5 to 15 [thousand won].

A: Shut up! [surprised]

Q: Yeah. Google made a Cardboard version, so you [can just] put your phone in, and now you're in VR.

A: Oh my God, I feel sorry for all the people in China. *[laughs together]*

Q: We had the idea to add this feature - so basically, if you press one of those - I mean, if you press the top one there - so yeah, there's no indication [so] I'm just going to tell you, do the microphone thing and say "Ocean."

A: *[sad voice]* I wanted to do mountains…

Q: *[laughs]* We'll keep in mind.

A: "Ocean!"

Q: Okay great. This is working much better than the guy I was… okay, anyway. So, second one: say "field."

A: "Fields." *[success]* It's my British accent.

Q: Your British accent's working like a charm. And for the last one: "Town."

A: "Town."

Q: Press the top one again to overwrite it and say "home."

A: "Home."

Q: Cool. So that's that feature. Now press the sidebar menu there… it's finicky, you might have to try several times, we'll fix this, I swear… and now try the Let Go feature.

Q. Please interact with the Let Go tab, the feature that virtually burns your unnecessary concerns.

A: *[reading]* Write down your worries and let's burn them!! *[laughing gleefully]*

Q: Good! Try it out.

A: 'Kay. *[reading]* "I'm worried about the state of the world…" *[laughs]* Me.

Q: Right then. So continue with this…

A: Yeah? How do I continue?

Q: So just keep tapping.

A: Right. *[sees screen telling her to shake phone and laughs GLEEFULLY while shaking the phone enthusiastically]*

Q: *[laughs]* She's shaking the phone right now, having a good time. Okay great. Drag…

A: *[drags paper into fire]* Oh that's cool, I like that. "Blow on the mic to extinguish the flame…"

Q: [Blow] on the bottom [of your phone], yeah.

A: *[blows into mic]* *note: the participant also automatically tried to* swipe upwards *on the flame to remove it, completely unprompted by me. More on this observation later*

Q: That's what we would WANT it to do, unfortunately we can't actually [yet], so pretend it works and just tap it.

A: *[reading]* "Come back whenever you want to set things on fire." Trump? *[laughs]*

Q: OK, that was the Let Go tab! And finally, open the settings.

A: *[has difficulty switching to Settings]* It wants me to keep setting things on fire.

Q. Please interact with the Settings tab.

A: *[automatically tries switching Light/Dark mode on/off right off the bat, unprompted by me]* I did it!

Q: Uh yeah, so you've already tried out Dark mode, try out the other settings. You might have to go back to Light mode for that [first]. Sorry.

A: *[opens System Voice and sees option for UK English]* YAY!!

Q: We don't actually have it but--

A: Awwww.

Q: -- But for instance, different accents…

A: I'm so glad that you recognize that the UK is an actual place. I mean, we did create the English language…

Q: *[laughs]* And finally, 'Edit Nickname.'

A: So what do I go by?

Q: You can't actually type anything [yet]. I'm sorry. Just hit OK.

A: Aw. I'm nameless.

Q: Well now you're done playing with everything in the demo.

A: Okay.

Q: So, thoughts on your experience?

Q: Let's start with the chatbot.

A: Not gonna lie, the chatbot was a *little bit*, uh… what is the right word… **a little bit harsh**, I think? Like the advice that was given, I think it could be a little bit more… is that really what I want to say...? A little bit more neutral.

Q: Neutral.

A: But um, I mean it's all good lifting other people up, bein' like, you know, "you're better than them, blah blah blah," but I think by shooting down the other person who is supposedly bullying in this scenario, you're still giving negativity, and I think any kind of negativity can be somewhat harmful to someone who is in that situation.

Q: Mhm.

A: Even if it's projecting negativity towards another person, it's still a negative emotion. **I think you should try and focus on a more positive emotion.** If that makes sense?

Q: No, that's good. Good feedback. How about the interface itself?

A: Oh the interface was alright. I liked the mic feature. I think it's cool that you can actually like, talk to it as well as type to it. I think that's good.

Q: So do you think that talking is actually helpful?

A: Yeah. I think so.

Q: I'm actually glad-- I think it's because I gave you better direction because I learned from the other guy how we're supposed to do it, and how the program works -- the program's called Adobe XD that we did the prototyping on.

A: Yeah.

Q: All your voice interaction went much more smoothly than it did with the other guy.

A: It's my accent! *[laughs]*

Q: So like a more neutral tone, you feel, would be better for our [AI]?

A: Yeah. I understand where you're coming from, I just feel like if I were in an anxious position, I don't know if that [sassy put-down] would necessarily help me.

Q: Alright. Now, thoughts about the Letting Go tab?

A: Oh, that was great. I had my reservations about it, because I initially thought "Oh, this is going to be the same thing," just kind of like, too aggressive, in a sense? Kind of like the chatbot. I thought it might be too aggressive for someone who's having mental illness problems or anxiety or something like that. But actually doing it, yeah, that was [great/fun]... because there was *action* involved, I think that actually made it quite relieving.

Q: Mhm.

A: And it also made me question my views on the AI bot, actually, because maybe I personally don't like the kind of aggressive frontier, but maybe other people would find that healing? So I don't know, like maybe it's just aimed at more specific people. I don't know. You can think about the whole positivity thing, but maybe I'm wrong, maybe I could just be a more centered person. … The fire was fun.

Q: The fire was fun.

A: If you *could* blow on it, that would be f-cking great. Maybe you should do something like... *[motions swiping upwards with her finger]*

Q: I noticed you defaulted to doing that... *[also does 'swiping upwards' motion with finger]*

A: Yeah.

Q: Alright. Noted. How about the VR Safespace? I wasn't able to actually let you try out the VR…

A: Kind of reminds me of Tumblr.

Q: How so?

A: 'Cause like, *I* use Tumblr as like…

Q: Escapism?

A: Yeah, 'cause like for example, for me, I really like traveling to different places but I can't do that all the time, obviously - and I don't *want* to do that, you know, I want to also be in the city and be in my house and that sort of thing - but sometimes you just have that feeling of like, wanting to be in that other place, sort of like a comforting *hygge* style of feeling. And obviously you can't just get on a plane and go somewhere for 5 minutes and then come back.

Q: Mm.

A: So I use Tumblr like, "ooh, let me look at pictures of huts in the mountains, with cups of coffee, so I can have that feeling for 5 minutes!" but not actually have to go

there? And the VR Safespace kind of reminded me of when you just need 5 minutes to go to that place, and have kind of a little experience there, and then return to your reality.

Q: Yeah.

A: What would be extra cool is if you could have extra features like - kind of like in those guided meditations where they have the sounds and the stories? I think that would be quite cool, to have some sounds to go with it, like maybe you could add music to it or audio tracks of just like birds tweeting.

Q: Yeah. That all sounds good.

A: Because I know that those kinds of sounds are meant to be relaxing and stuff as well, so that would be quite cool if that was possible. I liked it.

Q: Good to hear. And um, about the settings?

A: The settings… yeah. Dark mode: tick. Different languages, accents: tick. Nice that you can choose your nickname. Tick.

Q: Any other features that might be useful?

A: Um… Hm… I can't think of any. But, if it was possible, people might like different colours. Because you've got the pink and the blue, right? Some people might be more into different colours. So maybe if you could have kind of like [other] gradient themes? Something like that.

Q: Mm.

A: But that's just like an extra cherry on top. I don't think it's really necessary.

Q: Extra bells and whistles.

A: Yeah.

Q: I was thinking about it, like adding other skins and themes, but that was definitely like lower priority.

A: Yeah. Right.

[we briefly discuss the A/B testing screens]

A: Another thing, and this is probably a really difficult thing to do, but like different voices is really important. My friend works in speech therapy, and she was saying how different voices to represent different people is very important, and some people can't speak to something that doesn't have the voice to represent them. You know, if you're like a young Mexican girl, you don't want [to talk to] the voice of a 50 year old white man. Right? So like having different voices to represent different people is

very important, and I think the same can be said for [this]. People will feel more comfortable or might prefer to talk to a woman, some people might prefer to feel like they're talking to a man.

Q: Yeah.

A: So I don't know, just like, different voices. But again, I don't think that's like possible now, because of the limitations of it? But I think it's something to think about for the future.

Q: Okay. Right. Thanks very much.

A: Okay, and to go on, **I don't like the name Sissy very much.** Actually, that's considered an insult, and especially in the conversation that we used for the AI bot - it was talking about bullying and stuff right, about feeling targeted - and it's literally the same implication. Like using that name ["Sissy"] is a name that is used when bullying, and I don't want the AI bot to remind me more of bullying if that makes sense.

Q: So changing the name is a suggestion.

A: I think so, a major suggestion. I get the point in the name, but from my cultural perspective it doesn't land.
Q: Mhm. Which is to say that she doesn't need to be sassy -- you know, you felt like she was negative… *[I explain how we tried giving our AI a sassy personality to make her stand out from competing emotional wellbeing chatbots]*

A: I don't think she needs to be sassy to stand out. And like, the features such as the fire thing, that also makes it stand out, because it makes it more interactive, it makes it more like a game but in a *good* way. If you can think of more ideas along those lines as well, it might get even better, I think.

Q: That's probably all going to go under 'future direction,' 'cause [the semester's] almost over. There's only one last bit left.

A: Oh yeah. Obviously. Um, but, I think that's what makes it stand out, not the sassy bot.

Q: Alright. Cool.

Ratings
Q. On a scale of 0 to 10, please rate the AI voicebot ("Sissy").
A. 6

Q. On a scale of 0 to 10, please rate the Let Go tab.
A. 10.

Q. On a scale of 0 to 10, please rate the VR Safespace tab.
A. 9.

Q. On a scale of 0 to 10, please rate the Settings tab.
A. 9.

Q. On a scale of 0 to 10, please rate the overall application prototype.
A. 9.

Rating Summary

	#1	#2	#3	#4	#5	#6	#7	#8	Avg.
Sammy	8	9	9	8	9	8	7	6	**8.000**
Let Go	10	9	8	9	10	9	9	10	**9.250**
Safespace	6	7	7	6	8	8	8	9	**7.375**
Settings	7	7	8	6	10	10	8	9	**8.125**
Overall	9	9	8	8	9	9	8	9	**8.625**

T Test Results

A (Benchmark)	B (Average Score)	P-Value
Overall (8.625)	Sissy (8.000)	0.159
	Let Go (9.250)	0.063
	VR Safespace (7.375)	0.010
	Settings (8.125)	0.376

II-i
Wizard of Oz Transcripts:

WIZARD OF OZ
Interview 1
Interviewer: Chiwon Lee
Interview Date: June 7, 2020

나이 (Age)	25
성별 (Gender)	Male
직업 (Occupation)	College Student
상담 경험 유무 (Counseling Experience)	O

Hello, we are Team NoDoubt, a team of Yonsei University students that is taking a class named Interaction Design. We have developed a prototype named "Safespace," a mobile application prototype that aims to tackle the pain point of generalized anxiety amongst college students via technology. As a means of user testing, we are conducting a Wizard of Oz interview. You will be conducting benchmark tasks that we tell you to do, and then you will be given some questions regarding your experience of conducting those tasks. When you conduct tasks, one of the members of our team will respond, but please think that the app is responding in this case. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we take a video, audio recording, and notes as a means to record this session? It is okay to say no to the video recording. If you say yes to audio recording and note-taking, we will proceed with the interview.

Q. Please say hi to Sissy.
A. Hi Sissy!

Q. Please tell Sissy your concerns.
A. Hmm… I always have a lot of concerns. My biggest concern right now is that my workload is too heavy, that I can't visit a lot of places because of COVID-19, and I'm really stressed because I can't go to the movie theaters.

Q. Please freely interact with Sissy like you would do with a counselor.
A. (Content of the interaction is made confidential because the conversation is about personal concerns)

Q. How was your experience?
A. I thought it was nice! I liked the sassy comments and remarks that were still helpful because I thought that made the ambience of the whole conversation much more lighter! I don't like the fact that counseling sessions are serious and grim. I think the light and sassy conversation with Sissy would also make counseling seem more trendy and hip!

Q. What aspects of the conversation were helpful?

A. I think that the sassy remarks of the conversation really helped me relieve my stress. It made me realize that I am stressing about issues that I really don't have much power over.

Q. If you think that this feature could be improved upon, what aspects do you think we could make better?
A. I'm not sure if the app provides this, but I think that it would be great if you could remind the user that the conversations will be remembered so that Sissy would check up on the user when the user wants to talk to Sissy again. I think the reason why people keep on going to see the same counselor is because it is important for the counselor to remember concerns. I think Sissy would be great if it could remember generalized concerns so that the conversation can resume from the part it ended at from the last conversation.

Q. (In the case of interesting behavior) Why did you do that action?
A. N/A

Q. (In the case of behavior that displays confusion) What aspect of this feature might be confusing you?
A. N/A

WIZARD OF OZ
Interview 2
Interviewer: Chiwon Lee
Interview Date: June 7, 2020

나이 (Age)	26
성별 (Gender)	Male
직업 (Occupation)	College Student
상담 경험 유무 (Counseling Experience)	O

Hello, we are Team NoDoubt, a team of Yonsei University students that is taking a class named Interaction Design. We have developed a prototype named "Safespace," a mobile application prototype that aims to tackle the pain point of generalized anxiety amongst college students via technology. As a means of user testing, we are conducting a Wizard of Oz interview. You will be conducting benchmark tasks that we tell you to do, and then you will be given some questions regarding your experience of conducting those tasks. When you conduct tasks, one of the members of our team will respond, but please think that the app is responding in this case. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we take a video,

audio recording, and notes as a means to record this session? It is okay to say no to the video recording. If you say yes to audio recording and note-taking, we will proceed with the interview.

Q. Please say hi to Sissy.
A. Hey! Hello!

Q. Please tell Sissy your concerns.
A. I guess employment? Looking for a job? About human relationships.

Q. Please freely interact with Sissy like you would do with a counselor.
A. (Content of the interaction is made confidential because the conversation is about personal concerns)

Q. How was your experience?
A. I love that the app has a personality. I don't like counseling sessions where the counselor is too stern and dull since it makes me seem like I have a big problem.

Q. What aspects of the conversation were helpful?
A. I like that the conversation made me feel like my problems are lightweight. I realized that most of my problems are things that I can't do much about, which was really liberating.

Q. If you think that this feature could be improved upon, what aspects do you think we could make better?
A. I think that it would be great if there is an option or information on professional help since some people may need professional help although these functions are great as a quick, easy, and fun way to relieve generalized anxiety.

Q. (In the case of interesting behavior) Why did you do that action?
A. N/A

Q. (In the case of behavior that displays confusion) What aspect of this feature might be confusing you?
A. N/A

WIZARD OF OZ
Interview 3
Interviewer: Wonjun Choi
Interview Date: June 7, 2020

나이 (Age)	24
성별 (Gender)	Female
직업 (Occupation)	University Student (Senior)

상담 경험 유무 (Counseling Experience)	No

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Q. Please say hi to Sissy.
    A. Hi Sissy

Q. Please tell Sissy your concerns.
A. Anything?
Q. Yeah anything, it doesn't have to be real or serious.
    A. I am hungry
    S. You are hungry? I haven't eaten in ages.

Q. Please freely interact with Sissy like you would do with a counselor.
    A. I am worried about the exams coming up.
    S. Have you started preparing?
    A. No..
    S. I really wish I can take the exam for you, but you know I can't.
    A. What should I do?
    S. You have two options, either start preparing now, or just keep worrying. Totally up to you!
    [Further conversation omitted]

Q. How was your experience?
A. Haha this was fun, Sissy feels like a 츤데레 friend. I have actually never gone for counseling sessions because I worry that the therapist would tell me there's something wrong with me, even with the slightest concerns, but I wouldn't hesitate to talk to Sissy. What's there to lose? There are times when you really need someone to talk to, and I think this would be perfect. Time efficient, entertaining, inoffensive, unbiased, non judgemental, best of all, no cost, right?

Q. What aspects of the conversation were helpful?

A. All the chatbots sound like robots, you name it, Bixby, Siri, Alexa, Genie.. They don't have this friendliness, or should I say none of them feel natural. Also, the sassiness drives my motivation, I think. Like, it would actually stimulate me to get over something.

Q. If you think that this feature could be improved upon, what aspects do you think we could make better?
A. Since the main objective is to have a conversation, you should really focus on sounding natural. Also, for current voicebots, I normally don't use them, but I really hate having to repeat myself a few times.. I hope that's not an issue with Sissy

WIZARD OF OZ
Interview 4
Interviewer: Wonjun Choi
Interview Date: June 7, 2020

나이 (Age)	26
성별 (Gender)	Male
직업 (Occupation)	University Student (Senior)
상담 경험 유무 (Counseling Experience)	No

Hello, we are Team NoDoubt, a team of Yonsei University students that is taking a class named Interaction Design. We have developed a prototype named "Safespace," a mobile application prototype that aims to tackle the pain point of generalized anxiety amongst college students via technology. As a means of user testing, we are conducting a Wizard of Oz interview. You will be conducting benchmark tasks that we tell you to do, and then you will be given some questions regarding your experience of conducting those tasks. When you conduct tasks, one of the members of our team will respond, but please think that the app is responding in this case. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we take a video, audio recording, and notes as a means to record this session? It is okay to say no to the video recording. If you say yes to audio recording and note-taking, we will proceed with the interview.

Q. Please say hi to Sissy.
A. Hi Sissy.

Q. Please tell Sissy your concerns.
  A. I hate corona virus. I wish it ends soon.
  S. Same, since the pandemic, I've become really busy.

Q. Please freely interact with Sissy like you would do with a counselor.
[conversation omitted]

Q. How was your experience?
A. At first, I was skeptical if sassiness would help at all, but now that I think again, considering an AI that has personality really makes me enthusiastic. I think the responses even nudge me to move on, in a positive way. Like, the concern wasn't serious after all!

Q. What aspects of the conversation were helpful?
A. Helpful? Umm the naturalness, the content of reply, the personality, the methods of interaction(typing and speaking), all of them combined is just brilliant.

Q. If you think that this feature could be improved upon, what aspects do you think we could make better?
A. I personally don't have a problem with current settings, but some people may be uncomfortable with the sassiness. Maybe the option to control the sassiness would help? Also, there's too much empty space on the chat, I want to suggest using that space more efficiently, for example, displaying more messages?

WIZARD OF OZ
Interview #5
Interviewer: Nara Han
Interview Date: 06/07/20

나이 (Age)	27
성별 (Gender)	Male
직업 (Occupation)	Graduate Student
상담 경험 유무 (Counseling Experience)	X

Hello, we are Team NoDoubt, a team of Yonsei University students that is taking a class named Interaction Design. We have developed a prototype named "Safespace," a mobile application prototype that aims to tackle the pain point of generalized anxiety amongst college students via technology. As a means of user testing, we are conducting a Wizard of Oz interview. You will be conducting benchmark tasks that we tell you to do, and then you will be given some questions regarding your experience of conducting those tasks. When you conduct tasks, one of the members of our team will respond, but please think that the app is responding in this case. Please have in mind that there are no right or wrong responses for this interview, and your responses will only be used for this research. Your information will be anonymous other than your age, occupation, and gender. Is it okay if we take a video,

audio recording, and notes as a means to record this session? It is okay to say no to the video recording. If you say yes to audio recording and note-taking, we will proceed with the interview.

*Participant = P
  Interviewer = I

Q. Please say hi to Sissy.

> P: Hi Sissy.
> I: Hi Rondo. What's up?
> P: Nothing much. Nice to meet you haha.

Q. Please tell Sissy your concerns.
Q. Please freely interact with Sissy like you would do with a counselor.

> P: I'm really worried about my future.
> I: What about your future?
> P: You know, just in general. I just feel like time is going by so fast but I haven't done anything. I mean, I'm still stuck here in grad school, and I feel like I'm falling behind?
> I: Rondo, you probably know this expression already but if you got the time to worry, actually do something with that time! You know that's the right thing to do.
> P: I know but all these thoughts, and what-if's are distracting me.
> I: Well in that case, this thought is bothering me as well: "What if Rondo actually started doing something, rather than worrying?"
> P: Haha that's a good thought. Sorry I'm whining too much.
> I: No need to apologize to me. As long as you realized that, I think you can turn off your phone, and go do something for yourself!
> P: Haha thanks. I like talking to you. You kind of feel like one of my friends.
> I: Is that a compliment?
> P: Hmm..I think so?
> I: Well thanks but I think I might be better than your friends.
> P: Haha we'll see about that.
> I: But Rondo...what are you still doing here?
> P: What do you mean?
> I: Go do something! Now!! And after you do whatever you have to, come back here and tell me all about it.
> P: Haha okay. Got it. See you later Sissy.
> I: If I'm not busy :)

> P: That was actually fun haha.

Q. How was your experience?

> P: It was actually even more interesting than I thought it would be. I mean, it really felt like one of my friends with that kind of personality.

Q: Could you elaborate a little bit more?

P: Well, I never expected that you know, one could have that kind of conversation with a machine. Usually, when people, or at least, when I think of AI, it's like Siri. It's polite, helpful but it doesn't have like a clear personality, and I'm thinking that'll be that case especially for therapeutic AIs because people assume that the users will be sensitive. But I think this was a good, light approach to what you guys were calling generalized anxiety because I see a lot of friends who are anxious all the time, who are worried about things that they can't really do anything about. Sometimes, it's just good to forget about it or brush it off, and this Sissy AI I think might be able to help with that.

Q. What aspects of the conversation were helpful?
P: Like I mentioned, the personality is a really attractive point. It's what made me feel like I wasn't talking to this emotionless machine. So good job with that.
I: Haha thanks.
P: I also liked how I could talk to it, instead of typing. I use Siri a lot at home because it's just really convenient. I know a lot of Koreans don't really actively use voice things but I like it, and it's a good option to have for people like me.

Q. If you think that this feature could be improved upon, what aspects do you think we could make better?
P: I don't know about improvement, but I was a little worried about how diverse the responses will be. I mean, if Sissy just keeps on offering the same advice for the same worries that I have because you know a lot of people have repeated? worries. Anyways, if Sissy offers the same response every time I have the same worry, I might get sick of it, and just stop talking to it since you know, I would have real friends who would give me more diverse advice.
I: I see. That's a really good point. Thanks for that.
P: No problem!

WIZARD OF OZ
Interview #6
Interviewer: Nara Han
Interview Date: 06/07/20

나이 (Age)	23
성별 (Gender)	Female
직업 (Occupation)	College student
상담 경험 유무 (Counseling Experience)	X

Hello, we are Team NoDoubt, a team of Yonsei University students that is taking a class named Interaction Design. We have developed a prototype named "Safespace,"

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*P = Participant
 I = Interviewer

Q. Please say hi to Sissy.

        P: Hi Sissy!! How are you?
        I: Hi JW! Having a great day?
        P: Kind of. Thanks for asking.

Q. Please tell Sissy your concerns.

        P: Hey Sissy, I'm a little worried about the final coming up. I just have a lot to do and I don't know if I can do them all. I'm also having trouble with just personal relationships overall.

Q. Please freely interact with Sissy like you would do with a counselor.
(Content of the interaction is made confidential because the conversation is about personal concerns)

Q. How was your experience?
A: It was great. It was a new experience for me since first, I've never been to a therapy session so I'm not sure if I did well there haha. Also, I never had a conversation with an AI, no I did because Siri is an AI, sorry about that. But I think this was a totally different experience from that because Sissy has a sassy personality which I loved.

Q. What aspects of the conversation were helpful?
A: I would say the personality. The reason why I think I've never been to therapy was because I'm lazy but also because I feel like it would become too serious, like the counselor would make too big a deal out of it. That's what I'm afraid of the most, and I think this sassy personality is just right for a person like me. I want someone to tell me that it's not a big deal so I shouldn't make a fuss out of it. Usually, my friends do that for me but I guess today, this Sassy AI did it haha.

Q. If you think that this feature could be improved upon, what aspects do you think we could make better?

A: Hm...I just thought of it but what if we can just call on Sissy like we do for Siri? You know, like the "Hey Siri" trigger! Even when I don't have my phone in my hands, I could just be lying down on the bed and call "Hey Sissy" and just be able to have a conversation with it. That would be pretty cool. Also, I think you could be a little bit more sassy haha. You were a nice sassy chatbot.

WIZARD OF OZ
Interview # 7
Interviewer: Joyce Lee
Interview Date: June 4 2020

*In general, I followed the script, but kept a semi-open structure to my interviews and Wizard of Oz sessions. Thus, my transcripts are not exact to the template.

나이 (Age)	32
성별 (Gender)	M
직업 (Occupation)	English Teacher
상담 경험 유무 (Counseling Experience)	None

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[Blue text prefixed with an "A:" denotes when the participant is talking.]

[START OF WIZARD OF OZ SESSION]

Q: Um, please say hi to the AI chatbot. We call her "Sissy," by the way.

A: Okay. Hello!

Q: And I'm pretending to be Sissy, so, um… I already explained to you what the Wizard of Oz thing is, so just -- you're pretending.

A: Right.

Q: "Hi, Kory! What's up."

A: "Not much, how are you?"
Q: "I'm fine, but I'm guessing *you* aren't, if you're talking to me."

A: "I'm a little distressed."

Q: "*Why* would that be?"

A: "I'm having a tough day."

Q: "Well, as your virtual counselor, I *have* to ask you: Why are you having a tough day?"

A: "Uh, my coworkers are a problem."

Q: "O-*kay*… what are they doing?"

A: "They're giving me a hard time at work *[inaudible due to poor quality of recording]*"

Q: "Well, one: that's pretty rude of them. Two: have you tried actually talking to them about it?"

A: "I haven't, no. I should talk to them."

Q: "Yeah. You might want to do that."

Q: "Anything else, Kory?"

A: *[inaudible]* [something along the lines of "Can you tell me what to do?"]

Q: "Well, I'm not your *mom*, but you can write about it in Let Go if you want to…"

A: "Yeah, I might just do that. Thanks."

Q: "Aight. Peace."

[END OF WIZARD OF OZ SESSION]

Q: OK, so that was our simulated conversation. Right, so I was pretending to be the AI chatbot -- how was it?

A: *[inaudible]*

Q: OK. Was the AI chatbot being kind of sassy actually helpful, though?

A: Um, yeah. One of the responses [was] to talk to them [the fictional coworkers] first, and it was said in a very sassy tone, but I believe that [talking to someone you have a problem with] to be true, yeah.

Q: OK. Anything that could be improved upon if we get this actually working someday?

A: I'm fine with the attitude. I don't know, maybe just the range of responses that could be stated?

Q: By "range of responses," could you tell me [more of] what you're talking about?

A: I don't know. Maybe if the situation were pretty similar, but there were other details that might change the situation entirely, so if the AI were to be able to identify those smaller details and be able to give separate responses for those separate situations I would of course think that [would help] a lot.

Q: OK. So back to our hypothetical scenario, what if after I [as the chatbot] said "Have you tried talking to them?", what if you'd said something different?

A: Yeah, if I had said something different and it would respond… *[voice trails off thoughtfully]*

Q: Let's do it right now. [As Sissy] "Have you tried *talking* to them?"

A: "No, I don't think so."

Q: "Well, maybe do that?"

A: "Well if I did, what would I say to them?"

Q: "Uh, be like, 'Hey. We need to talk.'"

A: "OK, so nice and straightforward."

Q: "Straightforward's what I'm best at."

A: "I think that could work."

Q: [as myself, the interviewer] Well, anything that was confusing about your hypothetical interaction with the AI just now?

A: Uh, nothing too confusing, no.

Q: OK. For the purposes of this Wizard of Oz, I think that went alright.

A: Okay *[laughs]*

Q: OK, thank you Kory.

WIZARD OF OZ
Interview # 8
Interviewer: Joyce Lee
Interview Date: June 4 2020

*In general, I followed the script, but kept a semi-open structure to my interviews and Wizard of Oz sessions. Thus, my transcripts are not exact to the template.

나이 (Age)	24
성별 (Gender)	F
직업 (Occupation)	College Student
상담 경험 유무 (Counseling Experience)	None

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[Blue text prefixed with an "A:" denotes when the participant is talking.]

[START OF WIZARD OF OZ SESSION]

Q: You're now talking with the AI. I'll do my best, too. Doing the Wizard of Oz! Here we go.

A: Um. "I'm worried."

Q: "'Bout what?"

A: "I'm worried about the state of the world."

Q: "Yeah, it's pretty crappy, isn't it?"

A: "Yeah, there's just like, so many uneducated people." *[laughs]*

Q: "Wo-ow, that's some shade. I mean, do you wanna elaborate on that?"

A: "Well, it's just that I feel like people aren't respecting the lives of others these days, you know? They're only thinking about themselves."

Q: "Tell me about it. But did something happen today that's making you bothered?"

A: "Yeah actually, something did happen today. Somebody who I respected as one of my older work colleagues posted on Facebook that the Black Lives Matter movement didn't matter and that, um, why aren't people protesting for Lee Rigby as well. And it kind of pissed me off, not gonna lie."

Q: "Geez, that sucks. I'm sorry to hear that."

A: *[laughs]* "Yeah, it does suck!"

Q: "Well, okay, if you want, we can keep talking about it, or you could Let Go of it right now -- maybe the VR Safespace might make you feel better?"

A: "..."

Q: "Anything to get you to move on."

A: "That's a good idea. I'll do that."

Q: "Anytime, I guess."

A: "Cool talking to you, Sissy!" *[awkward and laughing]*

Q: "Bye, b."

A: *[laughing]*

[END OF WIZARD OF OZ SESSION]

A: Actually that was fun.

Q: Yeah?

A: I quite liked that, yeah. Um… I mean… I don't know how Sissy is going to *listen* to those responses *[sharp laughter]* but like...

Q: What if she could? And if she answered like *I* did. Would she be helpful?

A: Yeah, maybe…? It's nice to hear someone be like: "Well that sucks." *[laughs]*

Q: Just hearing like, "*That* sucks."

A: Yeah, I think that was kind of cool… Um… Maybe also say stuff like "Do you wanna talk about how to *solve* this problem" or like whatever.

Q: Ahhh.

A: Something like that, yeah...

Q: Yeah. Okay.

A: *[mimicking Sissy]* "Do you want to talk about how to *solve* this problem or do you wanna pick some escapism and do some VR?" Something like that.

Q: *[chuckling]* Okay. I think that's all the questions… Right. Was there any moment [whilst] using the app or like, during the Wizard of Oz or whatever that you were confused on what to do?

A: *[jokingly]* My whole life. *[laughs together]* Uh… no. Think it's more just like myself protesting my own feelings.

Q: Maybe someday there will be an actual AI chatbot that could *actually...*

A: Actually actually...

Q: … yeah, help a sister out.

A: *[jokingly]* But we're gonna be putting people out of their jobs!

Q: We'll never not need counselors.
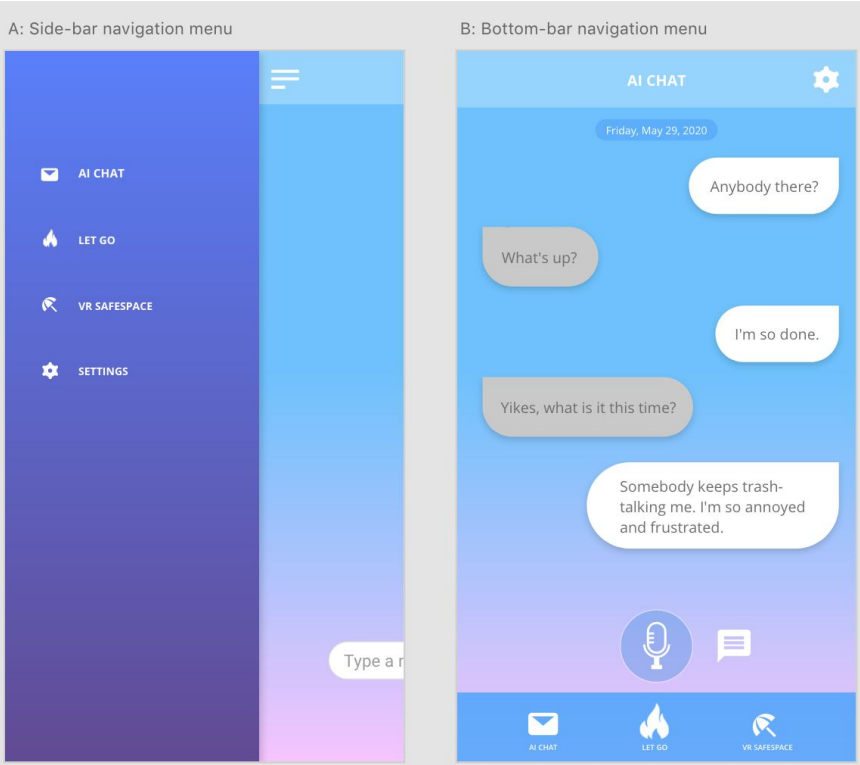
A: *[laughs]* Okay.

Q: Alright, thank you Ms. Welland!

A: Sure thing, chicken wing.

II-j
A/B Testing Results

1. Age			
18-22	**23-27**	**28+**	**Total**
48 (55.8%)	33 (38.3%)	5 (5.8%)	**86 (100%)**
2. Gender			
Female	**Male**	**Prefer not to say**	**Total**
57 (66.2%)	29 (33.7%)	0	**86 (100%)**

3. Which interface do you like better: Settings, Sidebar VS. Bottom Navigation Bar

Option A has all the 4 app features available from a sidebar that pushes out from the left. Option B has the 3 main features available on the bottom navigation bar with settings on the top right.

A	39 (45.3%)	**B**	47 (54.7)

4. Which interface do you like better: VR Safespace Layout

Option A has all 3 sceneries viewable at once but in a smaller portion. Option B showcases 1 scenery per screen (scrollable sideways for remaining 2 sceneries), but in a larger resolution compared to option A.
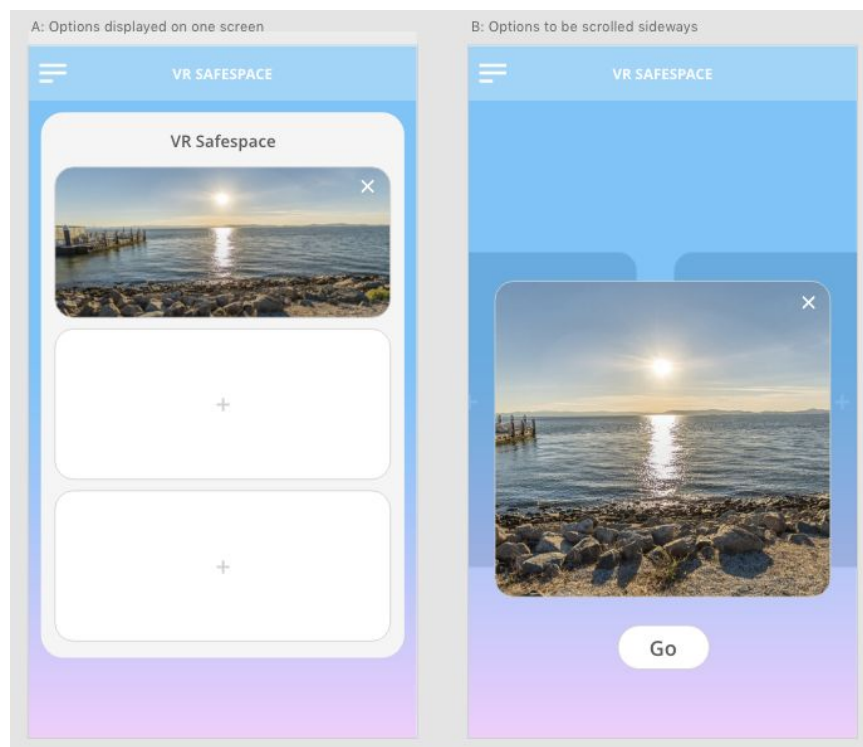
| A | 36 (41.9%) | B | 50 (58.1%) |

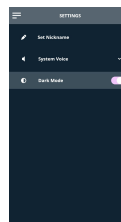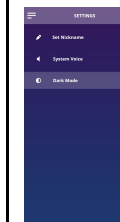## 5. Which user interface do you like better: Input Style
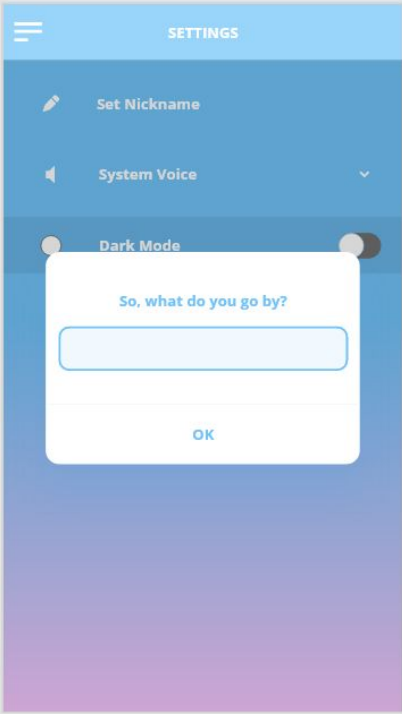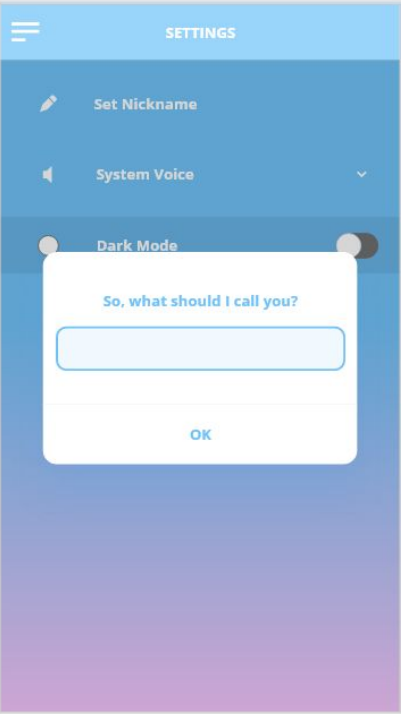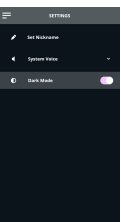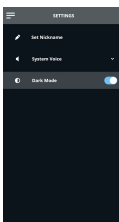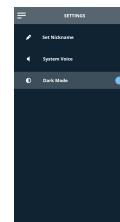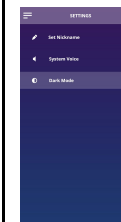
The original intention was to mimic writing on a paper. Option A has a wrinkle effect on the page you write on. Option B looks more like a standard note app.
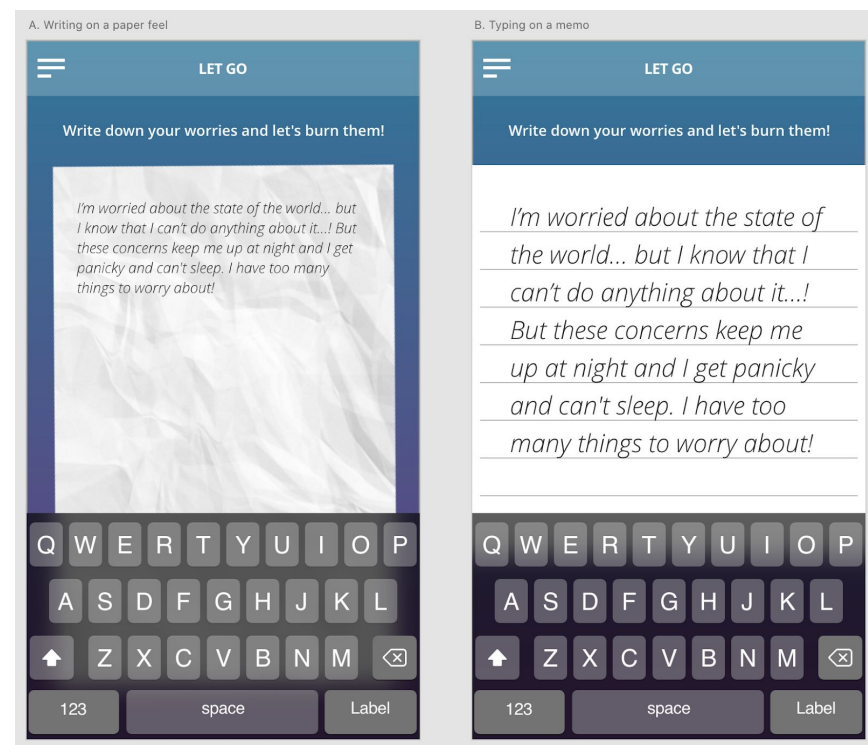
A	25 (29.1%)	B	61 (70.9%)

6. Which user interface do you like better: Nickname Prompt

Please select the wording you prefer.

| A | 19 (22.1%) | B | 67 (77.9%) |

7. Which user interface do you like better: Darkmode Style
Please select what your preferred look for 'dark mode' is.

| A | 9 | B | 15 | C | 7 | D | 17 | E | 18 | F | 20 |

8. Contact

[Censored for Privacy Issues]

II-k
YouTube link for final prototype & online exhibition:
https://youtu.be/1gHXXRr8-aQ