



ABSTRACT

The underlying motivation to make a mental health app comes from the increasingly high percentage of mental health issues among the Indian adult population. Many people are nowadays facing various psychological issues. Due to significantly less awareness regarding mental health issues and the importance of mental health, many people do not consult therapists and psychiatrists. Without proper consultation and help, affected people instead try to hide or ignore their issues, which, in most cases, only exacerbates the issue. To solve the problem of finding all relevant information and the doctors for consultation regarding all the mental health issues without any trouble is solved by the app. The biggest challenge in this type of deep personal close information is that the person should feel secure and comfortable while sharing the information and shouldn't feel intruded. So the solution we present is a mental health app which tries to know your issues and based on that, find the possible mental health issue that you are suffering from. The app provides articles on mental health and self help and allows consultation with therapists around you

INTRODUCTION

BACKGROUND: MENTAL HEALTH

Mental health refers to cognitive, behavioral, and emotional well-being. It is about how people think, feel, and behave.

All people, at some point of time in their life, feel worried, anxious or down, but not everyone develops a mental illness. What's the difference between merely feeling anxious or down, and developing a mental illness? A mental illness is something which affects the way of an individual's thinking, their interaction with others and their day to day activities.

A mental illness can be witnessed by everyone, irrespective of their age, gender, ethnic background, race, caste, creed or economic background.

Examples of mental illnesses include-:

1. <u>DEPRESSION</u>

Depression is a serious mental condition which is commonly observed with people of all age groups. It affects the way people feel and how they act. Though the term is sometimes used by people to merely say that they feel low or annoyed, depression is not really that, it's much more serious.

2. ANXIETY

Anxiety is a mental state which involves worry or fear. It's generally a fear of future outcomes and what comes ahead in a person's life. It is commonly observed among people of all age groups.

3. PANIC DISORDER

A panic disorder includes getting panic attacks, which are sudden and intense surges of fear or discomfort. It involves a feeling of terror in a person when there is no real danger.

Some common symptoms of a mental illness include:

- 1. Extreme mood swings
- 2. Sleeping issues (maybe requirement of sleeping pills)
- 3. Hallucinations
- 4. Feeling of not wanting to talk to family members, friends or literally anyone
- 5. Often feeling angry or violent

SOLUTION

People with a mental illness can recover and feel better by taking help, talking to someone, or seeing a therapist and following a treatment plan as prescribed by the therapist, which may or may not include medication.

OUR PROJECT

Steps involved in making the app-:

1. <u>IDEA BEHIND THE TOPIC CHOSEN- EXPLANATION</u>

Mental Health is a serious issue which needs to be tackled, especially for students, who may be stressed because of their high academic pressure, family issues etc. As mature teenagers, we ourselves have been through various highs and lows in life, and we understand the importance of mental well being. Our project aims to create a mental health app, particularly aiming students. This app will educate them about various mental issues and disorders and would also enable them to book an appointment with a well qualified psychologist to help the student.

The target user base for this app can be any adult, but we chose to focus our attention on a very small subgroup: students. Our reasons for doing this are that it is the group most accessible to our research, and that students are more likely to be aware of mental health issues.

The biggest existing challenge is the prevalence of social stigma around the concept of mental health. Even though mental health issues are very common among adults in India, most adults are not knowledgeable, even scornful, to the concept of mental health. The number of mental health professionals in India is dangerously low (1% of what is required), so it is possible that you are not able to get help due to their not being a mental health professional in your town or village.

However, there is no singular solution that helps the problem that we have presented, especially in India

2. FLOATING OF GOOGLE FORM

Our project aims to create a mental health app. For this, we had first floated a google form which involved certain questions about mental health. The target audience for the respondents was people who are currently pursuing their studies.

3. ANALYSING THE GOOGLE FORM

Through the google form we needed to understand the background of the majority, the information they are lacking and need to be educated about, and finally the form analysis which is needed for our project to determine if our app will actually be helpful for the people.

4. CREATING LOW-FIDELITY PROTOTYPES

A low-fi prototype is a visual representation of the final product. In our case, the low-fidelity prototype consists of various sketches, which lead us to developing various slides for our final app.

5. CREATING HIGH-FIDELITY PROTOTYPES

A high fidelity prototype is an interactive representation of a product, which is computer based in nature and resembles the final design with similar functionality and details. For our project, we made the design on a platform named "Figma". Through this we were able to create different designs such as the chat bot, home page, general questions page, page to book an appointment etc.

MOTIVATION FOR MAKING THE PROJECT

As mature teenage students, we ourselves have been through various highs and lows in life, and we understand the importance of mental well being. Anyone around us can have a mental illness and they need to be handled with care and affection rather than being ignored and left alone. Our project aims to create a mental health app, particularly aiming students.

Example- Take a hypothetical situation. There is a person X who has been feeling low and upset lately. He isn't exactly able to figure out what's troubling him and tries speaking to his family about it, but they dismiss it as 'just a phase'. He feels that he would be made fun of if he tells

people that he needs help. So this person X can download our app and take the initial screening. He is not told immediately what the screening shows. Instead, the app gently encourages him to read some articles and engage in self-help activities. Jatin reads the articles and becomes more knowledgeable about mental health and begins to understand what might be troubling him. He books an appointment with a counselor near him to help him out with his issues. He seeks professional help and is on his way to recovery. Yaay!!

PROBLEM DEFINITION

Due to significantly less awareness regarding mental health issues and the importance of mental health, many people do not consult therapists and psychiatrists and seek mental help.

TARGET USERS

The target audience for the respondents was people who are currently pursuing their studies. (There is no age barrier to education. People of all age groups can study. Thus, our focus was not only school and college going students, but also maybe enthusiastic old age learners who still have the zest to study and are probably doing some specialised educational course).

EXISTING CHALLENGES

The biggest existing challenge is the prevalence of social stigma around the concept of mental health. Even though mental health issues are very common among adults in India, most adults are not knowledgeable, even scornful, to the concept of mental health. The number of mental health professionals in India is dangerously low (1% of what is required), so it is possible that you are not able to get help due to their not being a mental health professional in your town or village.

EXISTING SOLUTIONS

Most of the existing solutions focus on one aspect of the problem. There are many meditation apps, there are many apps that help us develop good habits, and there are many apps that allow us to book appointments with medical professionals. However, there is no singular solution that helps the problem that we have presented, especially in India

Problem Definition and Identifying Target Users

Mental health problems are mostly ignored and neglected in our country. No consultation or treatment is done in most cases on issues involving mental health. There is also a big social stigma which withholds many people from seeking professional help. According to a survey done by the World Health Organization, it was found that about 7.5 per cent Indians suffer from some mental disorder. According to the numbers, 56 million Indians suffer from depression and another 38 million Indians suffer from anxiety disorders. In most cases the people do not know that they are suffering from some mental health disorder. This is because of lack of awareness and knowledge. Lack of knowledge about the mental illnesses poses a challenge to the mental health care delivery system. Awareness and mental health literacy are two sides of the same coin. Stigma and discrimination are negative consequences of ignorance and misinformation. There are a few studies which have measured mental health literacy in the Indian context. One study found mental health literacy among adolescents to be very low, i.e. depression was identified by 29.04% and schizophrenia/psychosis was recognized only by 1.31%. Stigma was noted to be present in help-seeking. Other reasons include fear of what others will think if they seek mental health care and how society would react. In many cases even if people are aware of their mental health condition and are willing to take mental health assistance from a doctor, they are unable to do so because of the problems of accessibility and reachability, i.e. very often there is unavailability of mental health care centers at many places, especially in rural and backward areas. The other problem is that of affordance: very often the consultation fees and cost of treatment in such mental healthcare facilities and rehabilitation centres is very high, often out of a person's affordability.

MENTAL HEALTH SCENARIO IN INDIA

Treatment gap in even Severe mental disorders (SMDs) is approx 50 per cent. In case of Common Mental Disorders (CMDs) it is over 90 per cent.

Six per cent of Kerala's population has mental disorders. One in five have some sort of emotional and behavioral problems.

Almost 60 to 70 million Indians suffer from SMDs and CMDs

State-run mental hospitals/mental health institutions – only 43 all over the country

289 departments of psychiatry in medical colleges includlingapproximately 85 PG departments

Approximately 30000 psychiatric beds is provided in govt mental hospitals.

3800 psychiatrists available as against requirement of 11,500; 898 clinical psychologists as against 17250; 850 psychiatric social workers as against 23000; 1500 psychiatric nurses as against 3000.

Burden of these disorders is likely to increase to 15 per cent by 2020 (World Health Report, predicted in 2001)

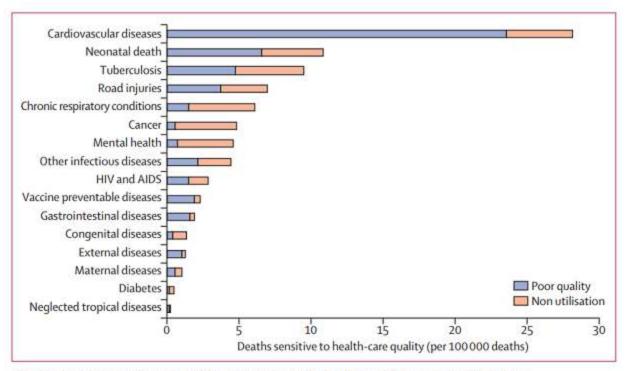


Figure 2: Mortality due to poor quality versus non-utilisation of health care by condition type
Reproduced from Kruk and colleagues, 35 by permission of Elsevier. External factors deaths are those due to
poisonings and adverse medical events. Other infectious diseases deaths are those due to malaria, diarrhoeal
diseases, intestinal infections, and upper and lower respiratory infections.

As it is very clear from the above data that the mortality rate due to mental health issues is more than 5% of the total deaths due to all disorders, similar to the mortality rate of Cancer, so it is not a small concern, but something which needs immediate attention followed by necessary action.

Stakeholders and Target audience - The most significant stakeholders are the patients, mental healthcare workers(which accounts for only 1% of what is required),psychiatrists and healthcare specialists. The government is also a direct stakeholder as it is responsible for making healthcare infrastructures.

Getting to the target user base, the problem of mental health is very vast and encompasses all age groups and ethnographics. However, for the purposes of our project, we chose to focus our attention almost exclusively on people who are currently pursuing their studies. Our reasons for the aforementioned are

1. It is the most accessible group for our research purpose.

2. They are more likely to be aware of mental health issues, but are held back by social stigmas.

OUR INITIATIVE

We created a google form which involved certain questions about mental health. The target audience for the respondents was people who are currently pursuing their studies. (There is no age barrier to education. People of all age groups can study. Thus, our focus was not only school and college going students, but also maybe enthusiastic old age learners who still have the zest to study and are probably doing some specialised educational course).

LINK TO THE GOOGLE FORM

https://docs.google.com/forms/d/e/1FAIpQLSd1R3u7LlBoD9t3_FZ0Q7R4uNnzUzLo0gEiYckki 9PEbrF2zQ/viewform

SNAPSHOTS OF QUESTIONS IN THE GOOGLE FORM

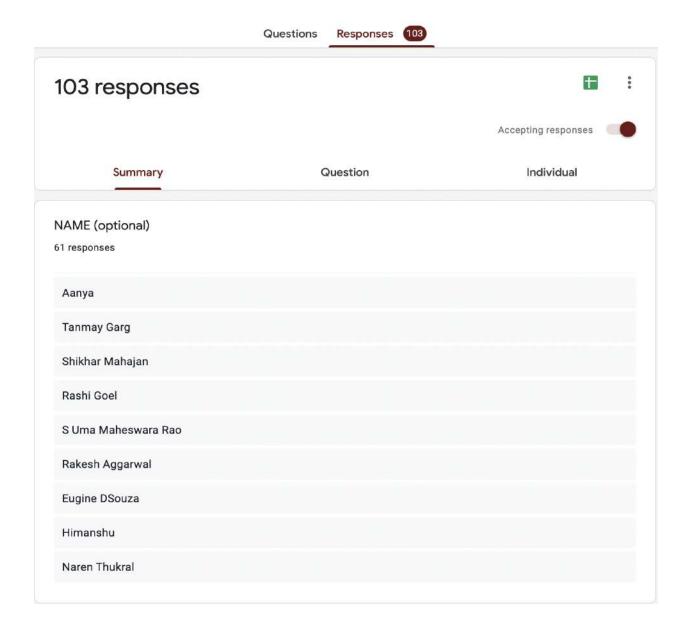
	Mental Health Survey for Students Hello everyonel We are freshers from group 3.6, Section-8 of IIIT Delhi. If you're currently pursuing your studies, it would be great if you could take out a minute to fill this little form on Mental well being for our iHCl project. (group members- Amolika, Shobhit, Srijan, Vanisha, Yash) * Required	
	NAME (optional) Your answer	
	AGE * 14-16 17-20 20-25	
I	26 or above	

CURRENT EDUCATION STATUS *	
O middle school	
O high school	
O undergraduation	
O post graduation and beyond	
How much time do you spend using social media everyday? *	
① 1-2 hours	
O 2-4 hours	
4 hours or more	
hey, I hardly use social media	
How heavy do you think your schedule is? (academics, extracurriculars etc) *	
1 2 3 4 5	
very light, hardly anything to overy heavy, can hardly take out time	
urne	
According to yourself, how good are you in handling your personal relationships? (peers, friends, parents, instructors etc) *	
1 2 3 4 5	
really bad O O O really good	
How comfortable do you feel about sharing your feelings and thoughts to your	
family and friends? *	
1 2 3 4 5	
very uncomfortable OOOO I share everything with them	
How aware do you think your friends and family are on the issue of mental health? *	
1 2 3 4 5	
I don't think they even know	
what it is	

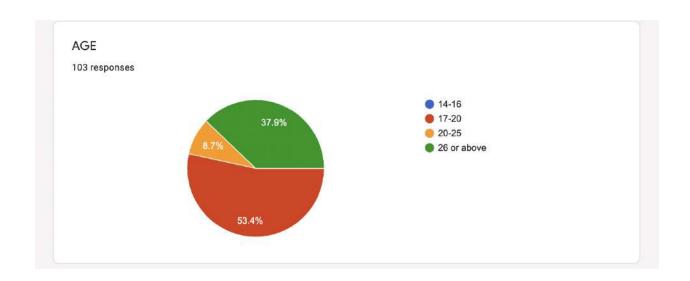
How many of the below listed conditions are you aware of? (please select all the relevant options):(Depression, Anxlety disorder, Panic disorder, PTSD, OCD, Anorexia, Bulimia, ADHD, Bipolar disorder, Schizophrenia) *	
Depression	
Anxiety	
Panic Disorder	
PTSD	
OCD	
Anorexia	
Bulimia	
Bipolar Disorder	
Schizophrenia	
None of the above	
Are you currently taking therapy or have you ever visited a psychiatrist before?*	
○ Yes	
O No	
Have you ever had any bad past experience which you still get flashbacks about?	
○ Yes	
○ No	
Do you think speaking to a counsellor/therapist anonymously, through the help of an app can be good for you? *	
her trains a	
O Yes	
○ No	
○ Maybe	

ANALYSIS OF GOOGLE FORM RESPONSES

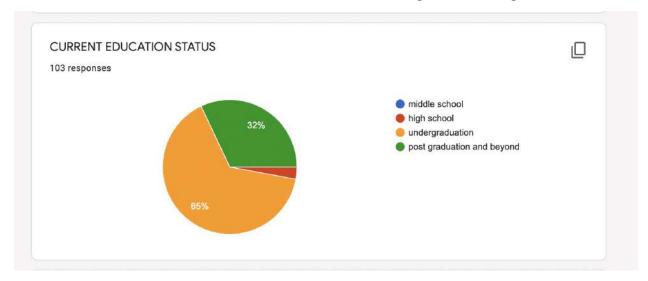
1. Since the form asked for the mental health data of people and we wanted more people to take the initiative of filling up the form, we decided to keep it optional for the people to mention their names. Turns out, out of 103 respondents, only 61 of them filled out their names, which is about only 52% of the total responses. Thus, we can conclude that quite a large portion of people prefer to stay anonymous while filling out a form which involves mentioning their mental health conditions.



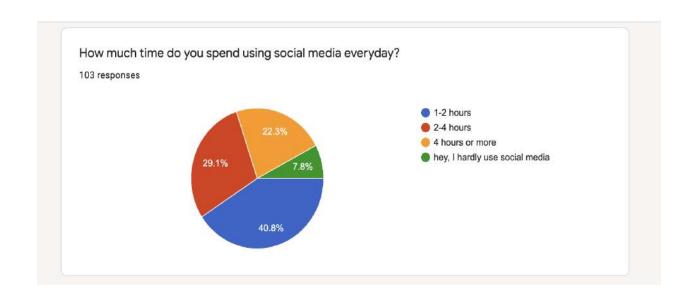
2. Majority of our respondents are in the age bracket of 17-20 years, which are generally college students. In short majority of the students who have filled the form are college students.



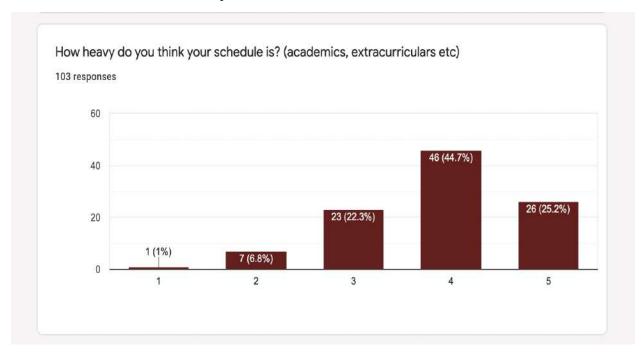
3. Most of the students who have filled the form are undergraduate, college students.



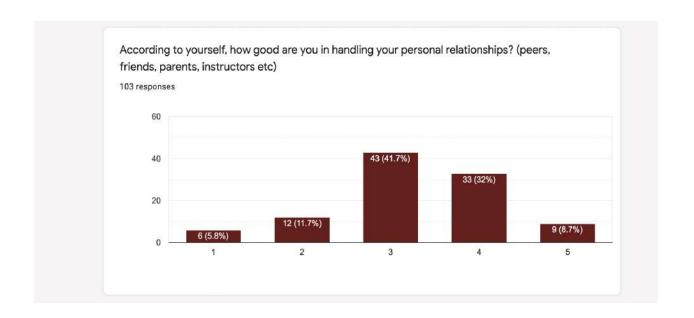
4. The average time spent by the students who have filled the form on social media is 1-2 hours. 1-2 hours is not much time. It is often observed through studies that people who spend more of their time in social media tend to develop more stress and thus, comparitively more prone to having some mental illness.



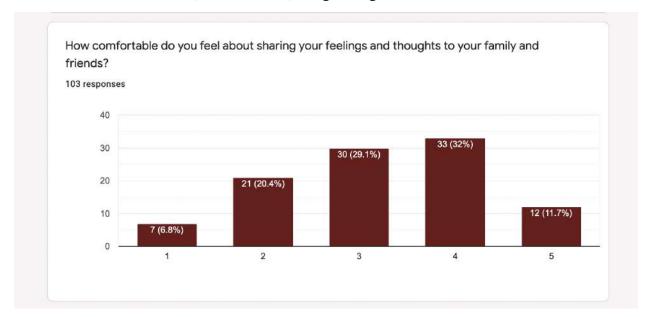
5. Most of the students contend that their academic pressure is really high and thus, it can be another reason for development of stress in the students.



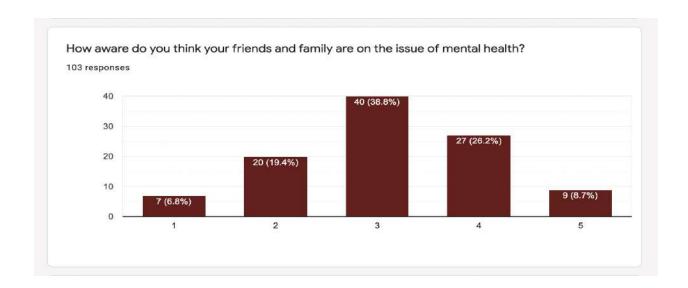
6. Most of the people are not very good at handling their personal relationships.



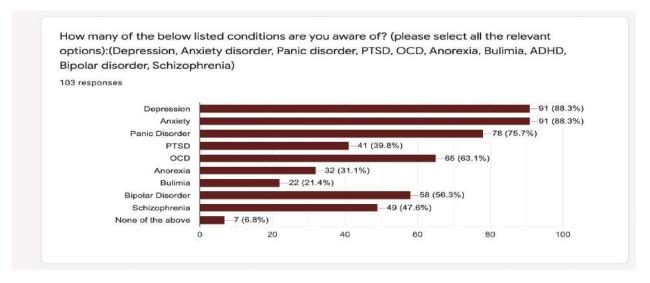
7. Most of the students are comfortable in sharing their feelings and thoughts to their families and students, which indeed, is a good sign.



8. According to most of the students, their family is pretty aware about mental health, which again is a good sign, but there still are a lot of people with their families and friends not being much aware about mental health.



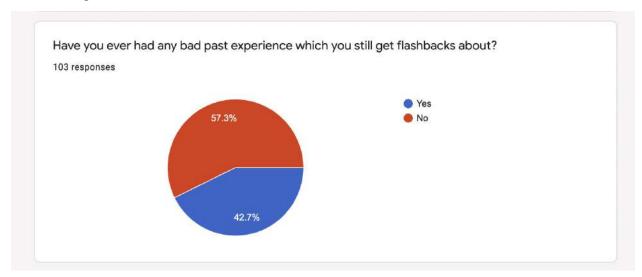
9. Most of the students are aware about the common mental disorders like depression and anxiety, but very few people are aware about the uncommon mental health disorders such as Bulimia. Also, there are people that are literally aware of none of the mental disorders listed. Thus, clearly, more people need to be made aware of the various mental disorders.



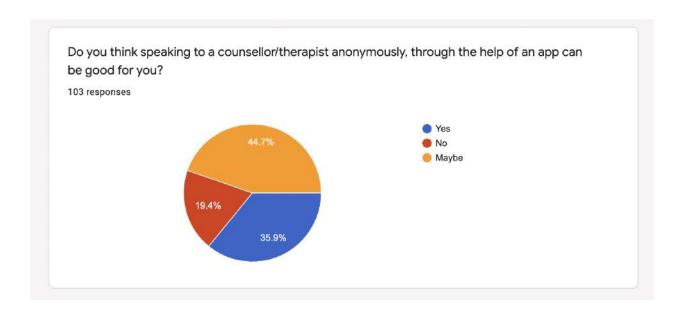
10. Most of the respondents haven't ever visited a psychiatrist before. The reason for this is less likely that the respondents are not suffering from any mental mental disorder, and more because maybe they are not even aware that they have a particular disorder, maybe they have trouble asking for help, maybe they don't want to reveal their identity because they don't want people to know about their illness, or maybe simply being clueless about whom to approach.



11. A lot of students have had a bad experience they get flashbacks about. This can also hamper their mental health condition.



12. The last question we asked was about our app, whether speaking to a counsellor/therapist anonymously, through the help of an app can be good for them. Most of the students responded with a "maybe", i.e. probably they are not about the app. We hope that when the app actually develops, students like it and we get a positive response. The second highest proportion (35.9%) of the respondents believe that the idea of the app will be good for them, which is a positive response for us. :)



IDEATION AND LO-FI PROTOTYPING

Given the nature of the problem at hand, it is obvious that we need something that is quickly accessible to the user and available to them at any given moment. Therefore, two obvious choices that emerge are a website and a mobile application.

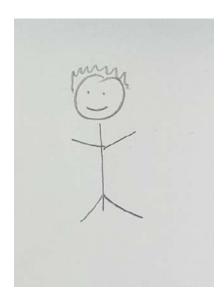
The reasons that we chose to build a mobile application as our solution are:

- 1. A large percentage of potential users have access to a smartphone. (quote some random numbers)
- 2. Since the solution needs to be accessible to the user at any given moment, without them having to put much effort into accessing it.

The app would need to do the following functions:

- 1. Take an initial survey so that it can make a reasonable assumption as to what your current condition is, and curate its content to suit your needs.
- 2. Intelligently push articles and stories which pertain to your specific condition, along with a healthy mix of articles on general well-being and self-help in order to encourage the user to engage in reading and in self-help.
- 3. After some time has passed following the initial screening, allow the user to take a more detailed screening pertaining to the earlier diagnosed condition.
- 4. Allow the user to book appointments with therapists and psychiatrists near them.

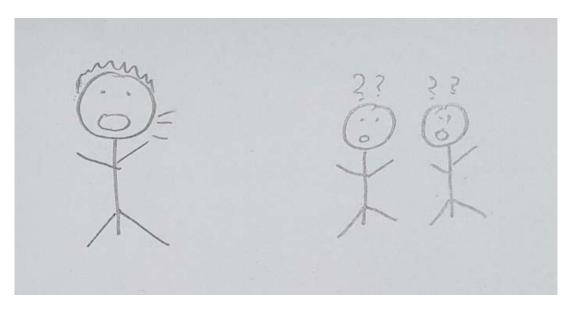
Here is a storyboard to illustrate the functioning of the app:



This is Jatin



He's been feeling a bit down lately, but he can't explain why



He tried speaking to his family about it, but they don't seem to understand what is troubling him. They dismiss it as 'just a phase'.



He realizes that he needs help, but feels that his family and friends would make fun of him for it.



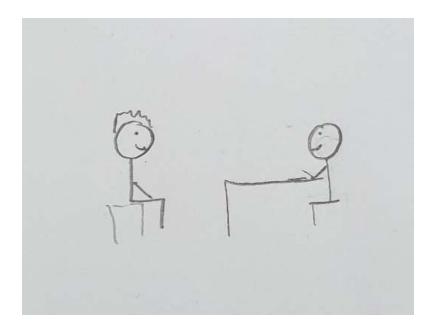
He downloads the app and takes the initial screening. He is not told immediately what the screening shows. Instead, the app gently encourages him to read some articles and engage in self-help activities. Jatin reads the articles and becomes more knowledgeable about mental health and begins to understand what might be troubling him.



Jatin finally takes the problem-specific screening to know the extent of his issues.



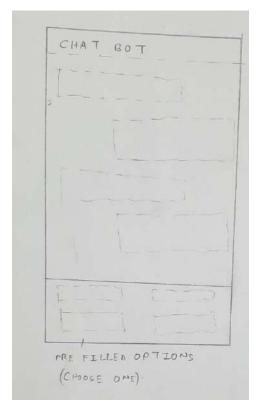
He books an appointment with a counselor near him to help him out with his issues.



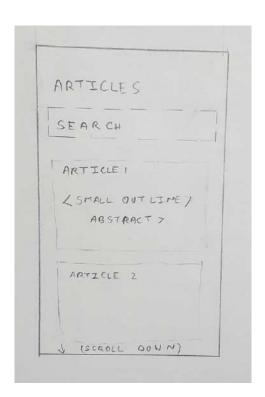
He seeks professional help and is on his way to recovery. Yaay!!

Whenever one is dealing with issues such as a user's mental health, it is helpful to establish the apps and goals of the app before it is allowed to be used by potential users. The app would store the data collected from the initial survey in order to curate the articles and screenings it would offer the user in the following sessions. Also, the app will choose to withhold the results of the initial screenings in order to avoid startling the user with a big realization which they would not be prepared to handle.

App Design:



Initial survey screen



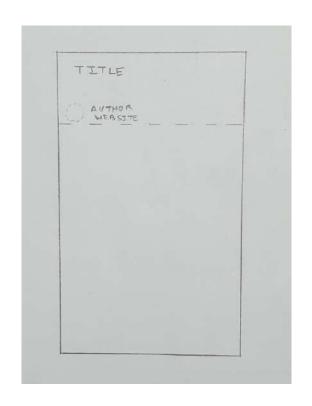
SPACE FOR GLUOTES, SHALL
STONIES (ATTRACTIVE
SPACE FILLER)

ASSESS MENT/SCREENING

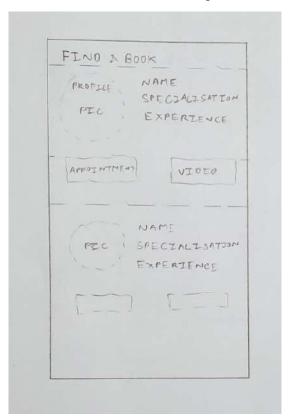
ARTICLES

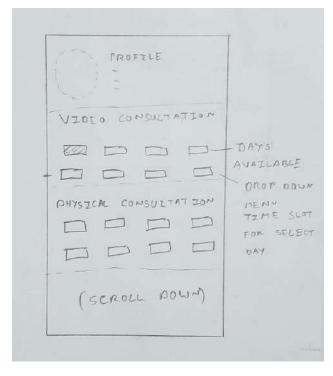
CHAT

Home screen



Example of article screen





What is your age?

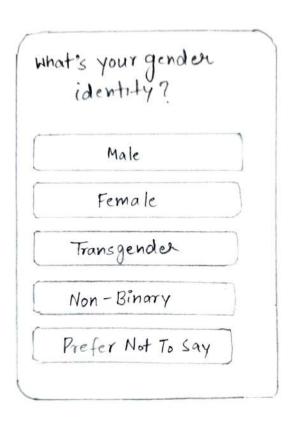
18-24

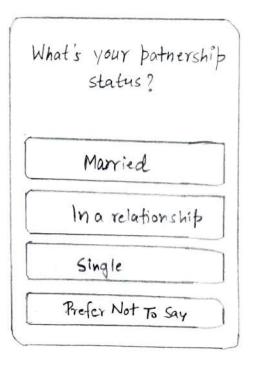
25-34

35-44

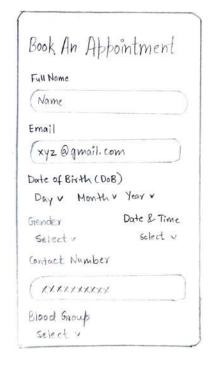
45-54

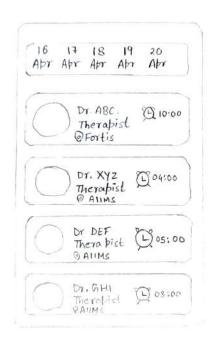
55-70





Alternate design of screening





XYZ, we've got you

Confirmed for your

appointment

Dr. ABC

5:30 PM

20 April 20XX

© Par

Alternate design screen for booking appointments.

Our app consists of one initial survey, which can be conducted in one of two ways, both of which have been highlighted in the sketches above. The home screen points to 4 distinct sub-menus: taking a further screening, reading articles, chatting with professionals, and booking appointments with therapists.

We have provided some of the basic design elements for articles and appointments, both of which are based on well-established designs. A chatting feature can look like your chatting interface of choice, and therefore has been omitted.

HI-FI PROTOTYPE

https://www.figma.com/proto/XGJb1UOsvXsq8yZuoZLTJu/chat-app?node-id=97%3A540&scal ing=scale-down&page-id=0%3A1

In the above prototype, the questions that have been used are placeholders. In an actual implementation, an entirely new set of questions would be designed by a team of psychologists. For the source of questions that are used, please refer to:

https://screening.mentalhealthscreening.org/hyho

As mentioned in our LoFi prototype, we had implemented a Chatbot in order to take the initial survey. However as was discovered in our focus group discussions, implementing a traditional survey-style questionnaire in order to take all screenings.

https://drive.google.com/drive/folders/1MNbUrhwCha25k0gnD3VJ9wN04ofKa1j3?usp=sharing

Findings in fgd:

Half of the users preferred a chatbot to take surveys, as it felt more familiar to them. This is what we had assumed in the beginning as well, since chatting via messaging apps has become incredibly common nowadays.

The other half preferred using the traditional survey for screenings. The reasons given were mostly pragmatic. The survey style allowed the user to move back and forth between different questions if they wished to. In the case of a chatbot, moving back and forth caused an immersion break, making the user think that they are not actually talking to someone. Also, for many users, the concept of mental health is something that they are afraid to share with someone. Therefore, a more impersonal approach to taking a survey could prove more effective. Keeping this in mind, we decided to change our screening method to be like a traditional survey.

EVALUATION

Link To The Evaluation Form:-

https://docs.google.com/forms/d/e/1FAIpQLSdvEmaoKelyvGJckAATHldwTIGZWXxRJ5oUJsk QO8p2pWHTvg/viewform?usp=sf_link

For evaluation, we floated a survey to ask people about their opinions on our app. A common complaint was that there were too many questions that were asked in the screening part. While we do understand the frustration of having to answer a large list of questions, it is also important to understand why so many questions are being asked in the first place. These questions come from a list of standard questions which are called Mental Health Inventory (MHI). These are standard questions that are asked to evaluate many common mental health conditions such as depression, anxiety, etc. So, in the interest of being accurate, it is better to keep the number of questions high.

Also, a typical user is not likely to take the screening very often. In fact, it is expected that the user will only take a screening very infrequently. This is because once you have taken a screening, the results are unlikely to change over a short period of time.

LIMITATIONS OF OUR IDEA -

The user may have privacy concerns with our application as the application demands a lot of personal information and no one would like others to know about their personal lives. Although it is a safe and secure place for the user, reassuring the user about the same still remains a challenge. Secondly we have restricted the target user base to students as they were accessible. Although with the continuous upgradation of artificial intelligence, we will be able to make a strong analysis of the mental health status of the individual but the analysis may not be that accurate and there are chances that the users remain unclear about the condition they are suffering from.

Future Prospects - The future prospects includes expanding and broadening the target user base to all age groups as every age group faces some or the other kind of mental health issues. We also need to provide a more reassuring space to the user where they don't have any privacy concerns. We aim at upgrading and improving our interface, and making it more innovative, attractive and interactive to the user. Another plan of action is related to increasing awareness about mental well-being among people. As noted before, our country has an alarming lack of mental healthcare workers. By building a strong network of therapists and psychologists, we can increase the

CONCLUSION

Mental health is a serious issue which needs immediate attention and action. Thus, we constructed a problem definition, which was related to mental health conditions and their quick remedies. We took our target user base to be the students as they were the most accessible. So a type of disorder which has a mortality rate almost equal to that of cancer, is also combined with different kinds of social stigma and wrong beliefs, which often creates a barrier for the patient who is willing to get therapy. So, we made an application through which anybody can get to know their mental health status in their own personal space, they would be asked questions based on which they would be analyzed and will be given feedback accordingly. They can also book appointments with a doctor anytime and can have a consultation with them if they think they

need more mental health assistance, this way we have tried to solve a problem which has been a challenge for many years.

VIDEO EXPLAINING THE PROBLEM AND HIGH FIDELITY

https://drive.google.com/file/d/1L6MI3XwjXBIn1PsRtmSSYqiAHAi4gFdZ/view?usp=drivesdk

CONTRIBUTION

- 1. **Amolika Bansal**:- Defining the problem statement, Introduction, data gathering, making and analysis of google forms, proofreading, making of video.
- 2. Vanisha Singh:- Ideation, Abstract,, Lo-Fi prototyping, Feedback Gathering, Hi-Fi prototypes
- 3. Srijan Arora: Lo-Fi prototyping, introduction, project lead and coordination, proofreading
- 4. Shobhit Kumar:- Hi-Fi prototypes, introduction, final proofreading.

ALL OF US HAVE CONTRIBUTED EQUALLY TO THE PROJECT.

Sources:

- National Mental health survey
 http://indianmhs.nimhans.ac.in/
 http://www.indianmhs.nimhans.ac.in/Docs/Summary.pdf
- https://screening.mentalhealthscreening.org/hyho
- https://www.statisticssolutions.com/mental-health-inventory-mhi/