

# Mending Our Minds Using AI Analytics

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A Dissertation Submitted to  
Indian Institute of Technology Hyderabad  
In Partial Fulfillment of the Requirements for  
The Degree of Master of Design



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Indian Institute of Technology Hyderabad

Department of Design  
June 2022

## Declaration

I declare that this written submission represents my ideas in my own words, and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be a cause for disciplinary action by the Institute and can also evoke penal action from the sources that have thus not been properly cited, or from whom proper permission has not been taken when needed.



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(Name of the student)

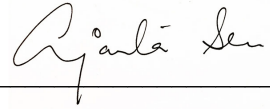
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# Approval Sheet

This thesis entitled – **Mending Our Minds Using AI Analytics** – by – **Mahima Nareshchandra Dahekar** – is approved for the degree of Master of Design from IIT Hyderabad.



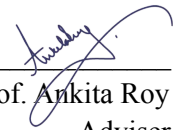
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**Dedicated to several individuals going through anxiety, depression,  
or any other mental health disorder.**

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# 1. Introduction

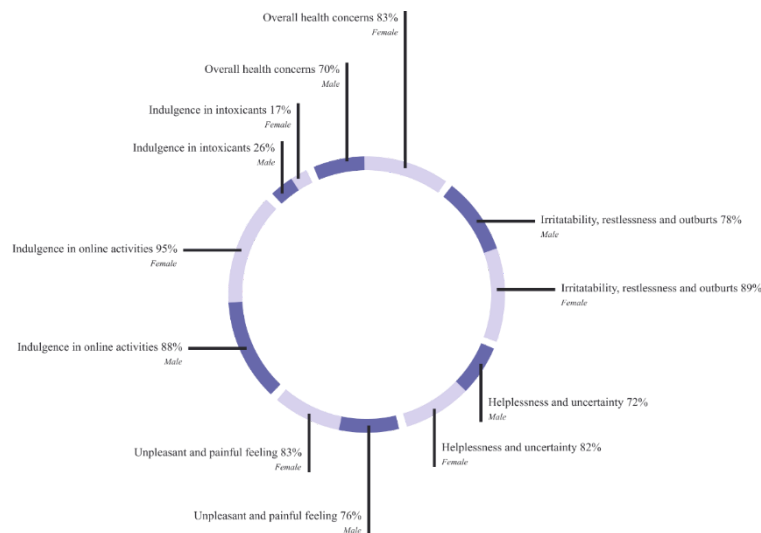
## 1.1 What is Mental Health?

We may have heard the terms mental and emotional health interchangeably, even as synonyms. However, do we pay attention to these words that hold deep value in our lives? The paper addresses the need of focusing on our mental health and offers a fun way to do so.

The term "mental health" has been used daily since the covid-19 pandemic, from news stories to casual conversations. Mental health is divided into psychological, social, and emotional health and can affect our ideas & activities. Our emotional well-being can influence numerous parts of our life, from how successfully we oversee pressure to how well we keep up with associations with others. Emotional health, like mental health, is a term that can be readily used around in casual conversation, even if no one knows what it means. Emotional health entails being aware of our feelings and being able to control and express them appropriately for our age.

Despite age, sex, pay, or race, each individual is in danger of creating emotional well-being issues. Factors like social and financial circumstances, organic factors, and way of life decisions can impact emotional well-being. A high percentage of individuals who have an emotional well-being problem have many circumstances at the same time. It is significant to recall that great psychological wellness is subject to a sensitive equilibrium between elements and that different parts of life and the world can all add to emotional well-being.

Psychological well-being is a condition of prosperity where individuals recognize their true capacity and can adapt to day-to-day challenges, work productively, and add to their current circumstances. Our capacity to think, act out, speak with others, make money, and appreciate life all in all and separately relies on our psychological well-being. On this premise, psychological well-being advancement, insurance, and rebuilding ought to be viewed as a real worry for people, networks, and social orders worldwide.



*Figure 1.1 Graph representing the percentage of males and females suffering from various situations after the Covid-19 pandemic.*

Source: (Moghe, 2021)

## 1.2 Why is it important to address mental health?

The COVID-19 pandemic has raised the attention on psychological well-being. Pandemics are known to enhance or make new stressors, for example, tension and misery for oneself or friends and family, limitations on actual development and social exercises because of isolation, and radical and sudden way of life changes. In a new evaluation of infection episodes and pandemics, contamination stresses, dissatisfaction, fatigue, deficient assets, lacking data, monetary misfortune, and shame were undeniably perceived burdens (Brooks et al., 2020, #).

Knowing about our general well-being is fundamental to recognizing any side effects and getting proficient consideration if essential. While the vast majority know about the side effects and treatment choices for specific diseases, like seasonal influenza, headaches, or, most as of late, COVID-19, many individuals are uncertain of how to treat their psychological well-being.

As per studies, individuals aged 16 and 25 showed pressure, nervousness, and discouraged tendencies (Mahmoud et al., 2012, #). Even though they acquire new abilities for keeping up with connections, autonomy, and independence, any barrier en route could prompt disavowal, self-accusing, disappointment, stress, wretchedness, or tension. During COVID-19's lockdown, changes in scholastic designs, tests, and a fight with restricted assets have been connected to tension, stress, disappointment, and burdensome problems (Bostan et al., 2020, #). Subsequently, it is basic to support frameworks that advance solid

psychological well-being arrangements and address the pandemic's social and profound repercussions (Matthews et al., 2018, #).

It is essential to emphasize the importance of talking about mental health. We want to perceive the upsides of discussing emotional well-being and encourage individuals to make it happen straightforwardly. Advantages such as 1) Removing the stigma - By discussing psychological sickness all the more regularly, we as a culture can ideally scatter the legends encompassing it. 2) Mental Health Disorders are on the Rise - Recently, the pervasiveness of some psychological wellness problems has expanded. As per a review, the number of youngsters encountering a Major Depressive Episode expanded from 11.93 % to 12.63 %. 3) Promote Treatment and Reduce Suicide Rates -Of the many reasons we ought to discuss psychological well-being, this may be the most pivotal. Many individuals are not seeking the treatment they need because emotional wellness is not. Because of their poor emotional wellness, they might end it all. As indicated by a review, more than 90% of people who end it all had side effects of a psychological wellness issue (Isometsä, 2001, #).

### **1.3 Mental health in India**

India has one of the planet's most prominent speeds of profound wellbeing issues. According to the National Mental Health Survey of 2016, over 14% of India's general population needs unique mental well-being interventions. More than 200,000 Indians end it all consistently. The World Health Organization (WHO) indicated that India's emotional wellness labor force is understaffed. There is a significant shortage of specialists and clinicians, contrasting with the number of individuals experiencing psychological illnesses. As indicated by the figures from the global association, there are scarcely three specialists and analysts for every 1,000 people. India's number of individuals with mental issues was supposed to reach 20% because of the pandemic and its factors. Around 56 million Indians experience the ill effects of discouragement, with one more, 38 million experiencing tension.

A review distributed in The Lancet took a gander at the psychological well-being trouble in each state. Psychological maladjustment affected around 45 million individuals in India. For instance, Maharashtra and certain northeastern states have a more noteworthy pace of psychological well-being issues than the nation's focal and northern states. As indicated by the review, the states with the most elevated pervasiveness of sorrow and nervousness issues incorporate Kerala, Karnataka, Telangana, Tamil Nadu, Himachal Pradesh, and Maharashtra, Andhra Pradesh, Manipur, and West Bengal.

Diagnosis	Bangalore		Baroda		Calcutta		Patiala	
	No. of cases	Rate/1000	No. of cases	Rate/1000	No. of cases	Rate/1000	No. of cases	Rate/1000
Epilepsy	278	7.82	51	1.28	59	1.71	11	3.17
Organic brain syndrome	4	0.11	24	0.61	22	0.64	88	2.40
Schizophrenia	65	1.83	70	1.77	71	2.05	113	3.09
Mania	20	0.56	14	0.35	8	0.23	50	1.37
Depressive Psychosis	28	0.79	22	0.55	127	3.67	150	4.10
Total no. of cases & Prevalence rate/1000	395	11.1	181	4.6	287	8.3	517	14.1

*Table 1.3.1 Table representing the prevalence of severe mental morbidity in a few states of India.*

*Source: (Kumar, n.d.)*

#### **1.4 Need for IBY analytics in the Mental health domain**

According to a recent survey conducted by the World Health Organization (WHO), 150 million Indians require mental health treatment.

If we have chest pain, we run to the hospital and pop pills for problems like high blood pressure, high cholesterol, and diabetes. On the other hand, we are hesitant to seek mental health treatment. We are so focused on our daily lives and striving for excellence that we forget to monitor our mental and emotional health. As a result, there must be a solution to assist people of all ethnicities.

Traditional solutions such as seeing a therapist or psychologist are available, yet many individuals consider them taboo and cannot afford them due to high expenses. There are also non-traditional options, such as online therapy or self-therapy apps. In the recent past, these have proved successful. Can we, however, use technology to go one step further in serving humans?

One of the best emotion detectors on the market is IBY analytics. IBY's AI-based live video analytics technology detects facial responses, face direction, eye glance, speech pitch, and pulse. It is a technology that uses AI to visualize and communicate overlooked emotions to people using simple visuals. It enables people to recognize and pay attention to their emotions while going about their daily lives. People tend to disregard their mental health, and our solution can assist them in keeping track of their emotional balance and mood. An AI that is concerned about your well-being.

Here are a few reasons why IBY analytics is needed:

- India has one of the world's most noteworthy places of psychological instability. The National Mental Health Survey of 2016 indicates that more than 14% of India's populace needs dynamic emotional well-being intercessions.
- Approximately 2,000,00,000 Indians commit suicide each year rather than seek help.
- To de-stigmatize mental health in India, steps must be taken to educate and sensitize society, as well as normalize emotional health,
- The COVID-19 pandemic has raised regard for emotional wellness, particularly for those affected.
- Artificial intelligence (AI) could provide new ways to improve mental health outcomes.
- Artificial Intelligence (AI) may be able to detect behavioral symptoms of mental disorders with more than 90% accuracy.
- Posture detection by IBY will be able to detect anxiety symptoms such as nail-biting and hand tapping.
- Voice detection by IBY will be able to detect depressive symptoms with voice pitch and speed.
- AI can eliminate judging and reduce bias and human errors when analyzing a person.
- IBY AI analytics can also help detect warning indicators of potential danger.
- The IBY solution will help from any area 24 hours every day, seven days per week.

## 2. Project Brief

### 2.1 Aim of the project

- Using IBY analytics, create a mental health solution.
- To give a variety of exercises to help people with various mental health disorders.
- Encourage people to give attention to their mental and emotional well-being.

### 2.2 Motivation

Anxiety has been a part of my life since I was a child, but I had no idea what it was named. I have gone through it every day, from having a racing heart to sweaty hands, and it has just brought me embarrassment and damaged my self-esteem. This project has allowed me to learn more about myself. Identifying my situation brought immense comfort to me and encouraged me to find solutions. Like how I struggled to understand



myself, I believe some people might be experiencing the same situation. I aim to assist several other Individuals in identifying and naming their feelings.

### 2.3 Scope

Within the scope of the thesis project, the following aspects of building a mental health solution using IBY analytics are as follows:

- User study and analysis
- Emotional analysis results using IBY's AI
- Exercise concepts
- The first phase of the project is to design the user interface.

### 2.4 Limitations

- While utilizing the IBY solution, the client may initially miss the mark on the point of view expected to grasp the idea of their concerns completely.
- A client's drive or resolve might be inadequate to adhere to a self-improvement arrangement.
- Clients might utilize different techniques (refusal systems, protection components, and externalization) to deny or contort current realities about what is going on in their lives, bringing about sluggish or no improvement in their circumstances.
- To analyze a user using the IBY AI, they need to use their camera to let the AI analyze them. Will the user allow the AI to analyze them constantly? Users might not allow the AI to analyze them throughout the day, resulting in a lack of information in the analysis.
- A professional helps determine the root cause of the problem causing the person's distress. The AI might not be able to assist users similarly.

### 2.5 Client

I'mbesideyou Inc.

I'm Beside You (a Japanese organization) is a video analytic AI product that empowers online communication custom-fitted to every individual's personality.

**Proposal:** To design a mental health solution using IBY analytics for the Indian audience.

**Problem statement:** This design project aims to integrate IBY AI analytics to assist Indians in recognizing and tracking their constantly conflicting emotions. People who battle to acknowledge and deal with feelings are bound to foster emotional wellness

issues, particularly after the Covid-19 pandemic. The purpose is to break the stigma among the Indian audience, encourage them to open up about their concerns and seek assistance, leading them towards a healthier mind, and re-empower people to take control of their own lives.

### **3. Literature review**

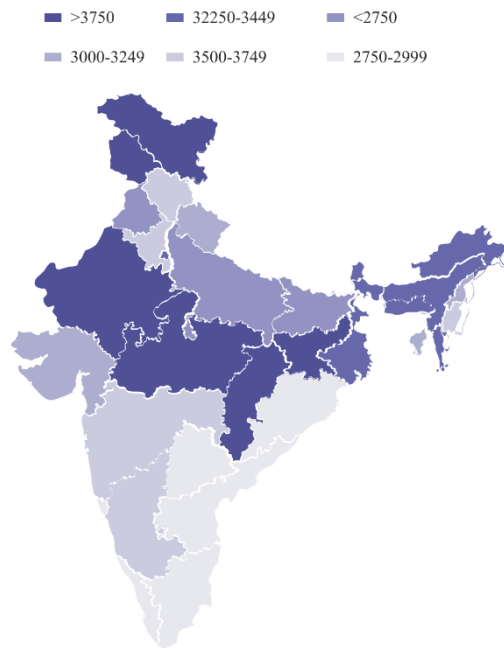
#### **3.1 Mental health and psychological disorders**

A clinically massive disturbance in a singular's perception, personal control, or lead is viewed as a mental problem. Disrupted thoughts, emotions, and behaviours are maladaptive because they interfere with day-to-day living. Also, occasional sad moods that persist and become incapacitating may indicate a psychological problem (American Psychiatric Association, 2013, #).

In ancient times, supernatural forces seemed to be the primary explanation for psychological disorders. Early theories of abnormality in Indian, Chinese, and Egyptian cultures appeal to supernatural reasons and bodily fluids or energy imbalances.

Psychological ideas and treatments created in the late 19th and early 20th centuries have evolved with research to the current day. Integrating cognitive and behavioural approaches to problems has been a critical achievement in the previous half-century. Psychologists like Bandura, Rotter, and Mischel made this theoretical relationship. In addition to those mentioned, psychologists like Beck and Ellis were pioneers in designing treatments based on these theories.

In 2017, more than 197 million Indians, or around one in each seven, experienced mental problems of various seriousness. Melancholy, tension issues, schizophrenia, bipolar problems, idiopathic formative, scholarly handicap, lead issues, and mental imbalance are a couple of models. Misery and uneasiness problems are India's most successive mental sicknesses, influencing 45-46 million people. They are becoming more normal across India, with a higher recurrence in the southern states and ladies. From 1990 to 2017, the extent of mental problems to the complete illness in India multiplied, demonstrating the requirement for successful ways of controlling this developing effect (Public Health Foundation of India, 2019, #).



*Fig 3.1.1 Graph representing the burden of mental disorder across the states of India, 2017*  
*Prevalence per 100 000*  
*Source: Lancet Psychiatry 2019*

In India's recently concluded National Mental State Survey, the prevalence of mental disorders among 18 to 29 years was estimated to be 7.39 %, excluding tobacco use disorder. Such problems affect 9.54 % of people at some point in their lives.

The young people of India are one of the country's most valuable resources, and this generation must be nurtured for the country's bright future. As indicated by the Indian Journal of Medical Research, there are 1.8 billion youngsters matured 10 to 24 around the world. India has the highest young population of 356 million people in the world.

According to the World Health Organization factsheets published in 2019, 10-20% of all teenagers globally, including 10 to 19, have a mental disorder. Moreover, it expressed that self destruction is the world's second-biggest reason for death among individuals matured 15 to 29. Anxiety, depression, suicide, and substance addiction are primary issues affecting today's youngsters. Often, these children are unable to cope with stress and resort to coping techniques such as substance abuse. It also shows that 15% of adolescents in Kerala consume alcohol, with 23 % of guys and 6.5 % of girls.

Coronavirus has caused destruction on individuals everywhere. It has made extensive harm to public psychological wellness and the undeniable actual side effects in tainted examples (Rehman et al., 2020, #). The pandemic has significantly impacted young adults' mental health. Although these young adults are learning how to cope with these uncertain situations by creating a daily schedule and developing their skills, increasing

their use of social media for entertainment and the constant feeling of uncertainty has led to depression.

### 3.2 Depression

Everybody encounters misery or low mindsets now and again, yet these sentiments typically blur with time. Sadness is unique. It can have extreme side effects that influence how one feels, thinks, and handles ordinary assignments like dozing, eating, and working. A condition can strike anybody of all ages, races, pay, culture, or academic level. Melancholy is believed to be brought about by hereditary, natural, ecological, and mental variables.

As per the 2021 State of the World's Children Report, 1 out of 7 youth matured 15 to 24 detailed feeling discouraged during the pandemic in India. COVID-19 might have a long-term impact on India's young people's mental health and well-being, according to UNICEF's flagship report, which was launched by Shri Mansukh Mandaviya, Minister of State for Health and Family Welfare and a panel of experts in 2021. As indicated by UNICEF's new 'Condition of the World's Children (SOWC)' report, an expected 14% of India's youngsters matured 15-24 years detailed feeling discouraged and uninterested, contrasted with an overall middle of 19%. As indicated by a review of 21 nations, "83% of youngsters (15 to 24 years of age) felt that it was ideal for managing psychological well-being troubles by imparting encounters to other people and looking for help; simply 15% said such issues were private and ought to be managed all alone". India was the primary case among the 21 nations, with 41% of youngsters leaning toward the sharing choice. The outcomes show concerning finding since it demonstrates that such youngsters are less inclined to look for and get proficient consideration and will continue experiencing untreated mental issues.

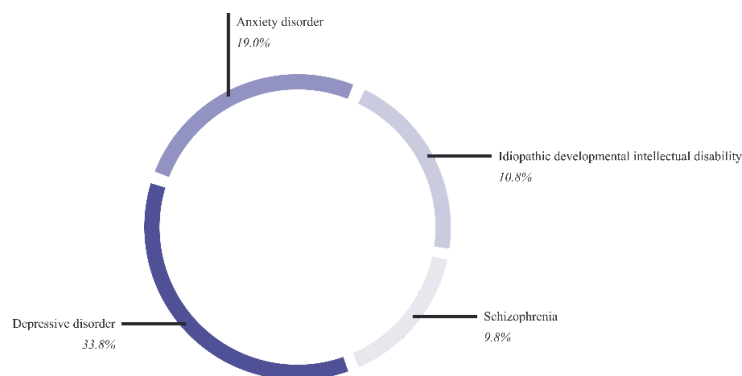


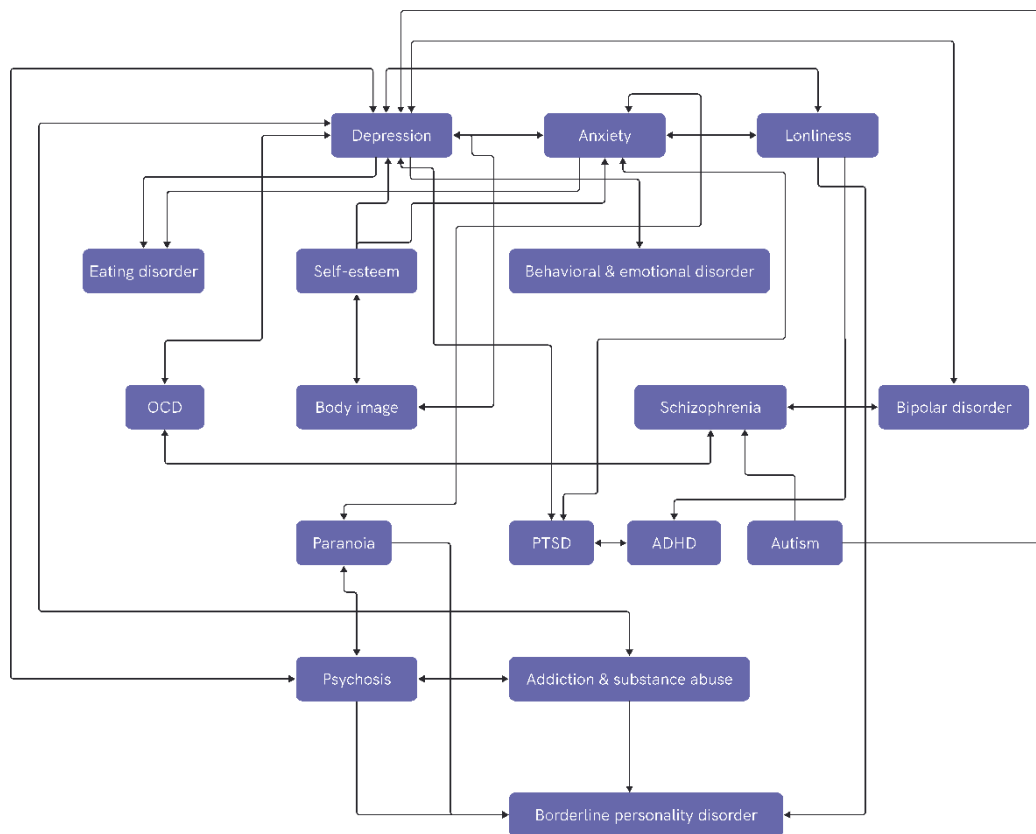
Fig 3.2.1 Graph representing the rise of Depression and Anxiety in India, 2019

Source: Lancet Psychiatry 2019

In India, almost 40,000 young adults have committed suicide in the last five years. The pandemic is not the only thing that has put a mental strain on these youngsters. These young adults' depression has been caused by various factors ranging from difficulties with friends and family to academic pressure, bullying, and a slew of others that are considered 'insignificant' things to adults.

"We found that depression is highest in Indians, which has serious ramifications for them," says Balram Bhargav, Director of the ICMR. According to studies, people between 16 and 25 show stress, anxiety, and depressed inclinations (Mahmoud et al., 2012, #). Despite mastering new abilities for keeping up with connections, freedom, and independence, any difficulty could prompt disavowal, self-accusing, disappointment, stress, sadness, or uneasiness.

All the mental health disorders can be interlinked and examined to find potential solutions to their concerns. When a person is diagnosed with one mental health issue, they are likely to be diagnosed with other disorders.



*Fig 3.2.2 Mapping to showcase interlinks between various mental health disorders*

### 3.3 Diagnosing depression disorder

Gloom, frequently known as a significant burdensome problem or clinical misery, is an extreme state of mind that influences many individuals. Wretchedness makes individuals feel miserable and irredeemable constantly, and they lose interest in exercises they used to appreciate. Besides the close-to-home worries that the downturn causes, individuals may have actual side effects like tenacious agony or stomach-related issues.

An individual high priority no less than five burdensome side effects consistently for something like fourteen days to be determined to have sadness. A miserable state of mind or a deficiency of interest or no delight in basic movements of every sort is one of the side effects. Rather than being miserable, kids and young people might feel peevisish. While diagnosing depression, the following symptoms that are approved by DSM-5 should be kept in mind:

- Lingered sad, anxious, or "empty" mood.
- Pessimism or a sense of hopelessness.
- Irritability, frustration, or restlessness feeling.
- Guilt, a sense of worthlessness, or a sense of helplessness feeling.
- No pleasure or interest in hobbies or day-to-day activities.
- Reduced energy, feeling tired, or a feeling of being "slowed down."
- Concentration, memory, or decision-making difficulties
- Sleep disturbances, early morning awakenings, or oversleeping.
- Appetite shifts or unintentional weight gain.
- Body aches or pains, headaches, cramps, or digestive difficulties that have no apparent medical explanation and do not improve upon treatment.
- Thoughts of death or suicide or attempts to suicide.

The latest version of the Diagnostic and Statistical Manual of Mental Disorders (DSM) included two new specifiers to assist determined sorrow to have facilitating:

*With Mixed Features* —This specifier permits hyper episodes or hyper side effects as a component of gloom conclusion in a person.

*With Anxious Distress* — Anxiety can influence a patient's forecast, treatment choices, and how they answer them. Experts should survey whether an individual with sadness is likewise experiencing uneasiness trouble.

Depression can strike anybody, no matter what their age. It can, notwithstanding, variedly affect various people contingent upon their age.

Youngsters who are discouraged might be anxious, fretful, act wiped out, decline to go to class, grip to a parent, or dread that a parent might leave them.

More seasoned kids and youngsters with misery might get into naughtiness at school, scowl, become effectively disappointed, fretful, or have low confidence. They may likewise experience the ill effects of tension, dietary issues, and consideration shortage hyperactivity jumble (ADHD). Hypersomnia (unreasonable languor) and expanded hunger are normal in more seasoned youths and teens (hyperphagia). Females are more likely than guys to foster despondency throughout youthfulness due to the natural life cycle and hormonal variables novel to ladies.

**Younger adults** With melancholy, are more fretful, endure weight gain and hypersomnia, and have a skeptical point of view and what is to come. This age group now and again experiences the ill effects of other mental issues, such as nervousness, jumble, social fear, alarm confusion, and substance misuse.

**Middle-aged adults** With wretchedness might encounter more burdensome episodes, lower moxie, restlessness around midnight, or early morning enlightenments. They may likewise report gastrointestinal issues like looseness of the bowels or clogging all the more habitually.

**Older adults** with depression habitually experience despair or sadness and other more subtle side effects. Rather than being discouraged, they might portray an absence of feelings. Other actual issues or troubles in more established grown-ups are bound to cause or add to wretchedness. In extreme cases, memory and thinking weaknesses (pseudodementia) might be observable.

### **3.3.1 Types of screening tests for depression**

A method for diagnosing despondency is through tests. A specialist can distinguish sorrow by posing specific inquiries and carrying out an actual assessment. Be that as it may, the specialist might demand blood testing to preclude different illnesses. The specialist will, in all likelihood, arrange blood tests to preclude any clinical problems that could be causing despondency side effects. Blood tests will be utilized to check for sickliness, thyroid or different chemicals, calcium and vitamin D levels, and other things.

Experts have involved various confirmed surveys and evaluating tests for sadness. Following a state of mind survey and what it means for life, the specialist might pose inquiries intended to evaluate for melancholy. It is essential to recall that the inventories and polls utilized by the specialist are just a single part of the clinical interaction for diagnosing despondency. Then again, these tests can at times give the specialist more data about generally speaking temperament. They can use them to make a more unambiguous conclusion.

The following are a few professional screening tests:

- The PHQ-9 (Patient Health Questionnaire-9) is a 9-item self-diagnostic screening test for depression.
- The Beck Depression Inventory (BDI) is a 21-question multiple-choice self-assessment tool that evaluates the level of depressive symptoms and moods.
- The Zung Self-Rating Depression Scale is a brief questionnaire that evaluates depression levels, ranging from average to severely depressed.
- -Depression Scale (CES-D) is an instrument that allows individuals to evaluate their previous week's moods, behavior, and attitude.
- The Hamilton Rating Scale for Depression (HRSD) is a multiple-choice questionnaire used by professionals to evaluate a participant's depression.

### 3.3.2 Types of treatments for depression

Medication, psychotherapy, or both are commonly used to treat depression. Brain stimulation therapy may be a viable alternative if these therapies lack to alleviate symptoms. In milder forms of depression, psychotherapy alone may be used as the first layer of protection, with medication added if symptoms persist. Many mental health professionals advise starting treatment with a mix of medication and psychotherapy for moderate or severe depression. The best treatment plan should be based on an individual's unique needs and medical status while under the care of a professional. Finding the treatment that works best for an individual may take trial and error.

**Medications:** Antidepressants are prescription drugs that are frequently used to treat depression. They take 4 to 8 weeks to work, and symptoms including insomnia, appetite loss, and concentration problems generally improve before mood improves. Before evaluating whether a medication works, it is essential to give it a chance. When using antidepressants, certain people, adolescents, teenagers, and young adults, may increase suicidal thoughts or behavior, especially in the first few weeks or when the dose is adjusted. The FDA has authorized no natural products for depression. While further research is needed, some people find that natural items, such as vitamin D and the herbal dietary supplement St. John's wort, can help them cope with their depression.

**Psychotherapy:** Psychotherapy teaches people with depression new ways of thinking and acting and how to break harmful patterns that cause depression. Most psychotherapy takes place in one-on-one sessions with a licensed, qualified mental



health professional or a group setting with other people. Cognitive-behavioural therapy (CBT) and interpersonal therapy are two effective psychotherapies for treating depression (IPT). Some individuals with depression may benefit from using earlier forms of psychotherapy, such as dynamic therapy, for a limited time.

**Brain Stimulation Therapy:** Mind feeling treatment, which includes straightforwardly initiating or hindering the cerebrum with power or attractive waves, is an extra choice for specific individuals whose endeavors at regular sorrow treatments have fizzled. Two of the most generally utilized types of cerebrum excitement treatment are dull transcranial attractive feeling and electroconvulsive treatment. There are more contemporary and, in certain conditions, still-exploratory sorts of mind excitement.

### **3.3.3 Self-help solutions for depression**

While looking for proficient clinical consideration for depression is generally better, particularly assuming the condition is serious, a few non-clinical methodologies might be utilized to ease the side effects all alone. Numerous specialists suggest that depressed people should take counselling, medication and a self-care approach.

Here are a few ways individuals with depressive symptoms can practice self-care to help overcome or lessen minimal to moderate depression symptoms:

**Exercise:** Many scientific research on depression has found that exercise is just as effective as medicine in treating minimal to moderate depression. Beyond helping with depression symptoms, exercise provides several other advantages, including improved cardiovascular health, weight loss, and a lower risk of acquiring many chronic conditions. When depressed, exercising might be strenuous, so start small and do something enjoyable. Practices that can help with depression are going for a day to day stroll, completing ten minutes of workout at home, or turning on some music and dancing. Exercise helps with depression symptoms by increasing endorphins, which are brain chemicals. Mild exercise can boost mood by increasing endorphin levels, even for a few minutes a day.

**Challenging Negative Thoughts:** When someone is depressed, they tend to think negatively. In the mind of a depressed person, thoughts like "I'm a disappointment," "Nobody likes me," and "I will constantly feel this way" are common. Negative beliefs like these get ingrained in our minds, reinforcing our despair. Negative thoughts can be counteracted by Positive thinking. For example, "How do I know that?" could challenge the negative belief "I will always feel this way." or recall a

moment when you had a different perspective on life. We often accept our thoughts as reality without questioning them. However, the adage "do not believe everything you think" holds much truth.

**Eating Wholesome Foods:** People who are feeling low or gloomy usually eat unhealthy food. Sweet, salty, and high-fat unhealthy food might make you feel momentary happiness, however they at last trigger glucose spikes, weight gain, and negative states of mind. The response is to find fortifying food varieties you appreciate, ensure there is sufficient food on accessible, and eat these things consistently. New natural product, mixed greens, lean meats, slick fish like salmon, and entire grain bread are invigorating choices, if there is no food sensitivity or other unfavorable response to the dinner. Finding healthy food sources that an individual might like and be molded to go after them in the midst of craving or misery is fundamental.

**Getting Enough Sleep:** Sleep is necessary for our body and brain to repair, renew, and rejuvenate. A restful night's sleep each night improves general health and energy levels, which can lessen the symptoms of depression. Depression and anxiety can contribute to insomnia, which is difficulty sleeping and staying asleep. Changing the routine could aid in getting a better night's sleep. For instance, go to bed at the same hour each night. Prior to going to bed, stay away from caffeine-containing beverages for at least two hours and skip eating for at least one hour.

**Drinking Plenty of Water:** Water is necessary for bodily function. Regularly consuming adequate water enhances the performance of internal organs, aids in toxin removal, and even improves mental clarity. Many people drink too little water and instead prefer to drink soft drinks, coffee, and alcoholic beverages. By making the body lose fluids, these beverages encourage dehydration. For excellent health, adults need about two to three quarts of liquid each day in addition to what they consume in food. Taking care of our body will make us feel better and less unhappy.

**Changes in Routine:** People who are depressed frequently develop bad habits that make their symptoms worse. For instance, a depressed person might get up, go to work, come home, watch the same TV shows every night, and then overindulge in unhealthy foods before going to bed. A person could feel terrible about oneself as a result of this kind of regimen. It need not be difficult to make a routine change. When you get home from work, make a commitment to taking a little walk before turning on the TV. Instead of eating a dinner that is unhealthy, make a tiny effort to eat a healthier meal. Changing habits can help reorganize our brain's dopamine pathways,

which are connected to emotions of happiness. Changes in routine do not have to be huge to impact positively.

**Get into a Routine:** Lack of structure and routine in daily life might be a problem for some depressed people. In this case, establishing a more disciplined schedule might help to lessen the symptoms of depression. It might be easy to adopt a new, healthy lifestyle. A simple but potentially important shift in daily behaviours is simply getting dressed in the morning rather than lounging around in pyjamas. Other recommendations include making a call to a friend each day, taking a little stroll, journaling, or listening to music for 30 minutes. As we establish new patterns and behaviours, dopamine levels rise, which can make us feel less depressed.

**Laughter is the best medicine:** Another technique to increase dopamine levels in the brain is through laughter. Dopamine levels can be increased and depressive symptoms can be lessened by doing activities like sitting down to watch comedies or movies, reading jokes, laughing with people, or just thinking about amusing things.

**Helping Someone Else:** We have a high inclination to become self-absorbed when we're depressed. In our imaginations, our anxieties become more significant, which makes us feel more helpless. The answer is as simple as helping someone else or taking care of a pet animal. A few examples include calling a friend to see how they are doing, volunteering at a nearby nonprofit, helping a neighbour with yard work, and getting a pet. Our self-esteem is raised and our focus is diverted away from our difficulties when we are helping others. Any respite from unpleasant feelings can help one think more optimistically and feel better.

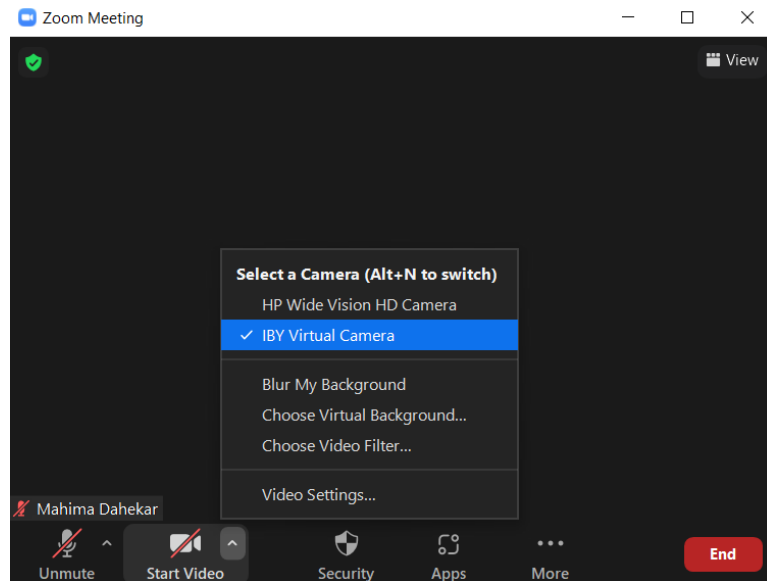
### 3.4 The working of IBY analytics

IBY has created sophisticated artificial intelligence to detect facial cues, speech analysis, and people's body language. After the COVID-19 epidemic, the goal of this technology was to improve online communication and bring people closer together.

Since the Covid-19 outbreak, many people have switched their communication to online channels and it may be difficult to understand someone else's reaction when they write something. Due to the circumstances, people are starting to have trouble understanding their emotions.

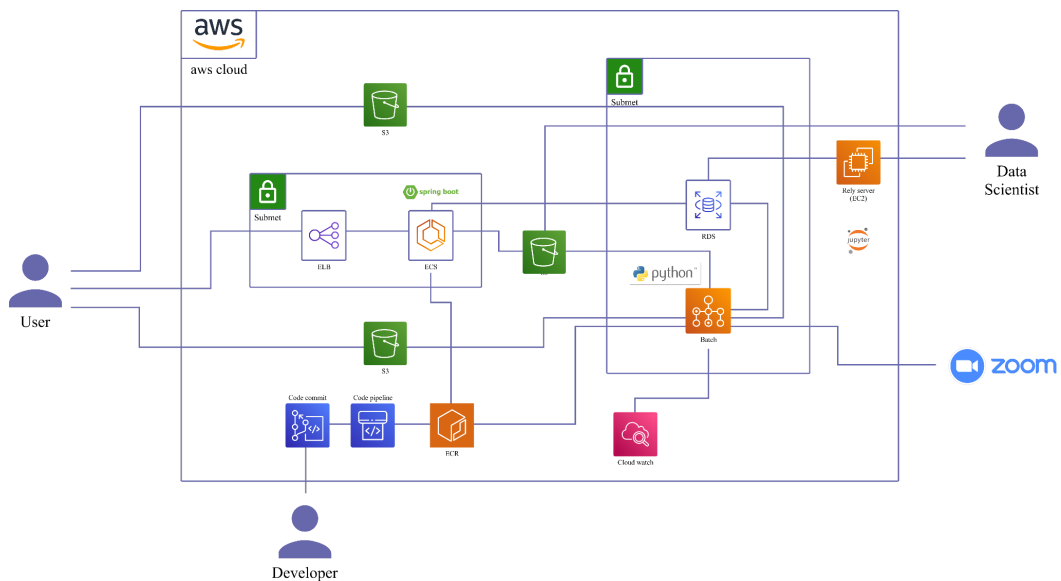
IBY has created a multimodal AI system to study people's emotions as a result. Once we set up our camera app to function as a snap camera on Zoom, the IBY application will

visualise our engagement, mental health condition, and conversation quality. We assess relative changes in each person since emotions and reactions differ from person to person.



*Fig 3.4.1 Using IBY Virtual Camera on zoom to use the IBY AI analytics*

The AI evaluates users via zoom calls or identical snap cameras, stores the user data in the cloud, and evaluates the data to guarantee the protection of user data. The user is then informed of the analysis' findings.



*Fig 3.4.2 Backend working of IBY virtual camera cloud version*

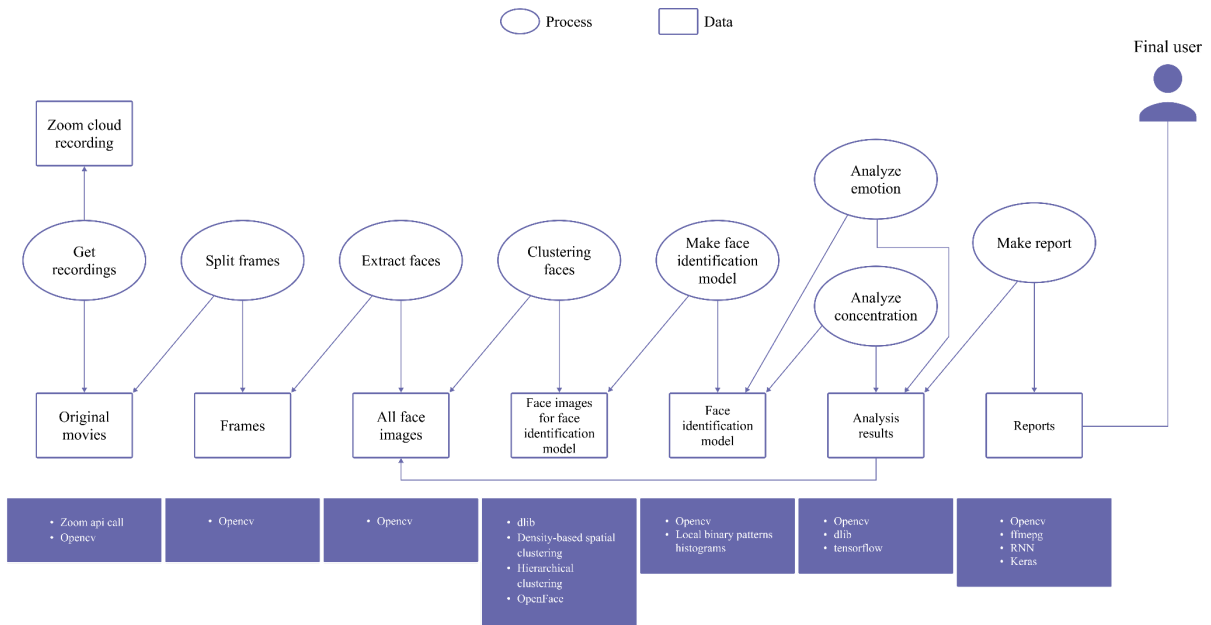


Fig 3.4.3 Data processing pipeline of IBY virtual camera could version

## 4. Case study

### 4.1 Design process timeline

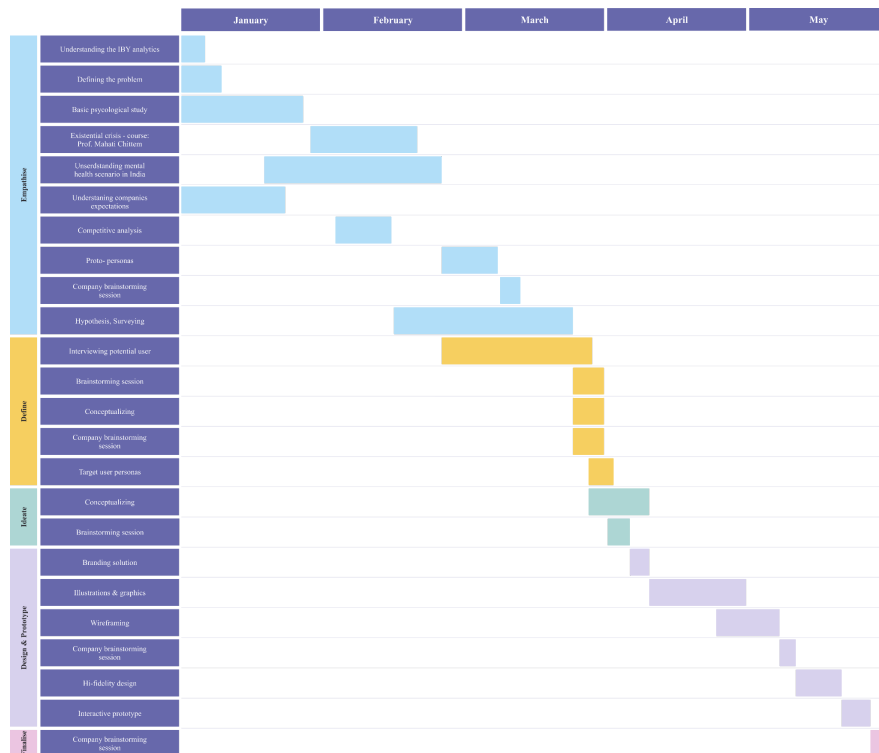


Table 4.1.1 My timeline and deliverables planned out for five months

## 4.2 Background research and hypothesis

India has 375 million internet users despite only having a 28 percent online prevalence, according to data published by the Internet and Mobile Association of India in 2016.

More than ever, a lot of us rely on technology and the internet, especially now that everything is at our fingertips.

Data from the census show that 8.3 percent of people have mental illnesses or disorders (Government of India, 2011, #). In India, there are just three psychiatrists and much fewer psychologists per million people (World Health Organization, 2015, #). The gap between the supply and demand of services for treating significant mental health illnesses approaches 50%, and it reaches 90% for treating common mental disorders (MoHFW, 2015, #). It is a well-known fact that our nation lacks enough mental health specialists to satisfy the demands of those seeking these services, together with the high mental health medical costs, given the frequency of mental health diseases.

The covid-19 outbreak is anticipated to have a long-term impact on mental health. Right now, everyone is assisting everyone since we are in an altruistic phase. Once the altruistic period is through, there will be a fear of disillusionment. The fear of disease will increase, panic attacks will happen more frequently, and nightmares will happen more frequently.

What can we do if we are struggling to manage our mental illness on our own but cannot afford therapy? A mobile app might be helpful. In recent years, there have been numerous mental health apps available for smartphone users. These free or low-cost mental health applications offer a variety of technologies that improve the portability, affordability, and accessibility of therapeutic methods. But how effective are these self-help techniques?

Following are a few milestones while using mobile app as solutions or self-therapy tools:

- Users might miss the mark on viewpoint to appropriately grasp the idea of their issues.
- Users might miss the mark on inspiration or resolution to adhere to a self improvement plan.
- Individuals track down numerous ways of denying or mutilate the reality of what is turning out badly in their lives (denial strategies, defense mechanisms, and externalization)

The Counsellor's Guide defines self-counselling as "examining one's behaviour using psychoanalytical techniques of free-thinking and free association." You can "take more effective control of everyday problems and allow yourself to grow farther with its assistance." Dr. Raichbach believes that a perfect mental health app will have professionals on staff and a round-the-clock support line. Tanisha Ranger, a psychologist, says that while mental health applications might be useful when talking to her patients,

What effects on mental health can IBY's AI analytics have? People may struggle to recognise their feelings and moods and become confused when trying to understand them. Lack of awareness of one's emotional wellbeing may result from an inability to name emotions, which can develop into a severe mental disease. People frequently disregard their own emotional and mental well-being. Everyone's mental health has been affected by the COVID-19 pandemic, and as a result, individuals are sharing their experiences and asking for practical solutions. No matter what is going on in a person's life, the IBY's AI may assist in identifying that person's emotion and serve as a reminder to pay attention to one's emotions and mental health.

### **4.3 Learning psychology and Existential crisis**

I took a course on existential crises taught by Professor Mahati Chittam at IIT, Hyderabad, before diving into the project solution. This class assisted me in grasping the fundamentals of human psychology and applying what I learned when conducting interviews with the intended audience.

### **4.4 Understanding the mental health of the Indian audience**

The country's mental suffering is increasing, according to Nirmala Sitharaman, India's finance minister, who made this claim in February 2022. She asserted that people of all ages have had worsening mental health concerns as a result of the pandemic. The barriers to Indians seeking professional help for mental health issues when they need it have included a lack of knowledge about the symptoms of mental illness, myths and stigma associated with it, as well as a lack of knowledge about the available treatments and potential advantages of seeking treatment. Mental health problems are still rarely given the attention they deserve, even in cities. Few people actually ask for help when they are in need. It's a terrible scenario in rural areas. Statistics illustrate the depressing truth.

Disorder	Depressive disorder	Anxiety disorder	Idiopathic developmental intellectual disability	Schizophrenia	Bipolar disorder	Conduct disorder	Autism disorder	Eating disorder	ADHD	Other mental disorders
India (138 million population)	358	306	175	189	113	96	53	34	5.8	131
Andhra Pradesh	467	294	213	143	106	108	74	31	5.1	138
Bihar	484	292	232	133	102	117	74	24	5.3	114
Madhya Pradesh	471	268	207	147	106	101	53	32	5.8	133
Jharkhand	474	318	192	148	107	118	53	33	5.1	131
Uttar Pradesh	462	240	213	137	104	112	74	30	5.2	134
Rajasthan	444	312	196	144	109	105	74	34	4.9	122
Chhattisgarh	444	275	181	154	110	96	52	35	4.9	127
Odisha	728	316	186	153	112	99	52	34	4.6	135
Assam	556	307	201	152	108	99	53	33	5.6	127
West Bengal	413	321	155	173	119	96	53	34	4.8	139
Andhra Pradesh	795	328	151	177	121	82	52	34	4.5	143
West Bengal	555	331	189	150	120	87	52	33	4.7	141
Tripura	505	323	179	172	120	89	52	34	4.7	139
Arundhat Pradesh	597	300	155	144	109	110	74	46	5.3	134
Meghalaya	577	296	182	141	108	116	74	34	5.4	133
Karnataka	417	324	142	175	120	71	52	34	4.9	141
Telangana	796	324	142	175	120	85	52	43	4.7	140
Gujarat	528	302	153	171	117	91	53	41	4.8	136
Madhya Pradesh	615	300	184	162	118	96	53	33	4.9	135
Jammu and Kashmir	475	312	168	166	117	106	74	36	5.2	139
Haryana	425	308	119	166	114	91	54	43	4.9	132
Uttar Pradesh	615	329	121	181	120	84	51	42	5.2	144
Uttarakhand	480	317	128	164	118	99	53	42	4.9	132
Tamil Nadu	436	323	127	183	113	76	51	41	4.9	147
Mizoram	441	316	199	162	117	106	53	34	5.0	139
Maharashtra	620	324	127	179	121	96	53	43	4.2	142
Punjab	487	307	123	179	121	85	53	40	4.6	144
Sikkim	595	323	112	185	124	98	34	52	4.9	142
Nagaland	504	308	141	153	114	112	54	39	5.3	124
Himachal Pradesh	588	329	121	182	121	82	54	41	4.5	143
Chhatisgarh	446	330	103	186	120	82	54	40	4.3	145
Kerala	483	311	107	187	117	71	47	38	5.3	149
Delhi	429	321	87	185	117	84	54	52	4.8	141
Goa	626	315	71	210	124	72	52	54	2.2	150

Table 4.4.1 Rate of mental disorders in the states of India grouped by SDI(Socio-demographic Index), 2017

Source: Lancet Psychiatry 2019

There were 197.3 million people with mental diseases in India in 2017, or 14.3 percent of the total population. In India, mental illnesses caused 47 percent of DALYs in 2017, up from 2.5 percent in 1990. While autism spectrum disorders and ADHD were significantly more common in men than women, depressive disorders and eating disorders contributed significantly more to total DALYs in women than in men.

Disorder	Sub-disorder	Both genders	Males	Females
Depressive disorder		33.8%	28.9%	38.6%
	Major depression	26.7%	22.7%	30.6%
	Dysthymia	7.1%	6.2%	8.0%
Anxiety disorder		19.0%	16.2%	21.7%
Idiopathic developmental intellectual disability		10.8%	11.8%	9.7%
Schizophrenia		9.8%	11.2%	8.5%
Bipolar disorder		6.9%	7.2%	6.6%
Conduct disorder		5.9%	7.9%	3.9%
Autism disorder		3.2%	4.8%	1.7%
Eating disorder		2.2%	1.5%	2.8%
	Anorexia nervosa	0.5%	0.2%	0.7%
	Bulimia nervosa	1.8%	1.3%	2.2%
ADHD		0.3%	0.5%	0.2%
Other mental disorders		8.0%	9.9%	6.3%

Table 4.4.2 Percentage due to each cause under mental disorders in India, 2017

Source: (India State-Level Disease Burden Initiative Mental Disorders Collaborators\*, 2019)

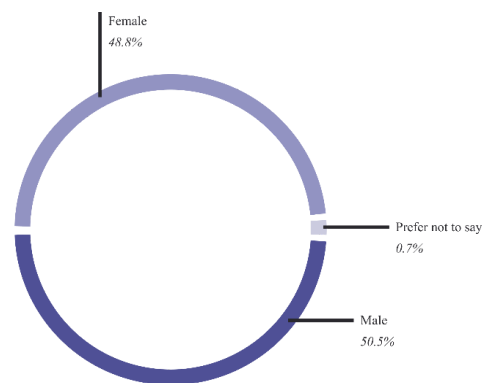


## 4.5 User surveys and interviews

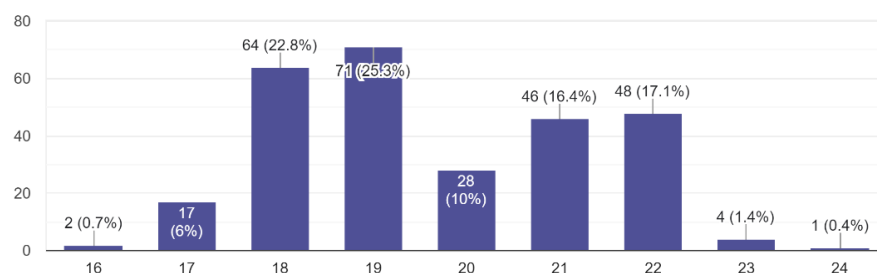
Between January 2022 and May 2022, research was done for this report's analysis and findings on individual mental health. For the study, two surveys were conducted: the first was used to gather information on people's general mental health, and the second was used to determine the prevalence of depression among the target audience determined from the results of the first survey. These results were then utilised to identify a target audience and categorise the kinds of activities that would be most effective for them. The survey results are as follows:

- **Mindfulness research survey**

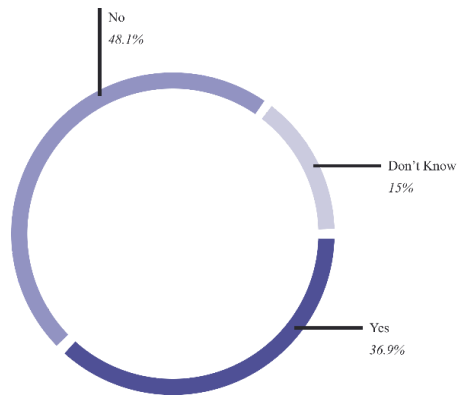
287 responses



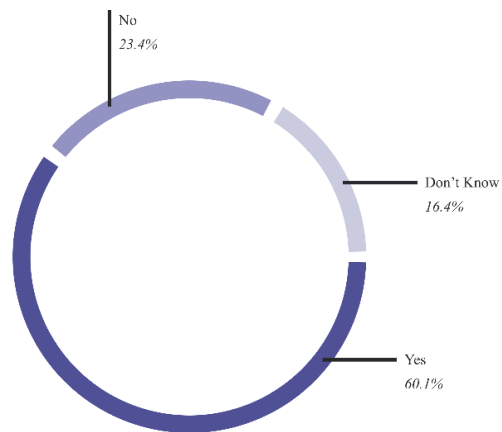
*Fig. 4.5.1 Gender of the users who participated in the mindfulness survey, 2022*



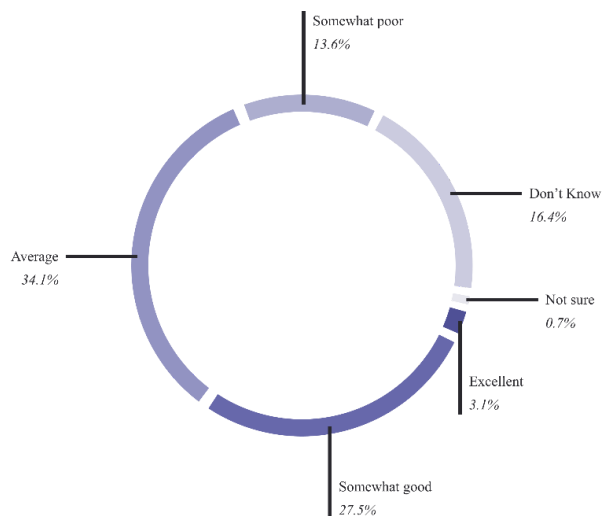
*Fig. 4.5.2 Ages of the users who participated in the mindfulness survey, 2022*



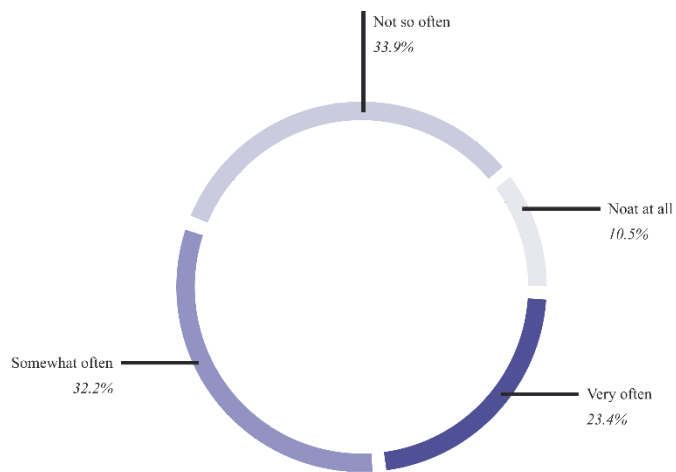
*Fig. 4.5.3 During the previous year, have the users had any problems with their work or daily life due to your physical health?*



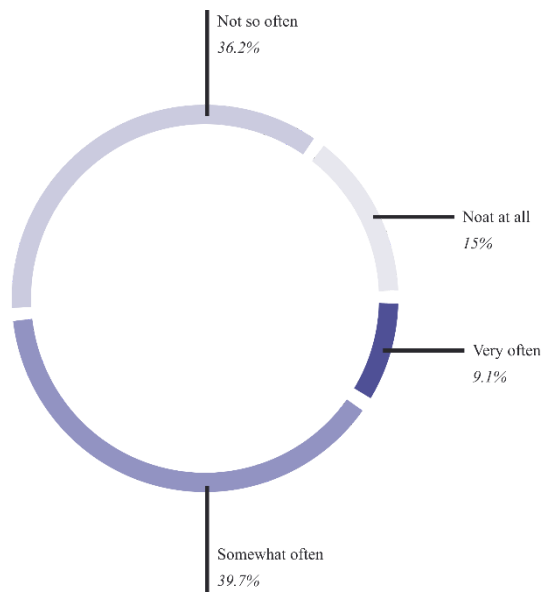
*Fig. 4.5.4 During the previous year, have the user had any problems with their work or daily life due to any emotional problems, such as feeling depressed, sad or anxious?*



*Fig. 4.5.5 Overall how would they rate their mental wellbeing*



*Fig. 4.5.6 Have they felt low or down for more than 2 weeks in a row?*



*Fig. 4.5.7 During the previous year, how often have their mental health affected their relationships with others?*

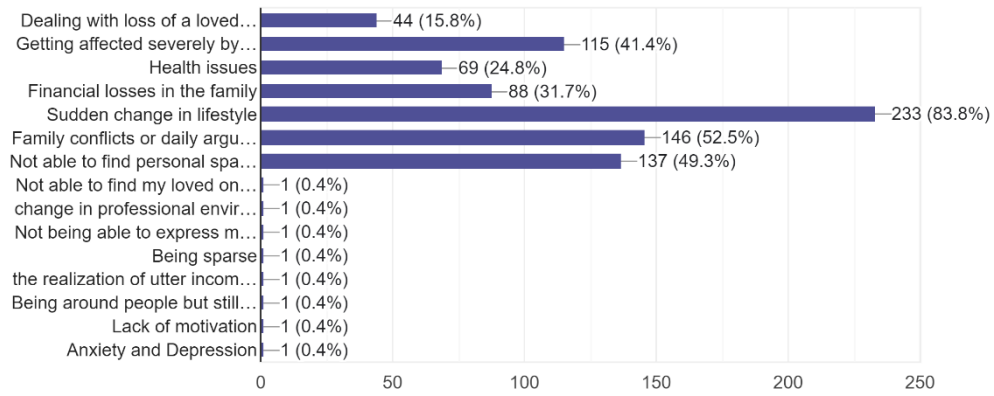


Fig. 4.5.8 What did you have to deal with in the past 2 years?

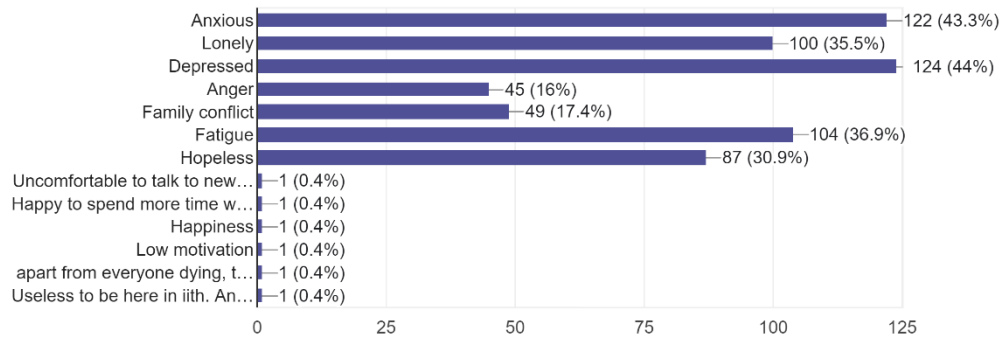


Fig. 4.5.9 Since the pandemic hit, what have you felt the most?

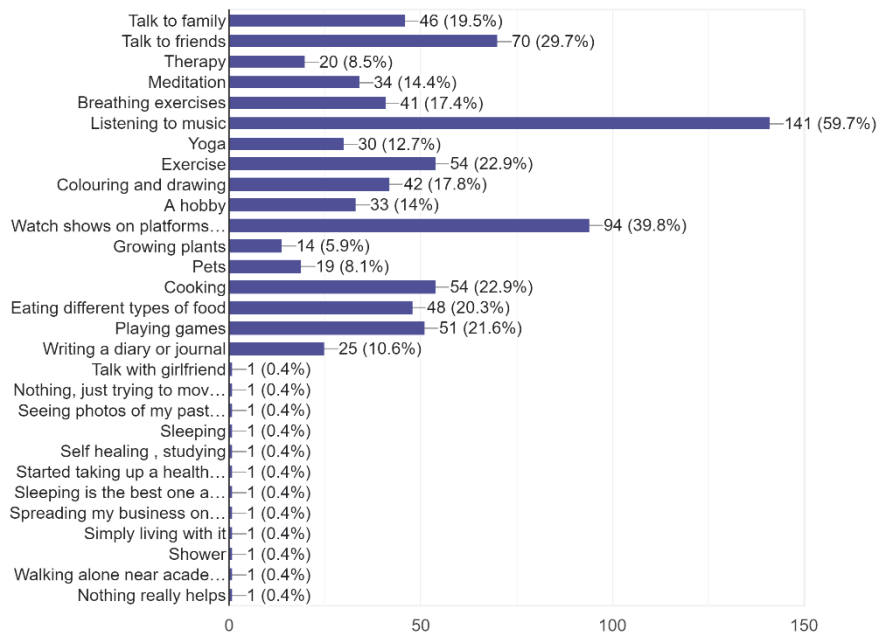
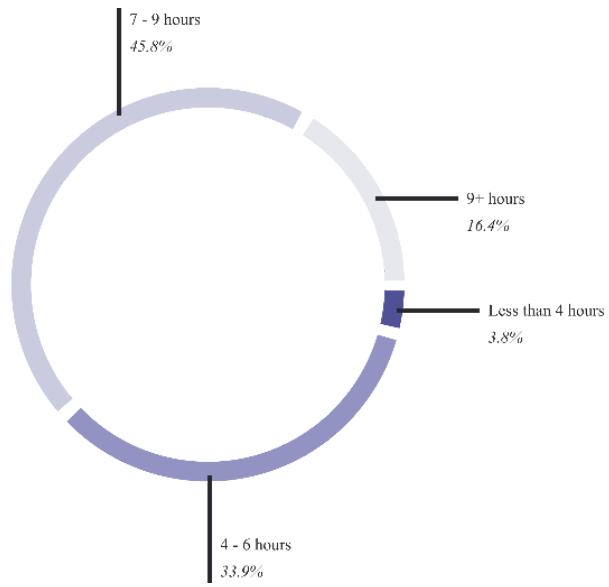
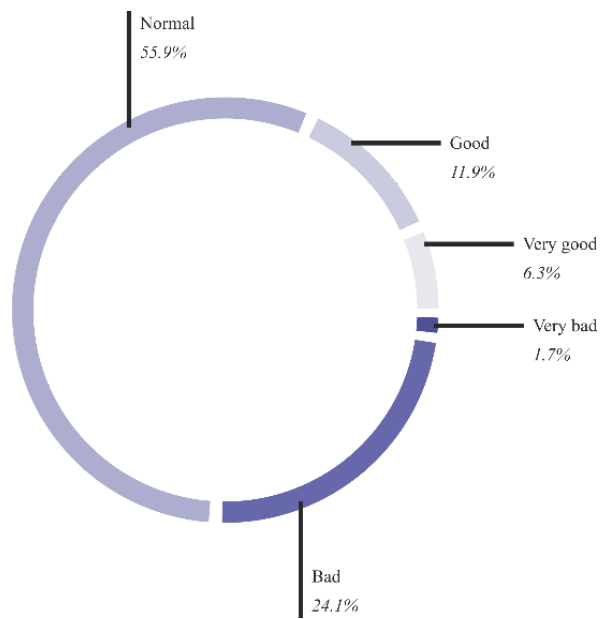


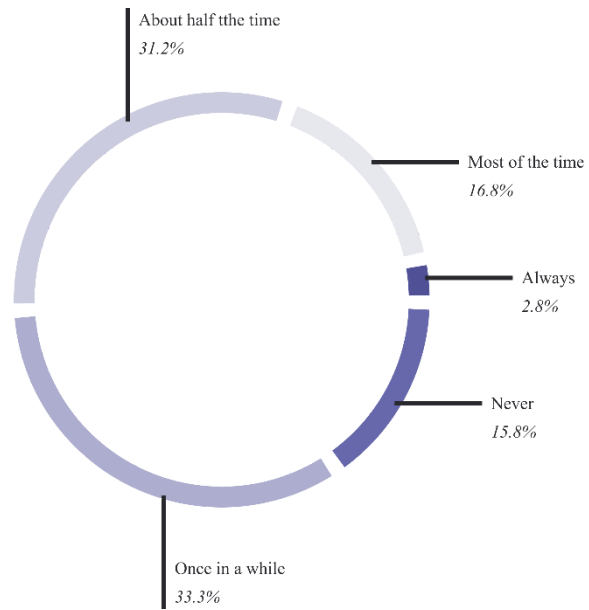
Fig. 4.5.10 What did you do to cope with these feelings?



*Fig. 4.5.11 Number of hours they sleep per day*



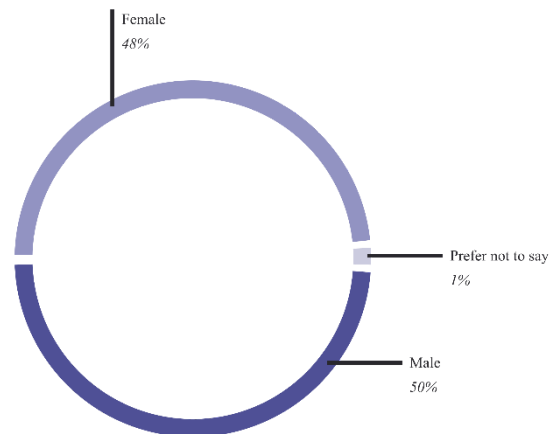
*Fig. 4.5.11 The quality of their sleep*



*Fig. 4.5.11 How often do they feel positive about their own life?*

- **Mending our Minds with AI research survey**

102 responses



*Fig. 4.5.12 Gender of the users who participated in the mindfulness survey, 2022*

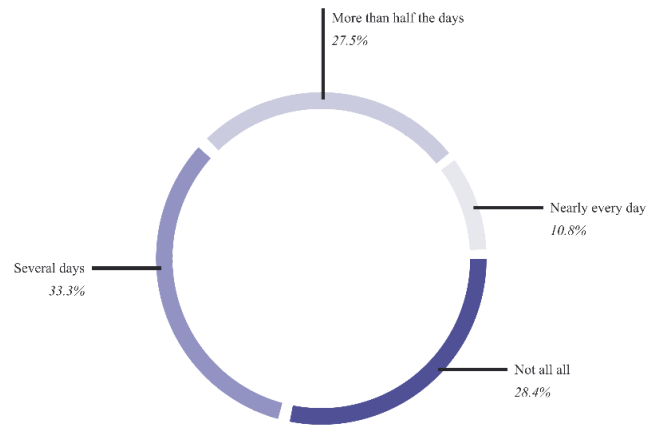


Fig. 4.5.13 Do the users have little interest or pleasure in doing things?

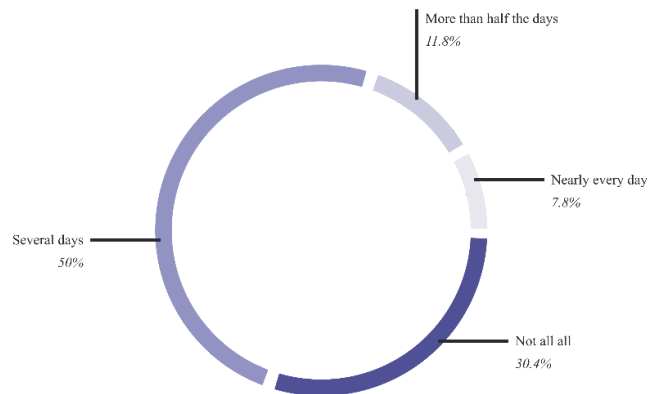


Fig. 4.5.14 Do they have any trouble falling asleep, staying asleep, or sleeping too much?

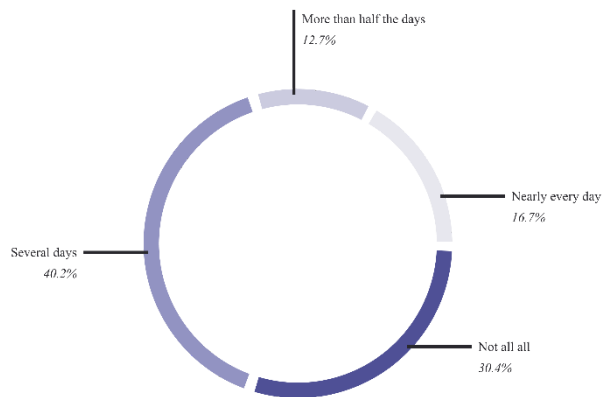
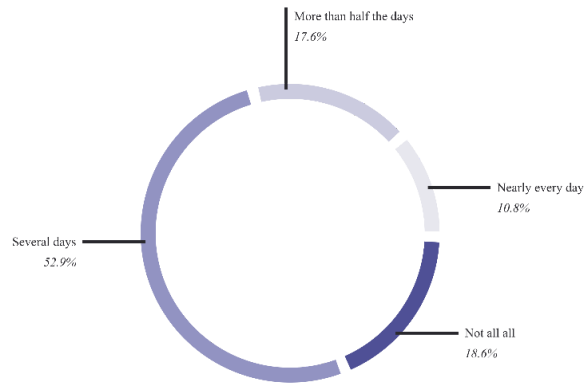
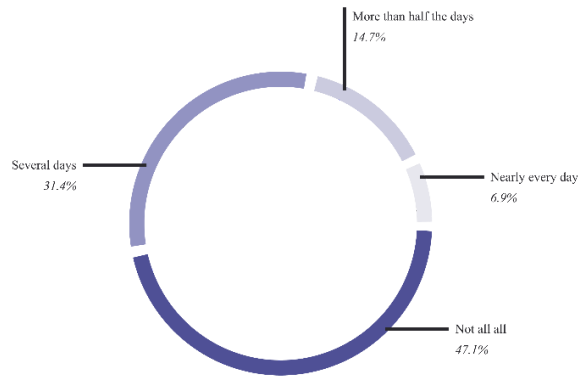


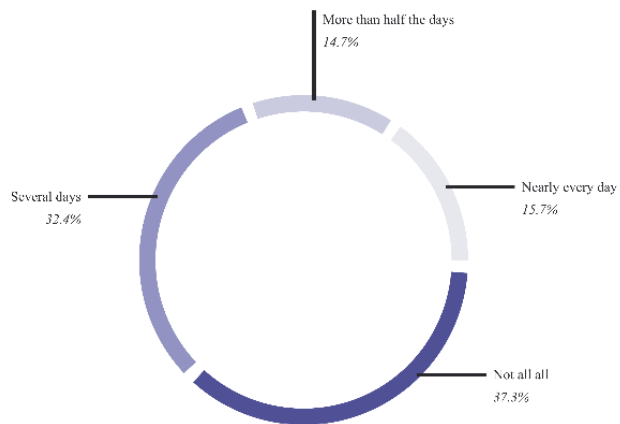
Fig. 4.5.15 Do they feel tired or have little energy?



*Fig. 4.5.16 Have they experienced poor appetite or overeating?*



*Fig. 4.5.17 Do they feel bad about themselves or that they are a failure or have let themselves or their family down?*



*Fig. 4.5.18 Do they have trouble concentrating on things, such as reading the newspaper?*



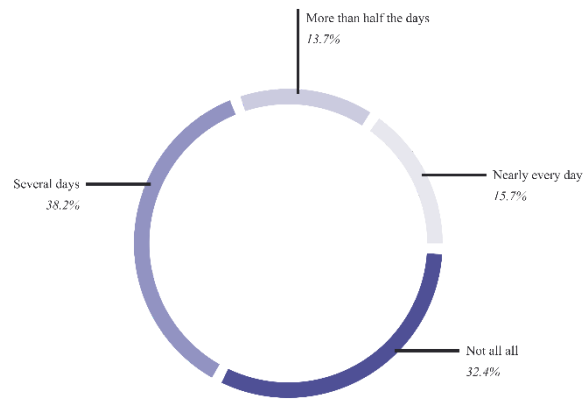


Fig. 4.5.19 Have they moved or spoken so slowly that other people could have noticed. Or the opposite, that is, they were being so fidgety or restless?

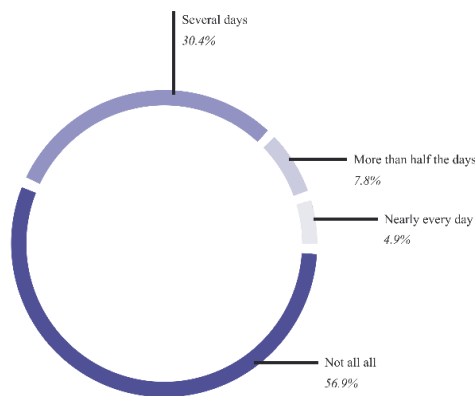


Fig. 4.5.20 Hev they had any thoughts that they would be better off dead?

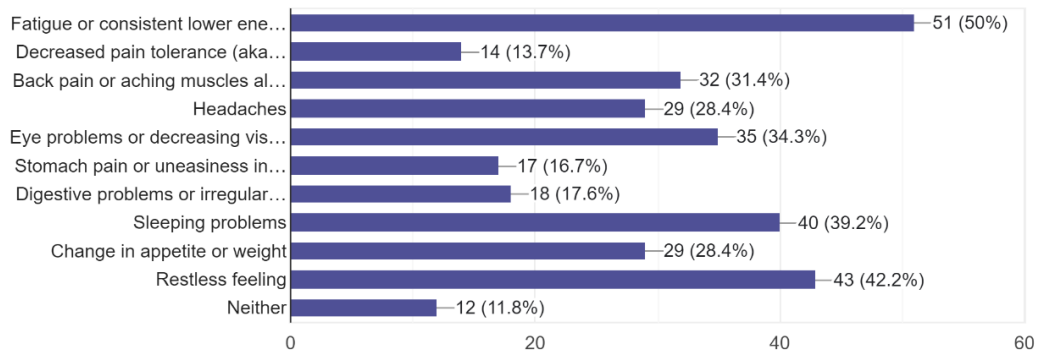


Fig. 4.5.21 Do you have any of the following body sensations?

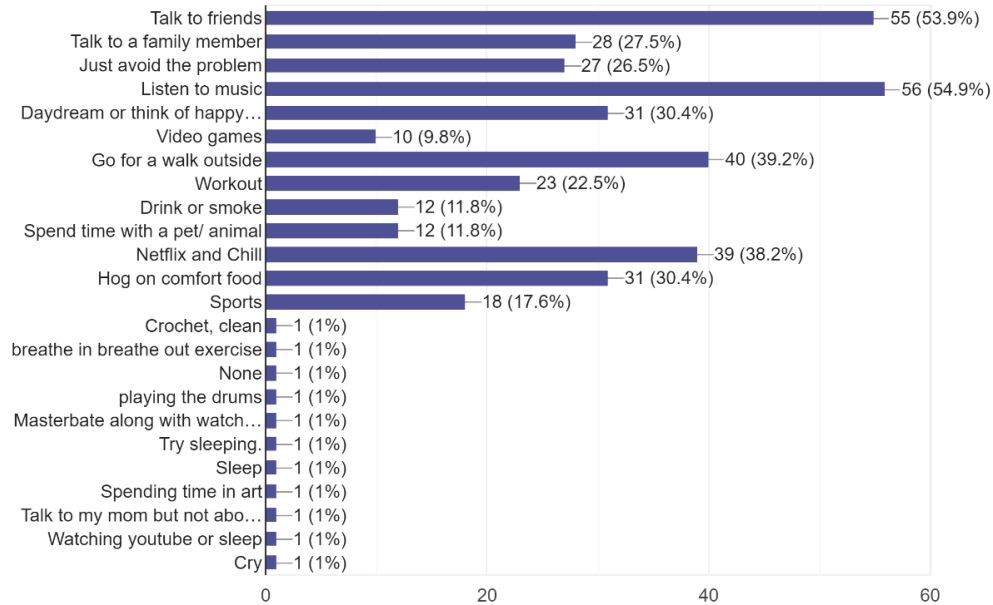


Fig. 4.5.22 What is your go-to solution when you feel low?

After the quantitative analysis, I was able to make a few conclusions that are as follows:

- The young adult age group is affected significantly more than adolescents and adults.
- The most affected age group is 16 – 24-year-olds. The most common disorders among these age groups are Depression, Anxiety, and Stress.
- These individuals have experienced emotional problems during and after the lockdown due to the covid-19 pandemic.
- They do agree with having some mental imbalance.
- There has been reduced physical activity.
- These individuals do try to get enough sleep. However, it seems that the quality of sleep is just average. Individuals experiencing some signs of depression also have difficulty falling asleep, staying asleep for a decent time, or sleeping too much, maybe more than 12 hours.
- The individuals experiencing some signs of depression have mentioned having low energy, poor appetite, and very less interest or have little to no pleasure in doing anything.

These findings led me to refine the IBY solution for the Indian audience. I selected the target audience at 18 years old since 16 is too young to make judgments about one's own mental health without an adult present. I then began interviewing people between the ages of 18 and 24. I further narrowed the age range to 18 to 22-year-olds since this age range is

similarly vast, and I created a customised solution for the customers. I went in that way because depression seemed to be the most prevalent problem among people of this age. I also sought professional advise regarding the age group I ought to concentrate on..

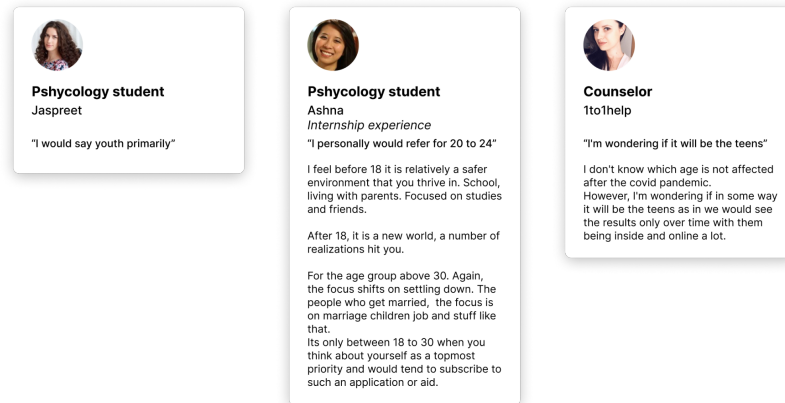


Table 4.5.23 A word of advice from professional on setting a target audience

#### 4.6 Understanding the target audience

In India, one in four youth-adults suffer from depression (India Today Conclave Mumbai, 2019, #). Numerous difficulties that young adults face initially pass for normal before steadily taking control of their life. The mental landscape of children includes difficulties that may seem "insignificant" to adults, such as bullying, problems with friends and family, and academic pressure. In the past five years, about 40,000 young adults have killed themselves in India. 8,492 young people committed suicide in 2018. One in seven (15 to 24 year olds) Indians reported feeling unhappy or lacking interest in activities on a regular basis, according to the poll results, which are published in The State of the World's Children 2021.

A few studies have looked at a variety of symptoms in young individuals, including depression, decreased interest in activities, attention issues, aggression and wrath, pessimism, decreased appetite, poor sleep, anhedonia, and physical symptoms.

	Risk Factors	Proportion of total DALYs attributable to each risk factor (95% uncertainty intervals)		
		Both genders	Males	Females
Depressive disorder				
	Bullying victimisation	3.3%	3.8%	3.0%
	Childhood sexual abuse	6.9%	5.0%	8.3%
	Intimate partner violence	4.6%	NA	8.0%

Table 4.6.1 Percentage of major factors to depressive mental disorders in India, 2017

Source: (India State-Level Disease Burden Initiative Mental Disorders Collaborators\*, 2019)

An individual's mental well-being can be affected by various risk factors from multiple aspects of life. For example, Education: Not performing well academically, Physical punishment at school, Self or parental dissatisfaction with academic achievement, change of schooling, Inability to cope with academics; Family-related: Relationship issues with parents, Parental fights, Stress in the family, Birth of a sibling, death of a family member, Alcohol use and smoking by father; Other: Not having a hobby, Peer pressure, Social isolation, Illness.

The physical transformations of puberty and constant body change are other factors that affect these individuals. Changing bodies can cause changes in peer groups, grown-ups' view of youth, and young people's impression of themselves. Puberty puts a focus on self-perception according to the viewpoint of the young individual. Individuals' psychological idea of their actual self's are related to their body image. It's the idea of one's own changing body, including how it feels, moves through space, appears in the mirror, and how one thinks it seems to others. Emotions, perceptions, bodily sensations, experiences, and moods can influence body image. Cultural messages and societal standards can also have a significant impact.

After researching, interviewing, and analysing potential users' behavior following are a few assumptions:

- 30% are not okay conversing with their parents about their own concerns.
- 45% of young girls end undesirable pregnancies without telling their parents.
- 21% of youthful grown-ups get undesirable requests for sexual demands from outsiders on the internet.
- 65% deal with continuing issues to which they see no solution.
- 47% play games on their mobile.
- 1 in 2 young adults goes ahead with kissing or first base.
- 1 in 5 young adults watches porn before the age of 13.
- 15% drink alcohol when they are bored.
- 1 out of 5 young adult smokes at a disturbing pace of 13 to 15 sticks per day.
- 3 in 5 youngsters focus on their physical appearance.

#### **4.6.1 Body image in young adults**

Physical changes may be the most obvious signs that a child is transitioning into a youngster. Youths' entire lives are impacted by the physical changes associated with puberty. Peer groups, how adults see teenagers, and how teenagers feel themselves may alter due to changing bodies. From the standpoint of the teen, puberty shines a spotlight on body image. Body image is how individuals see

their physical appearance in their minds. It is the idea of one's own shifting body, including how it travels through space, feels, appears in the mirror, and is seen by others—emotions, perceptions, bodily sensations, experiences, and moods all impact how we perceive our bodies. Messages from culture and societal norms can also have a significant impact.

A young girl's ability to cope with stress often depends on the particulars of her environment or culture. Regarding ideals of body form, shape, and size, there may also be cultural variances. However, early-developing boys also frequently experience stress and anxiety related to bodily changes during puberty. Height, broadness, strength, speed, and muscularity are characteristics boys may develop during puberty that society values highly. Teenagers worry about how they look and behave at all times. One constant of youth is the sense that they are put "on stage" and that everyone's attention is focused on their behavior and looks. Youth is driven by changing brain chemistry to spend excessive time contemplating and examining themselves, which is where this preoccupation comes from.

#### **4.6.2 Social media and its impact**

In academia, the subject of youth and media has grown in importance. Various studies have analyzed what media usage affects the way of behaving, ADHD, and weight. An individual's mental and physical health may suffer from using social media excessively. Following are a few significant impacts of social media on youth's mental health:

**Depression or stress:** The exuberant state of stress or depression is defined by the atrophy or disappearance of pleasurable emotions and sentiments. A depressive condition entails two extreme emotions, where vivacious is down and negative is up, along with various psychological symptoms like anguish and depressive moods, distress, and an impact on one's physical and mental health growth. As a result, teenagers utilize social media and have become dependent on it. As a result, adolescents exhibit numerous behavioral changes. They do feel lonely; they become easily angered, depressed, etc.

**Anxiety and Insomnia:** Social media is a widely used technology, making information about anything accessible anytime. Youngsters spend most of their time on social media, exchanging private information. Hackers abuse their personal data for illegal or illicit activities because they are unaware of the privacy policy. Fear of

missing out is another serious risk factor for anxiety. Poor sleep quality and insomnia may result from FOMO.

**Binge-purge syndrome and Low Vision:** Irritable bowel syndrome and binge-purge syndrome are brought on by unhealthy disturbances in eating habits. Youth are more likely to exhibit the above disorders since they frequently skip meals. Early exposure to technology and media use can harm their eyesight.

**Obesity and other Diseases:** Gaining weight is caused by overeating unhealthy food, living a sedentary lifestyle, and not getting enough regular exercise. Diabetes, osteoarthritis, asthma, high blood pressure, and others are all associated with obesity. Young people with obesity may have low self-esteem, which affects their emotions and social lives.

Social media entertainment, especially Instagram, has been overwhelmed with emotional well-being connected content during the previous year. Notwithstanding prepared psychological well-being experts, numerous self-depicted care specialists, unlicensed analysts, persuasive orator, and emotional well-being influencers have arisen, offering exhortation or "convenient solutions" to manage the different stresses people have been encountering since the pandemic. Psychotherapists think this has prompted peer tension on youthful grown-ups to feel good, eager with the treatment cycle, and self-diagnosis in light of relating to a portion of the side effects of emotional well-being sicknesses, and different issues.

#### **4.6.3 Social stigma in India**

Mental-health-related public stigma has a more significant detrimental influence on young individuals seeking help than adults. Youngsters with emotional wellness issues are bound to feel socially detached from everybody. What's more, contrasted with grown-ups, young people are less likely to seek treatment for mental health issues due to typical concerns about lack of confidentiality, peer pressure, a desire to be independent, and a lack of information about mental health-related services or services. Unsurprisingly, compared to young adults, teenagers in a study found it more challenging to reveal their mental health issues. This one societal rule from decades back in India about what people will think is still relevant today. Gender, caste, religion, socioeconomic class, and geographic region are irrelevant. It holds sway over people's decisions because they would draw criticism, rumors, and turmoil if their vulnerabilities were

known. Additionally, it discourages urgent psychological care. As per a 2011 World Health Organization review, 36% of Indians encountered a Major Depressive Episode (MDE) sooner or later in their lives. Along these lines, most people who experience despondency sooner or later in their lives are tracked down in India. The drive to fit in and appear "normal" in society emerges as harmful stigma and pressure against seeking help.

#### **4.7 Target audience needs and wants**

To cater to a young age group can be a challenge, especially when this age group is so versatile. After doing a baseline psychological study, interviewing potential users, and observing people around me, I reached a few conclusions as follows:

- Mental health applications are not as popular as Instagram, where you can share and show off your personal life. There is hardly any chance to satisfy their ego and boost their self-esteem.
- Youthful grown-ups frequently make for themselves an online persona that is not quite the same as their offline persona. Consider every one of the channels utilized in virtual entertainment, applications to smooth skin and look skinnier, online make-up choices, and so forth.
- Values genuineness, and individuals who show themselves all the more legitimately will generally have considerably more impact. People search for the harmony between looking cool and special and being real and genuine.
- Unlike platforms like Facebook and Instagram, not enough marketing has been done on this platform.
- Teenagers are mostly uninterested in change and learning something new. When it comes to adopting a good habit, we mostly run away from doing that. The difference is both tedious and scary.
- Some young adults perceive that you must be mentally ill or crazy to refer to a mental wellbeing app or professional help. Only crazy people do that. They tend to ignore what they feel and move on with their lives. They hate the feeling of vulnerability.
- As most of the teenagers out there are students, some do not have enough time to spend on self-care and self-love. They are highly busy with their hectic studying schedule and pursuing other interests. They tend to think that it would consume a lot of their time, which might disturb their schedule. Also, the students have constant pressure from family to only focus on studies and being the best.

- Since the IBY solution would also be an online solution, the perception is that all the internet platforms are a sort of distraction.
- Reading blogs is of no use, especially on mental health apps. Mostly, teenagers are not interested in reading, and they tend to hate to adopt this habit. At this age, reading is their biggest enemy, and they get offended by people advising them to read.
- Since most mental health apps are English platforms (though other languages might also be used here), they don't understand certain English content. The English language is not an Indian language. *We should incorporate teenage slang rather than polished English.*
- Some young adults are aware of the mental health platforms, but they tend to confuse this platform with any other app on the play store where people just do some breathing to feel better. So, they think it is better to rely on friends, boyfriends/girlfriends, and, if possible, family.
- Some young adults do visit such apps. But they give up due to a lack of motivation. They are hardly left with any encouragement or reason to continue. They must be secretive about it, and if someone finds out about it, they are questioned or bullied.
- After spending almost 3/4th of the day with academics, young adults are looking for entertainment, not just another productivity tool.

#### **4.8 Existing mental health solutions**

As mental health care became a global concern, digital technology showed substantial potential in developing newer, more innovative service delivery models (Patel & Saxena, 2013, #). Numerous websites, blogs, videos, e-resources, and mobile applications provide free guidance, treatment, self-help tools, and resources for dealing with various types of distress. The internet has become a go-to resource for individuals because it provides widespread access to information and the benefits of immediacy, information customization, and anonymity. Numerous psychological well-being applications and innovation-based arrangements are playing significantly in changing the face of psychological well-being care. People every now and again utilize the web to get data, participate in self-improvement exercises, and at times look for proficient assistance for psychological well-being challenges (Baker & Ray, 2011, #).



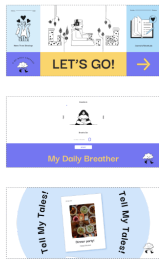
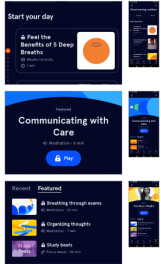
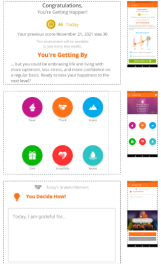
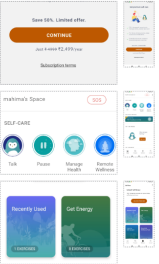
	IBY	Headspace	Happify	Wysa
Screenshots				
<b>Company</b>				
About	IBY is an AI analytics that helps detect and track your emotions. It provides various solutions for depression, from grounding techniques to fun self-esteem exercises.	Headspace is a mindfulness app with an easy-to-use interface that takes the seriousness and intimidation out of meditation.	Happify offers a range of activities based upon assessment questions identifying areas in a person's life needing support. Exercises based upon health and well-being, relationships, family and kids, mindfulness, medication, work and money, and personal growth.	Wysa is a user-friendly, AI chatbot-guided cognitive behavioral therapy (CBT) app that teaches CBT techniques, and offers meditation, yoga, and guided journaling activities.
Focus	Depression   Self-esteem   Positivity	Meditation	Self-care	Overall self-care
Pricing /month	----	14 days free trial 1499 rupees/year	9500 rupees/year 1000 rupees/month	2499 rupees/year (offer) 4999 rupees/year
Strengths	<ul style="list-style-type: none"> <li>An accurate AI that can calculate your emotions</li> <li>Fun and interactive user experience.</li> <li>Provides wide range of exercises depending on your symptoms of depression.</li> </ul>	<ul style="list-style-type: none"> <li>You can track your progress through the stats feature.</li> <li>You can include others in your journey through the buddies feature.</li> <li>The workout classes are taught by Olympians.</li> </ul>	<ul style="list-style-type: none"> <li>Assessment questions individually pinpoint specific activities</li> <li>60+ tracks provide evidence-based exercises developed by experts in the field</li> <li>Accessibility features for those who are blind or visually impaired</li> </ul>	<ul style="list-style-type: none"> <li>All of the CBT exercises are easy to complete and take no longer than 10 minutes</li> <li>The "Self-Care" library features a wide range of learning modules on topics from pregnancy and grief to stress and anger</li> <li>You remain anonymous as you use the app and there is no need to create an account with your personal information</li> </ul>
Weaknesses	<ul style="list-style-type: none"> <li>Users might not be authentic while the AI analyses their facial cues.</li> <li>Might take time to explore how the website works.</li> <li>Only caters to individuals with depression.</li> </ul>	<ul style="list-style-type: none"> <li>The monthly subscription is higher than other meditation apps.</li> <li>Some users report finding the app repetitive at times.</li> <li>The free trial requires entering a credit card and committing to an auto-renewal subscription.</li> </ul>	<ul style="list-style-type: none"> <li>Paid version is \$14.95 a month, about the cost of a co-pay of medication</li> <li>Only the paid version offers insights into progress and unlimited access to tracks</li> <li>No clear indication of what happens if someone discusses self-harm in the Happify community.</li> </ul>	<ul style="list-style-type: none"> <li>While the app claims to offer therapy, it is actually mental health coaching from either US-based coaches or with a licensed therapist in India, and is only available via text messaging.</li> <li>There is select free content but most of the app is locked behind a paywall.</li> <li>All of the CBT activities and exercises are done with the guidance of the AI chatbot, which can be frustrating for some.</li> </ul>

Table 4.8.1 A competitive analysis with three highest-rated mental health apps

I also did a small survey to understand the target audience's knowledge of the existing mental health app. The awareness regarding using these apps is deficient. Only a few people turn to these solutions. One of the potential users mentioned, "They need to be fun. I feel like I am a patient when I look at these apps".

This helped me get to the conclusion of creating a fun and interactive user experience for the users. The website need not be a typical mental health website but be colorful and playful. Based on these findings I created a brand identity for the IBY mental health solution and designed solutions for users.

#### 4.9 Sorting activities and solutions

Several activities, exercises, cognitive therapy solutions/worksheets, and grounding techniques exist. How do we find the solutions for our users?

I initially started making a list of all solutions to help individuals with depression. Then I sorted the solutions into Activities, Worksheets and CBT, Breathing/Grounding, Basic exercise/Yoga, and Edificate (encouraging and educating users). Once I had categorized my list of solutions, I made week-by-week designs relying upon the degree of depression

that is Minimal, Mild, Moderate, Moderately extreme, and Severe Depression.

The figure displays six vertical panels, each representing a different category of solutions. Each panel contains a list of items, with each item followed by a numerical value. The categories are:
 

- ACTIVITIES:** Lists various activities such as 'WALKING', 'GARDENING', 'DANCING', etc., with values ranging from 100 to 1000.
- WORKSHEETS:** Lists various worksheets like 'WORKSHEET 1', 'WORKSHEET 2', etc., with values ranging from 100 to 1000.
- CBT:** Lists various CBT exercises and techniques, with values ranging from 100 to 1000.
- BREATHING:** Lists various breathing exercises, with values ranging from 100 to 1000.
- EXERCISES:** Lists various physical exercises, with values ranging from 100 to 1000.
- EDIFICATE:** Lists various edificate activities, with values ranging from 100 to 1000.

Fig 4.9.1 List of all solutions categorized in activities, worksheets, CBT, breathing/grounding, exercises and edificate.

MINIMAL DEPRESSION	MILD DEPRESSION	MODERATE DEPRESSION	MODERATE SEVERE DEPRESSION	SEVERE DEPRESSION
<p><b>WHAT CAN BE PREVENTED?</b></p> <p>Stress and depression are closely related. It is important to take steps to reduce stress and prevent depression. This can be done by:</p> <ul style="list-style-type: none"> <li>Identifying and reducing stressors</li> <li>Developing coping strategies</li> <li>Seeking support from family and friends</li> <li>Engaging in regular physical activity</li> <li>Maintaining a healthy diet</li> <li>Getting enough sleep</li> <li>Limiting alcohol and drug use</li> </ul>	<p><b>WHAT CAN BE PREVENTED?</b></p> <p>Stress and depression are closely related. It is important to take steps to reduce stress and prevent depression. This can be done by:</p> <ul style="list-style-type: none"> <li>Identifying and reducing stressors</li> <li>Developing coping strategies</li> <li>Seeking support from family and friends</li> <li>Engaging in regular physical activity</li> <li>Maintaining a healthy diet</li> <li>Getting enough sleep</li> <li>Limiting alcohol and drug use</li> </ul>	<p><b>WHAT CAN BE PREVENTED?</b></p> <p>Stress and depression are closely related. It is important to take steps to reduce stress and prevent depression. This can be done by:</p> <ul style="list-style-type: none"> <li>Identifying and reducing stressors</li> <li>Developing coping strategies</li> <li>Seeking support from family and friends</li> <li>Engaging in regular physical activity</li> <li>Maintaining a healthy diet</li> <li>Getting enough sleep</li> <li>Limiting alcohol and drug use</li> </ul>	<p><b>WHAT CAN BE PREVENTED?</b></p> <p>Stress and depression are closely related. It is important to take steps to reduce stress and prevent depression. This can be done by:</p> <ul style="list-style-type: none"> <li>Identifying and reducing stressors</li> <li>Developing coping strategies</li> <li>Seeking support from family and friends</li> <li>Engaging in regular physical activity</li> <li>Maintaining a healthy diet</li> <li>Getting enough sleep</li> <li>Limiting alcohol and drug use</li> </ul>	<p><b>WHAT CAN BE PREVENTED?</b></p> <p>Stress and depression are closely related. It is important to take steps to reduce stress and prevent depression. This can be done by:</p> <ul style="list-style-type: none"> <li>Identifying and reducing stressors</li> <li>Developing coping strategies</li> <li>Seeking support from family and friends</li> <li>Engaging in regular physical activity</li> <li>Maintaining a healthy diet</li> <li>Getting enough sleep</li> <li>Limiting alcohol and drug use</li> </ul>
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Fig 4.9.2 List of all solutions with explanation sorted according to depression levels.

**Minimal depression:** Users with minimal/no depression might only need some self-care activities to create a healthy routine. We can encourage them to join the community (Doujins) section.



Fig 4.9.3 Weekly activities planned out for users with minimal depression

**Mild depression:** Users with mild depression can be turned into Minimal/No depression. They need Watchful waiting and can be given a guided self-care activity course. Apart from activities - Exercises can also help lift their mood. These user groups can be suggested to join Doujins to receive support and be a part of society to bring them out of isolation. Extra: adhering to a sleep schedule and eating a balanced diet rich in fruits and vegetables. After 2 weeks, monitor again for any signs of depression.



Fig 4.9.4 Weekly activities planned out for users with mild depression

**Moderate depression:** Users with moderate depression need attention. Professional help should be recommended to this user group. Moderate depression has been proven to get better with Talk Therapy, which can provide CBT worksheets. Teaching mindfulness and some activities to get a break from CBT (since CBT are heavy exercises); recommend and encourage to join Doujins are a few other solutions that can help this user group.

Exercises like walking in nature should be encouraged with some basic stretches because it helps increase dopamine levels. Grounding techniques can benefit users to help recentre their minds as well.

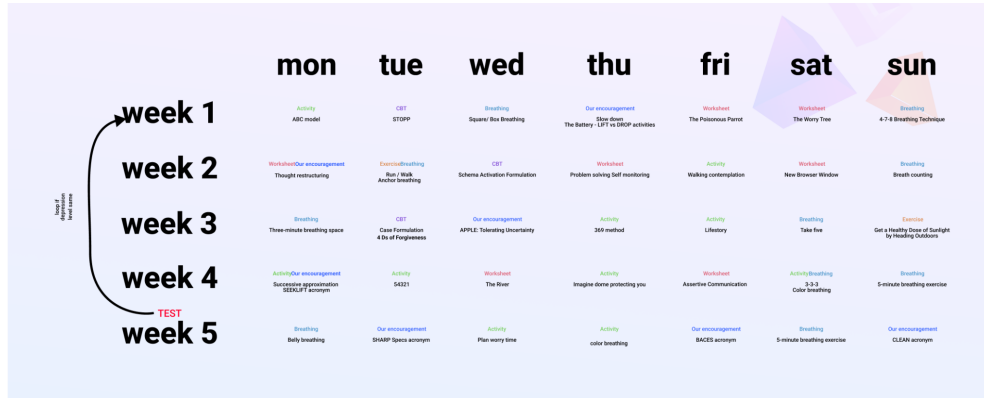


Fig 4.9.5 Weekly activities planned out for users with moderate depression

**Moderately severe depression:** Users with moderately severe depression need to be recommended for professional help. The professional recommends Antidepressants and Talk therapy (CBT). Checking depression levels after 60 days is necessary. Meanwhile, we can provide CBT and worksheets to motivate them to work towards themselves. User groups should be encouraged for Nature therapy. Provide one Metaphoric exercise weekly to work on with some activities to lighten up their mood. Encourage active participation in Doujins. Regular grounding activities with practices like yoga poses and walking should be recommended. Provide chronotype solutions to help with an optimal schedule and help find motivation for productivity.



Fig 4.9.6 Weekly activities planned out for users with moderately severe depression

**Severe depression:** Users with severe depression have to be directed toward professional help. If a user finds it impossible to get professional service, we can provide solutions from the moderately severe depression section.

## 5. User interface design

### 5.1 Functionality requirements

Following are a few major requirements from the company:

- IBY AI analysis report
- Few mental health exercises

### 5.2 Design for the Indian market solution

#### 5.2.1 Information Architecture

The company requirements for the website were: IBY AI analytics report and a few exercises based on their report. However, depression cannot be guided and supported with just a few activities. As per my research, a person with depression has problems socializing, having a good sleep, and eating healthy, does not know how to create a healthy routine and stick to it, and they usually tend to focus on the negatives in every aspect of their lives. Based on my research and interviews, I proposed that we include more exercises for each level of depression detected by our AI, a community section, a sleep & nutrition guide, and a routine planner. Also, the IBY AI detects six emotions, happy, sad, neutral, surprise, fear, and anger. A person's emotional range is way beyond just six emotions. I intend to propose a wider range of emotions for our users to understand and explore more feelings. My supervisors at IBY agreed to my ideas. However, for phase- 1 design, I have been asked to work on the following sections:

**Mood Compass:** An IBY AI analytics report section. Since a report section sounds technical, I renamed it Mood compass, which explains that your emotions are being detected and you are guided throughout. This section will consist of all the facial and vocal score graphs.

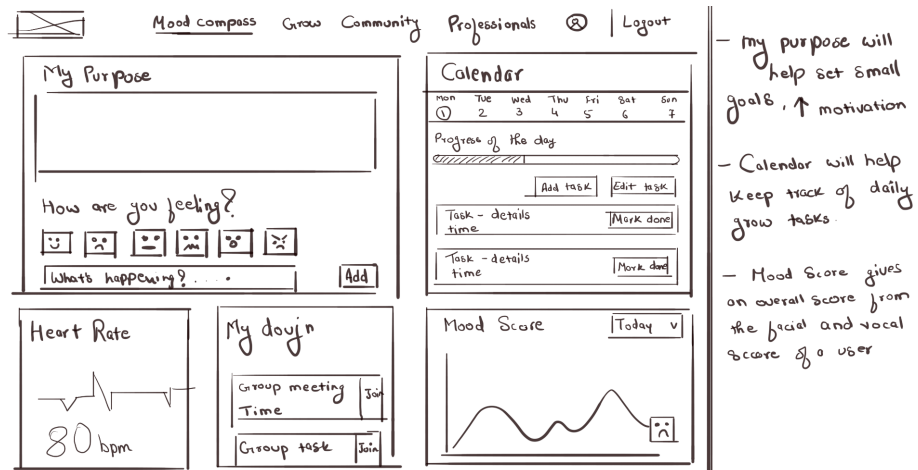


Fig 5.2.1.1 Concept sketch of wireframe for Mood compass

**Grow:** A list of exercises will be presented in this section. I named the section to grow because it gives a clear idea to a user that it will help them grow and develop themselves. I thought of representing the exercises in a jar. A weekly jar of practices will be given to the user, who can do one exercise or activity each day. This will fall out of a typical list of exercises given to a user and be more interactive.

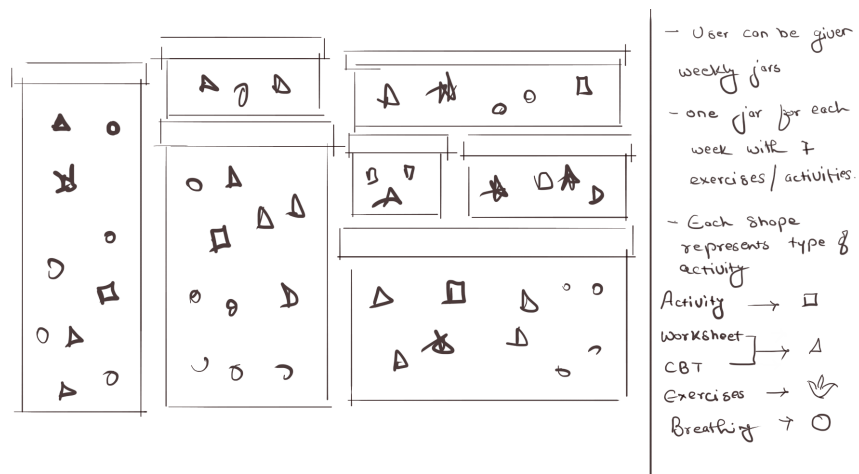
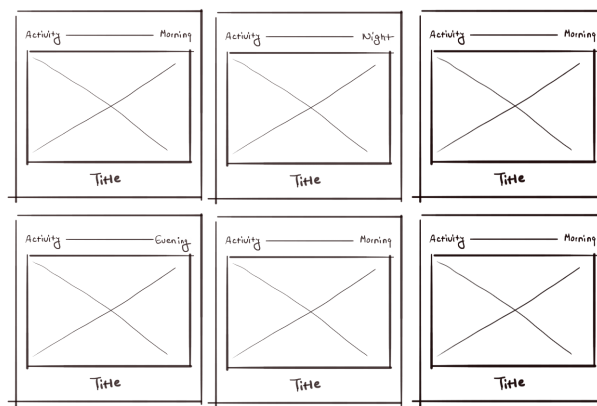


Fig 5.2.1.2 Concept sketch of wireframe for Grow

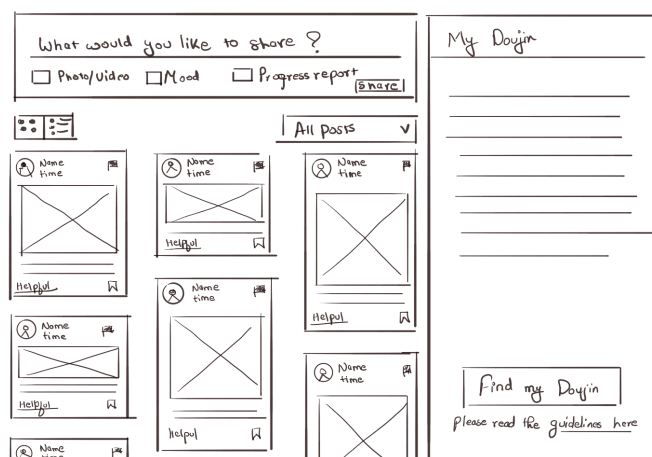


- Weekly Activity cards
- gives basic info with visuals
- Users can see all the 7 days tasks

Fig 5.2.1.3 Concept sketch of wireframe for Grow - activities

For the phase - 2 design, I will adding the following sections:

**Community:** Community gives an individual a sense of belonging, especially for a person with depression; being a part of a community is essential because they find it difficult to socialize. People with depression find it difficult to open up, so will being a part of a community with more than 100 people help? I believe if we divide the community into small sections and create an online group therapy. It will allow users to feel like they are a part of a small society and connect with each other on a personal level. These small groups will be called Doujins ( a Japanese word meaning “a group with the same interests.”). Here users will be put together based on their liking, hobbies, emotional parameters, and depression levels. To ensure the security and safety of each individual, our AI will be a part of each Doujin group and will keep a check.



- a Common Community Section where all user posts are visible — can be filtered
  - all posts
  - my posts
  - marked helpful posts
  - bookmarked posts
- users can flag a post as well which will be reported and checked by our AI.
- A side panel shows the doujin section. A user can choose to join and can check the guidelines before doing so.

Fig 5.2.1.4 Concept sketch of wireframe for Community



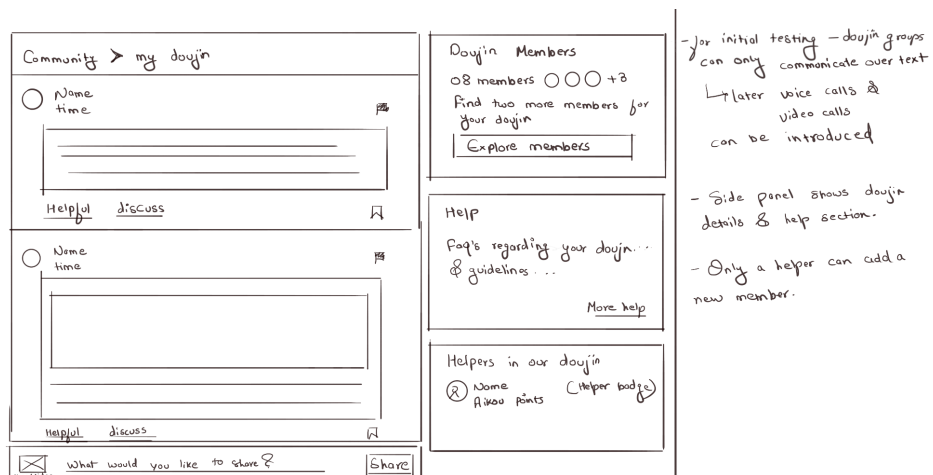


Fig 5.2.1.5 Concept sketch of wireframe for Doujin

The users who come to the community section are divided into members and helpers. Each has its powers in the community and doujin. The following figure explains the same:

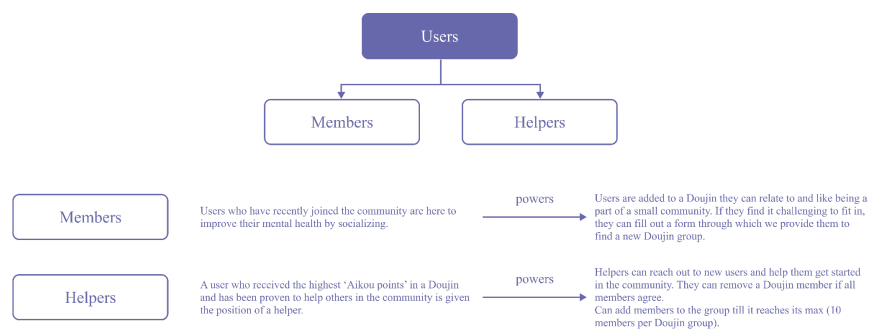


Fig 5.2.1.6 Users divided into categories in the community section

**Reward system:** A rewards system can help keep the users motivated. I thought of adding this feature because it would be a driving force for the users. Although it has no effect on the betterment of depressive symptoms, it allows users to keep coming back to the application. I thought of introducing three types of rewards, the first would be Aikou points, the second would be Incentives, and the third would be users being able to download the illustrations from the website. Aikou ( a Japanese word meaning “love/adoration) points can be used to turn into a helper. The more the number of Aikou points the user earns, the more helper levels they reach. These points can also unlock a few fun activities from the grow section. For the Incentives, we will be collaborating with third parties. The user will receive various scratch cards and discounts from these. Finally, letting users

download illustrations as a reward will be helpful because while getting user feedback on my illustrations, users mentioned liking the style and grew attached to a few illustrations. So, letting users download them as a reward would be a good idea.

**Slumber:** Sleep disturbances are one of the signs that can indicate depression in individuals. The individual may be suffering from insomnia or hypersomnia. Young adults require the same amount of sleep as children, if not more— six to nine hours is optimal. Most youths are chronically sleep-deprived, sleeping only four to six hours each night on average. Too little sleep can lead to uncontrollable napping (in class or, more dangerously, while driving), irritation, difficulty in doing non-exciting or competitive work, and a reliance on caffeine drinks to keep awake. Age, activity level, and sleeping environment influence sleeping patterns, habits, and characteristics. Individual alertness and activity levels throughout the day are determined by "chronotypes," which are specific circadian rhythms. We can introduce the 4 types of chronotypes to our users and help them determine under which chronotype they fall. This will help them find the optimal type for their sleep and fix their routine. There are various solutions to help you get good quality sleep, such as doing a few yoga poses, relaxing activities, a few grounding techniques, etc. These solutions can be provided depending on the chronotype a user falls under.

**Victual/Nutrition:** The type of food we consume has a significant effect on our mood. Eating healthy just does not help physical health but also mental health. Typically, food apps give users a list of food with calories or meals they can eat or cook. However, the user often might lack the ingredients for the meal shared with them. In our nutrition section, we can introduce an interactive plate. We give users a meter of calories, proteins, and vitamins they should consume based on their BMI rate. Users can start picking food elements like rice, daal, chapati, burger, pizza, and so on from the food section on the plate. Vitamin and protein levels are calculated for the day based on what they add to the plate. If the user goes over the limit, we can encouragingly notify them to not binge eat and try to be healthy. This way, the user picks what they want to eat and has their health in check.

## 5.2.2 Branding

After setting the target audience, 18-22-year-old young adults, I dived into understanding their visual aesthetics. We needed to know what our users like and adore to attract them visually to our solution.

What do young adults find cool? I researched and studied the brands these users like and are loyal to. As per research, out of the 100 brands recognized, 29 of the brands that these clients are faithful to are connected with internet business and online entertainment. It connotes that the online business and virtual entertainment organizations have major areas of strength in the personalities of these youthful grown-ups. Keeping that in mind, I designed the visual language for the product. Following are a few concept sketches for the logo design:

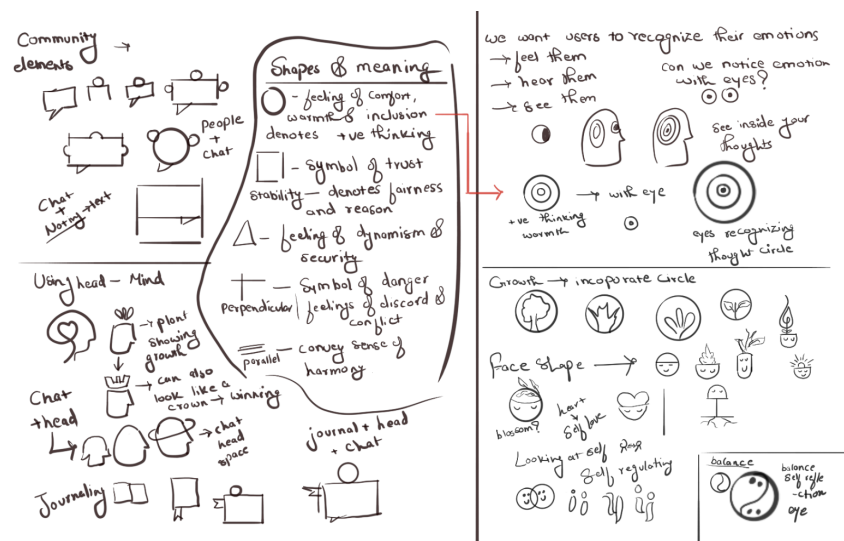


Fig 5.2.2.1 Merapy: Mental health solution logo design concept

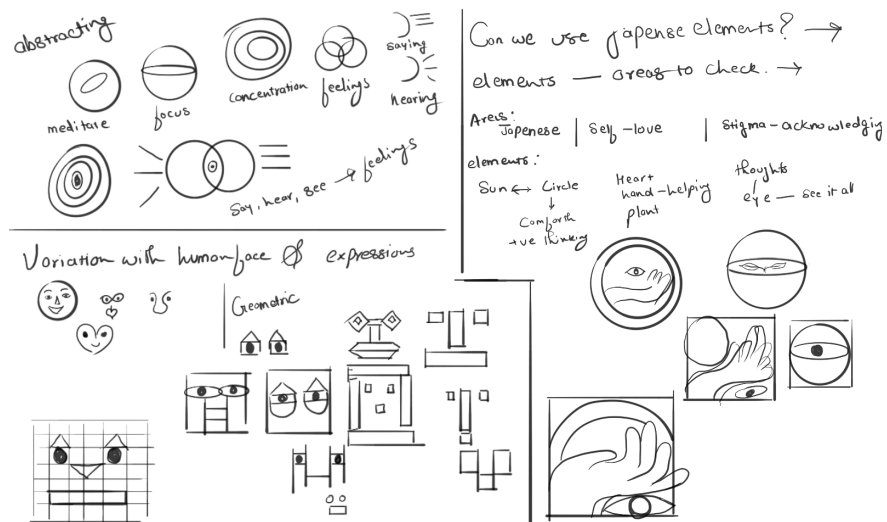


Fig 5.2.2.2 Merapy: Mental health solution logo design concept



*Fig 5.2.2.3 Merapy: Mental health solution logo design concept*

After sharing the concept sketches with my supervisors, I was asked to vectorize the last concept sketch. They liked the idea of stairs and incorporating the element sun. I went ahead and vectorized the sketch. Instead of leaving the circle ideal, I converted it into a smiley.

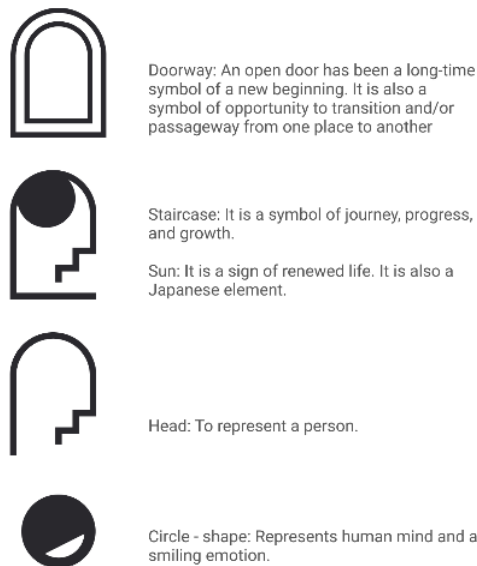


*Fig 5.2.2.4 Merapy: Mental health solution logo design*



*Fig 5.2.2.5 Merapy: Mental health solution logo design*

The name Merapy is a combination of three words, Me, Merry, and Therapy. The logo is designed meaningfully and proportionately. Each element has a meaning behind it.



*Fig 5.2.2.6 Elements used in the Merapy logo*

I studied basic geometric shapes and incorporated them in the logo to create a meaning of Growth, easy and fun happy growth. I used the color “Very Peri” to symbolize Courageous, Empowering, Joyous, Imaginative, Whimsically Aesthetic, and Futuristic design.

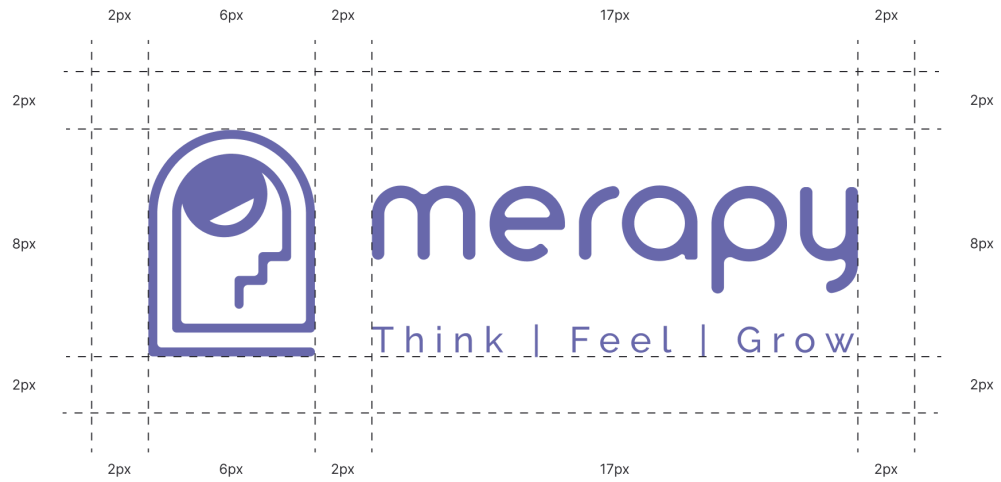


Fig 5.2.2.7 Proportions for the Merapy logo



Fig 5.2.2.8 The color palette

The target audience is mainly attracted to pop aesthetically pleasing colors, so I selected fresh, easy on the eye color.



## Darker Grotesque

### CHARACTERS

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

( 0 1 2 3 4 5 6 7 8 9 ! @ # \$ % ^ & \* )

### VARIANTS

**Peter Piper picked a peck of pickled peppers**

**Peter Piper picked a peck of pickled peppers**

Peter Piper picked a peck of pickled peppers

Peter Piper picked a peck of pickled peppers

Peter Piper picked a peck of pickled peppers

*Fig 5.2.2.9 Typography*

Young adults are looking for fonts different from Times New Roman and Comic sans. These typefaces are the most used, and the target audience is looking for something new. They want the font to be clean and readable. I picked out the font style based on the brands the users are most loyal to.



*Fig 5.2.2.10 Brand references to pick typography*



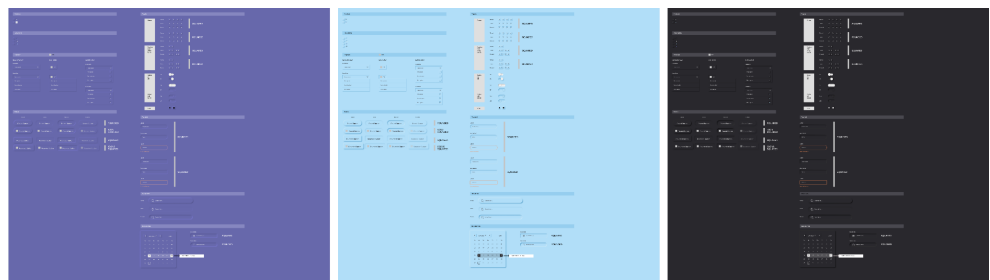


*Fig 5.2.2.11 The illustration style for the product*

I thought using a low poly illustration style would work well to bring more interactive grounds to the website. The user can move around in the space and interact with elements giving them a gamification version of a mental health solution.

### **5.2.3 Visual language**

To bring in diversity in the UI style, I thought using a different style would work well. For example, rather than using a material style maybe we could use a Neumorphic UI style. The Neumorphic UI style is very aesthetic and easy on the eye as well.



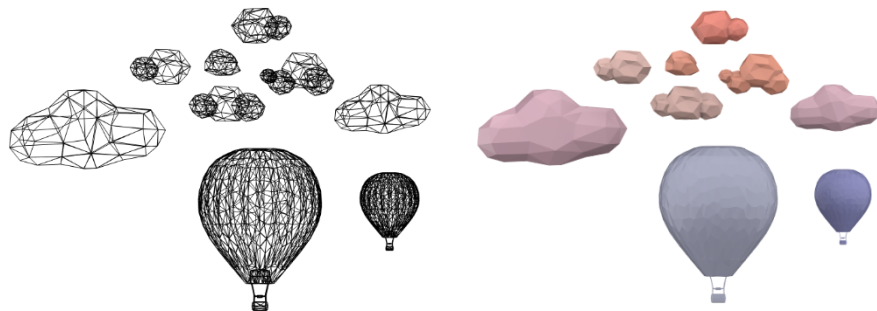
*Fig 5.2.3.1 Designing Neumorphic UI kit for different backgrounds*



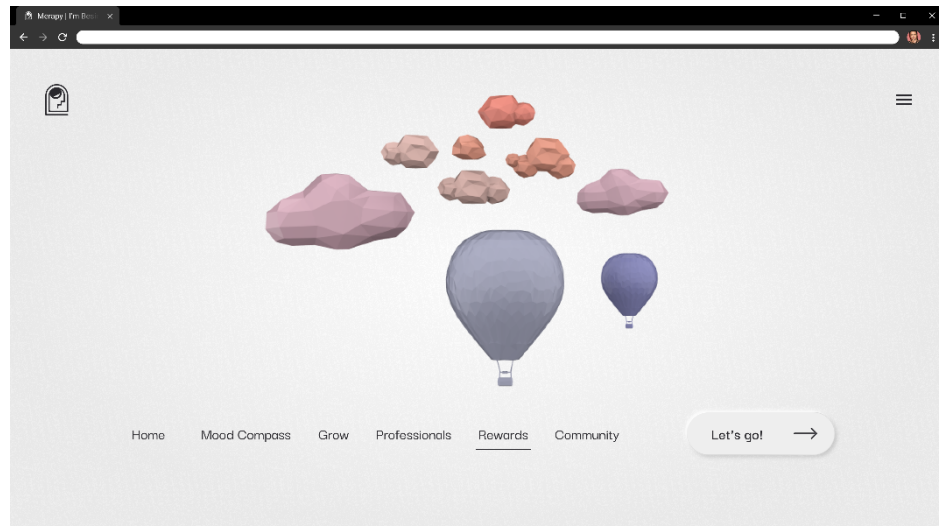


*Fig 5.2.3.2 Designing Neumorphic UI kit for white background*

I then designed a 3D model, a basic low poly model in order to create a UI frame that could be user-tested.



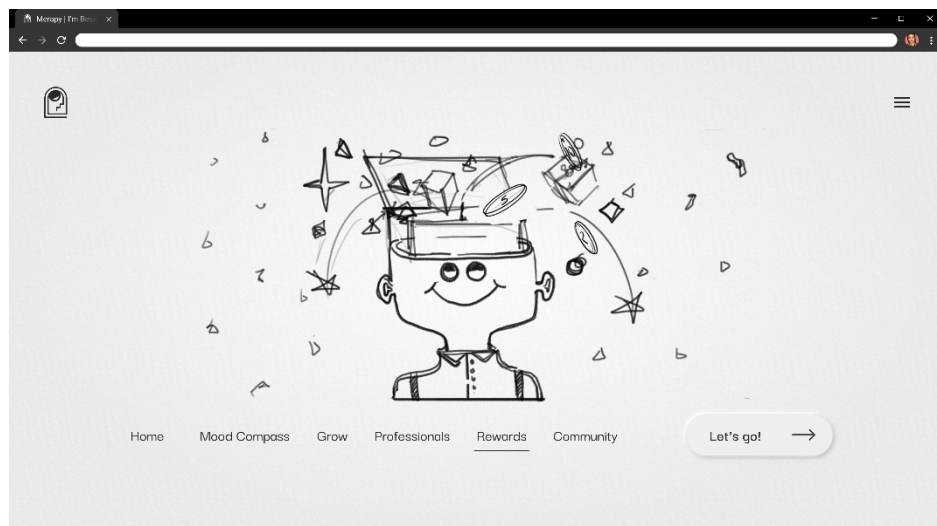
*Fig 5.2.3.3 Wireframe and texture low poly 3D model*



*Fig 5.2.3.4 Framing Neumorphic UI style with low poly 3D model*

The user response to this style was somewhat dissatisfied. Users felt the UI looked too plain and having a lot of 3D elements made them feel overwhelmed. I also took a professional's opinion and was told that keeping the style simple would work much better with the user group.

I took the following approach for the illustration style: simple hand-drawn lines to give an organic and authentic visual. However, the hand-drawn style did not work well with the Neumorphic UI style.



*Fig 5.2.3.5 Framing Neumorphic UI style with hand-drawn sketches*

After checking in with the users, I got positive feedback on the sketches. However, the Neumorphic style did not sit right with them. I mixed retro UI style with material UI style to balance the UI with hand-drawn illustrations.

## 5.2.4 Illustration explorations

I sketched out various concept ideas for illustrations to connect with my user group. As per my research, the users liked the authentic, simple, and easy-on-the-eye illustration style. Following are a few concept sketches:

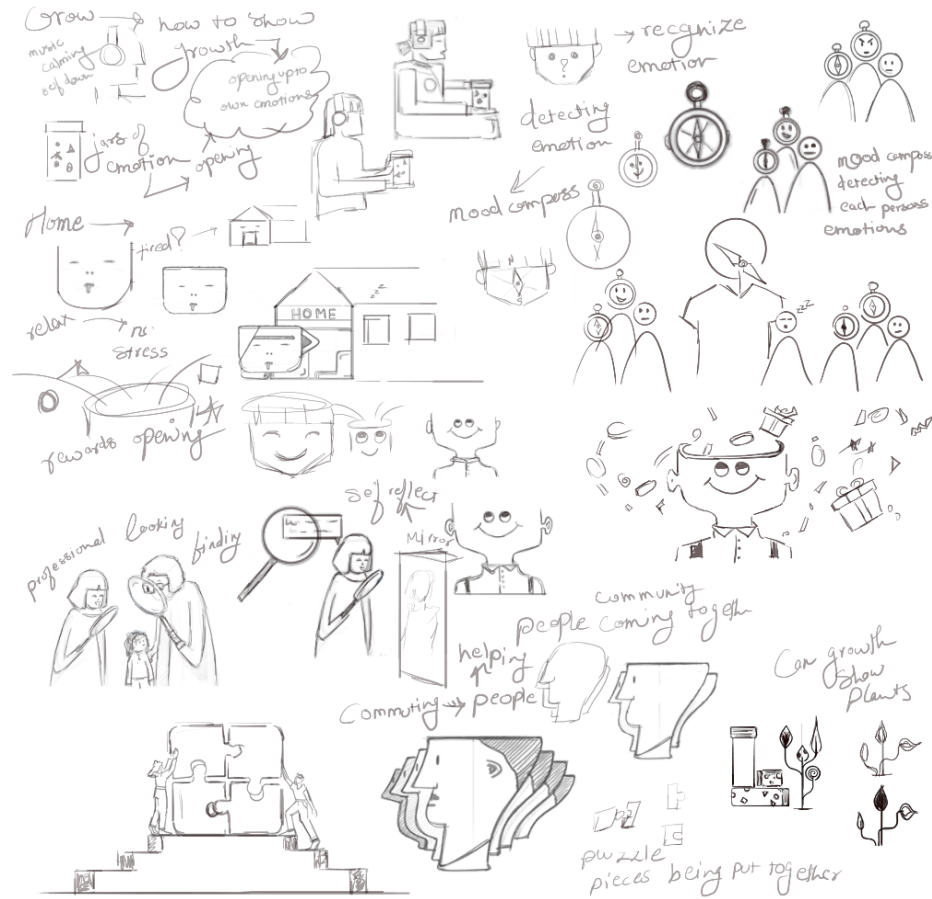


Fig 5.2.4.1 Conceptualizing illustration ideas

I shared my concept sketches with my company supervisors and a few potential users. Both approved and liked the idea behind the sketches and the style. I then went to clean my drawings.



Fig 5.2.4.2 Concept sketch for Mood Compass

The idea behind the sketch is to help users understand the function of the Mood compass section. The mood compass helps users detect and analyze their emotions, and I have tried to represent that in the sketch with a compass. The compass denoting the IBY AI analytics helps them figure out their emotions.



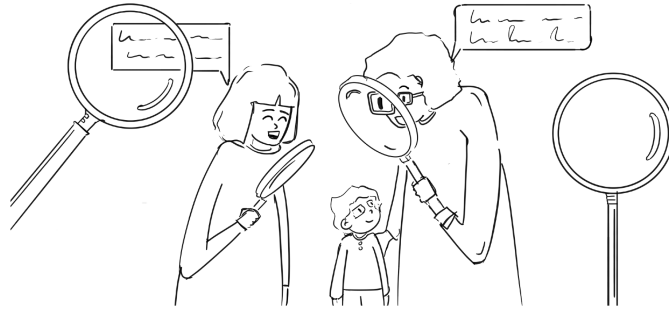
*Fig 5.2.4.3 Concept sketch for Grow*

The grow sections mainly focused on self-care and self-therapy. It teaches the user to accept their emotions and open up to them, be it pleasant or unpleasant emotions. Here I have denoted the emotions as a jar, a jar full of emotions, where a person opens the jar and accepts their emotions, which will lead and help them grow. I also tried to represent growth with a few plant elements.



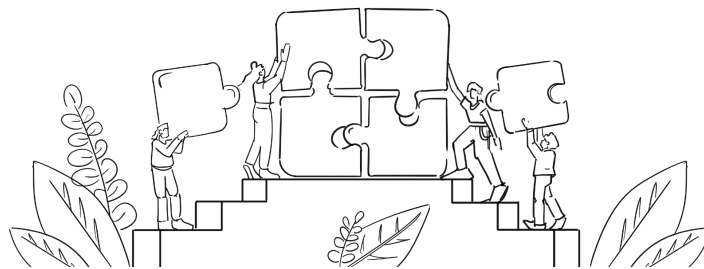
*Fig 5.2.4.4 Concept sketch for Rewards*

For the reward section, I tried to represent both elements, Aikou points and the Incentives we will reward the user. Instead of drawing just some rewards, I believed drawing a character with them would encourage users to earn and feel connected while receiving them.



*Fig 5.2.4.5 Concept sketch for Professionals*

On the professional's page, for the visuals, I sketched two people empathizing with a person while analyzing them and making notes. This would give a clear idea to a user of what the section represents.



*Fig 5.2.4.6 Concept sketch for Community & Doujin*

For the sections representing the community, doujin, or any external support section, I thought of showing a group of people doing an activity. Since an activity would not justify the effect of what being a part of a community is, I replaced it with showing people putting together pieces of a puzzle. Each puzzle represents the individual themselves and the emotional baggage they carry. By putting them together, they are opening up to the world and not jarring up their emotions to make sense of their feelings.

I also illustrated around 63 sketches for the activities that I will be designing for different levels of depression.

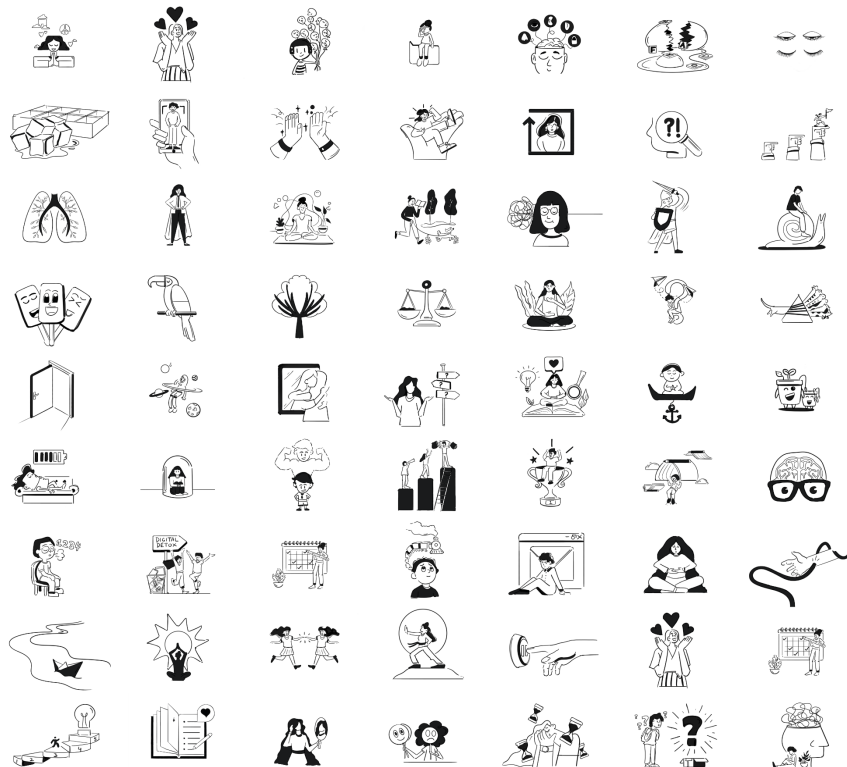


Fig 5.2.4.7 Sketches for the activities

## 6. Final UI design for Phase – 1

### 6.1 Wireframing

I sketched out various concept ideas for a layout that can stand out and won't be a typical website scroll for our users. Following are a few wireframes concept:

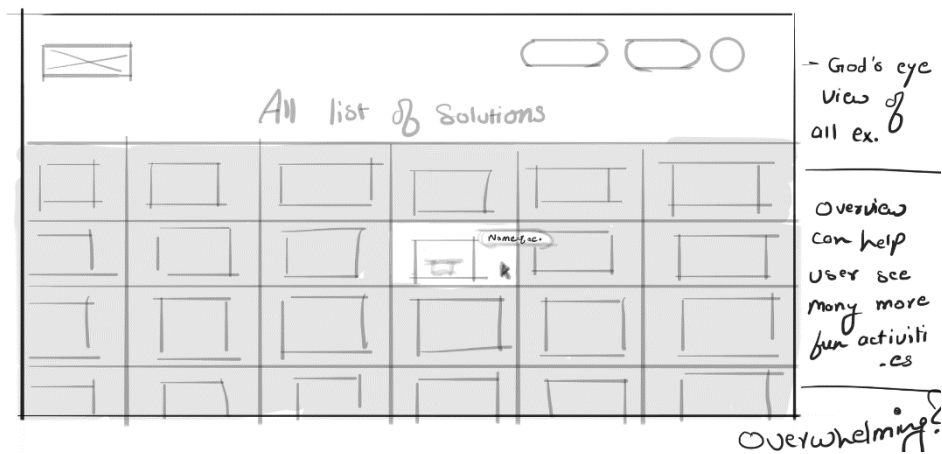
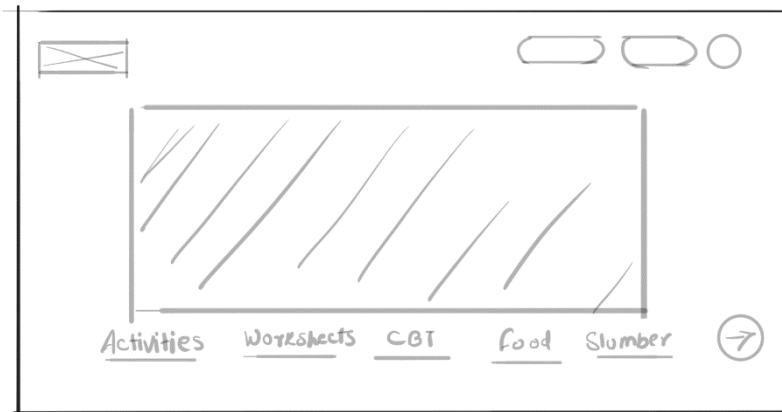
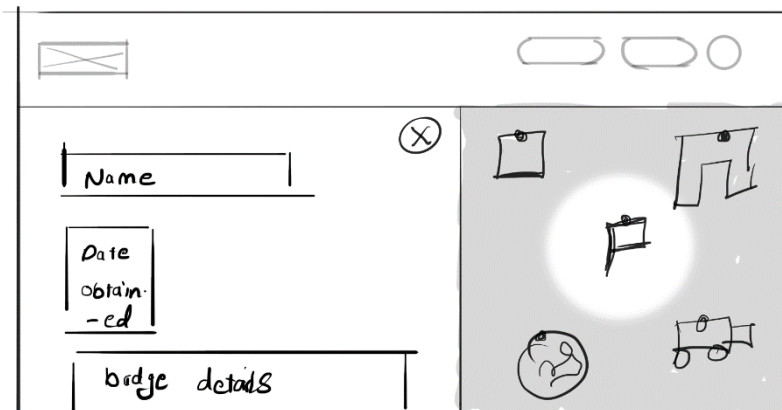


Fig 6.1.1 Wireframe : all exercises



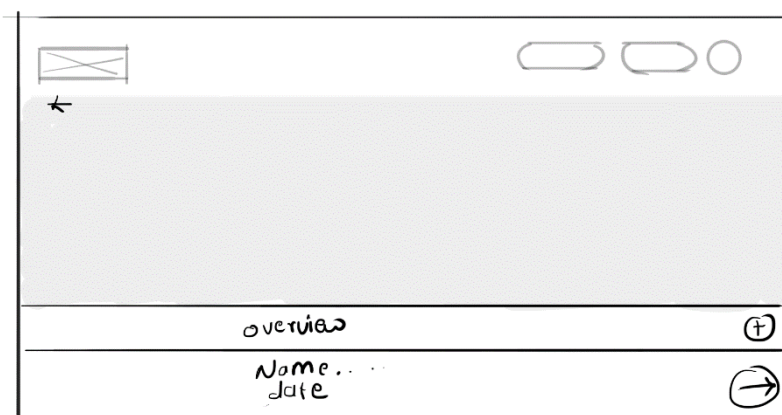
- easy navigation
- animated
- Visuals keep shifting

Fig 6.1.2 Wireframe 2: landing page



- badges and rewards pinned to the board

Fig 6.1.3 Wireframe 3: rewards



- preview of a memory recorded
- highest felt emotion

Fig 6.1.4 Wireframe 4: tell my tales

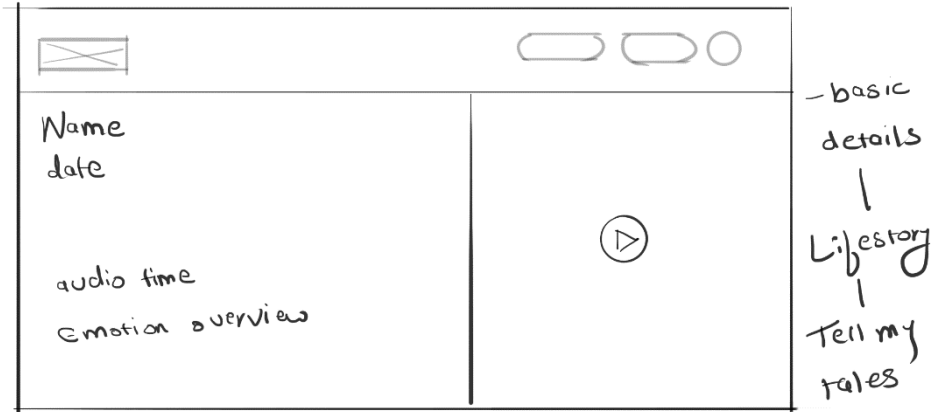


Fig 6.1.5 Wireframe 5: tell my tales details

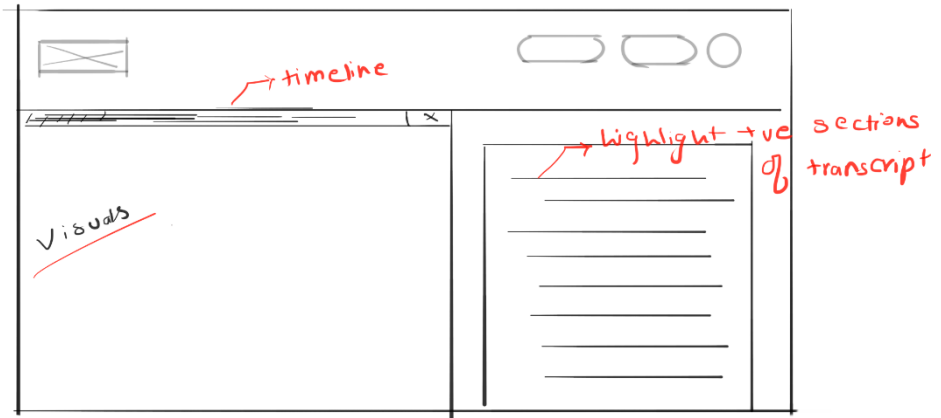


Fig 6.1.6 Wireframe 6: tell my tales recording

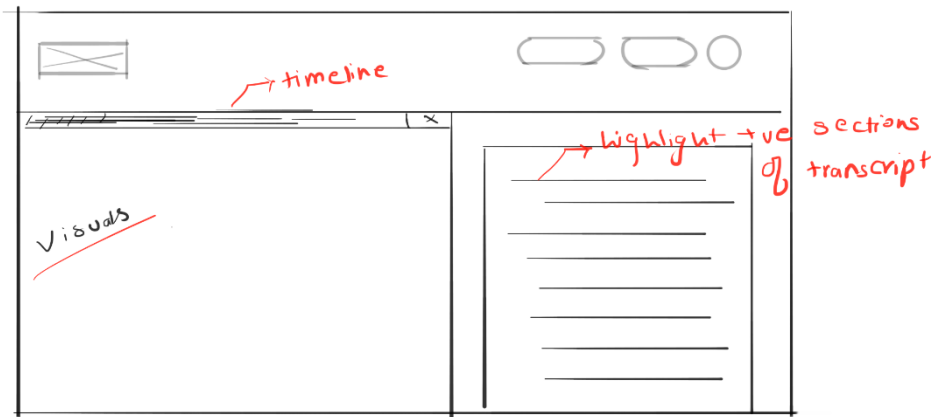
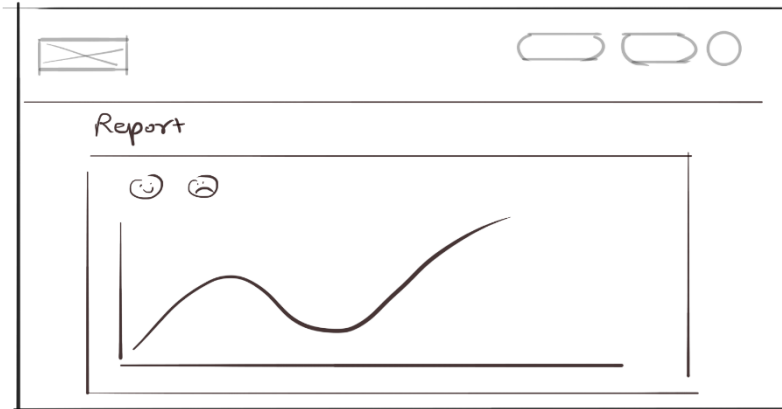


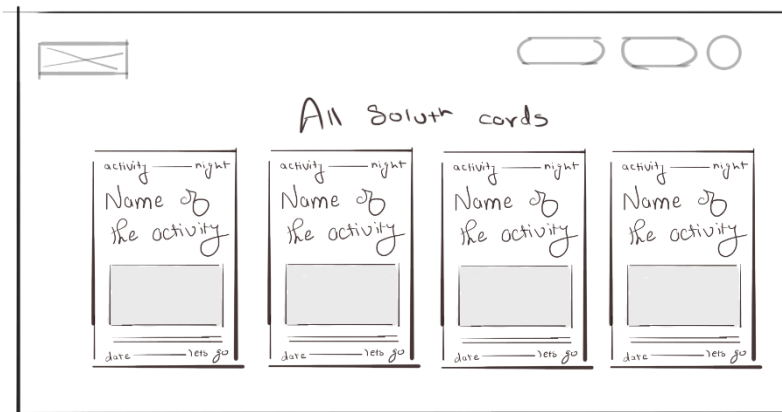
Fig 6.1.7 Wireframe 7: tell my tales recording





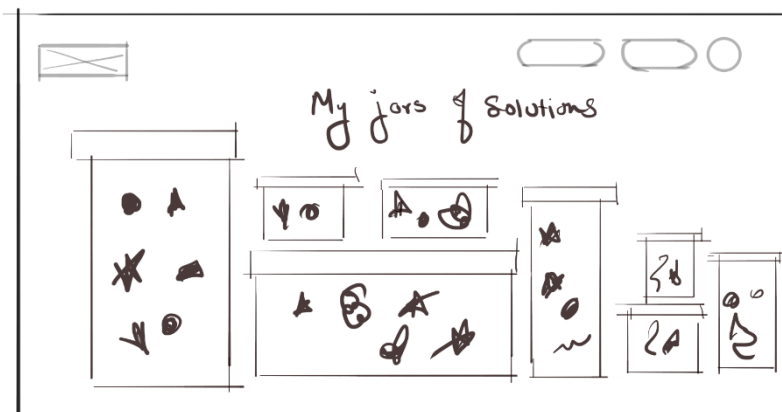
- quick report after the recording

Fig 6.1.8 Wireframe 8: tell my tales analysis



- User can see all exercises for the week  
but will this lack their interest?

Fig 6.1.9 Wireframe 9: all solutions cards



- Keeping jars locked  
- gamified complete one jar task to open another

Fig 6.1.10 Wireframe 10: weekly solution page

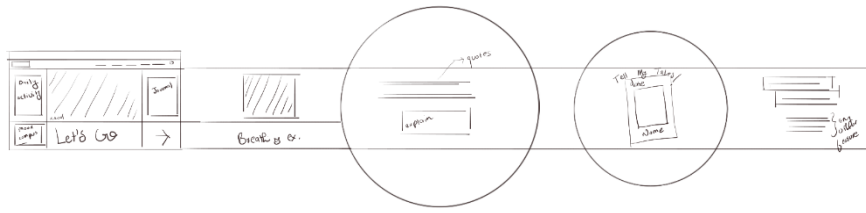


Fig 6.1.11 Wireframe 11: horizontal view landing page

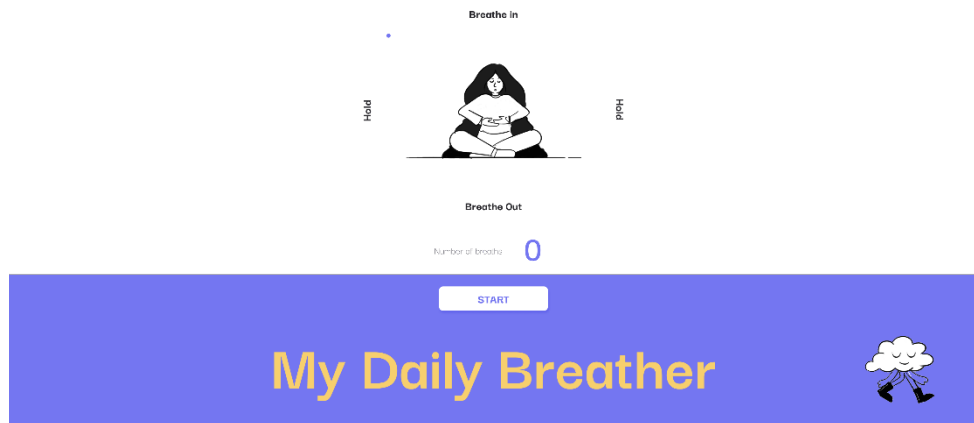
## 6.2 Hi-fidelity user interface

After discussing the concept sketches with the company, a few ideas were approved and taken forward. Based on those concepts, I have designed the hi-fidelity UI design with a working prototype.



Fig 6.2.1 Landing page

The landing page is divided into six sections. The center focuses on creating a calming visual by encouraging the user to get going with the solution. The left side is further divided into the Daily solution section and the Mood compass. The daily solution will keep changing; these will be easy, fun activities for the user. The mood compass will have all the analysis of the individual. The right side is divided into two sections, A journal of gratitude and an arrow. The journal of gratitude will help the user track their mood and emotions regarding their surroundings. With the AI, the individual will also track themselves to get into a habit of checking on themselves. The arrow will lead the user to the next section.



*Fig 6.2.2 My daily breather page*

It had been proven that breathing exercises help you calm down and recentre your focus. Here I have combined two such exercises to create a blend of two effective breathing exercises, box breathing and counting your breaths.



*Fig 6.2.3 Motivate me page*

Our users need constant motivation and reinforcement. In this section, we can provide them with affirmative quotes with the interpretation or any funny quote that cracks them up. It is proven that motivational talks and laughter can help increase dopamine levels, leading to happiness.

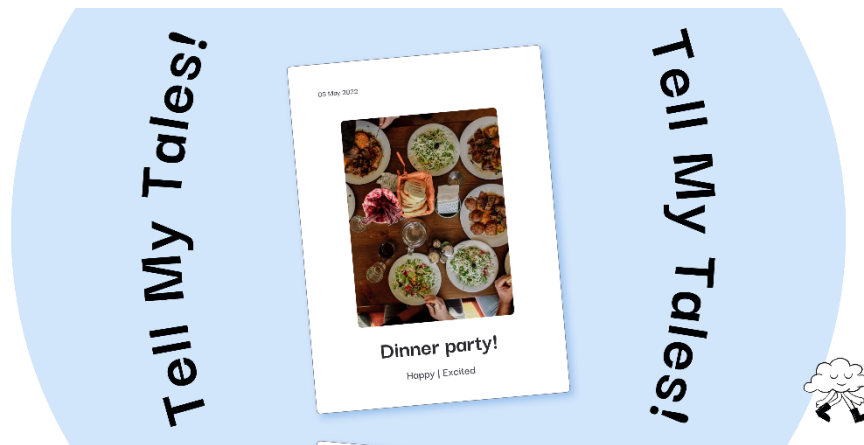


Fig 6.2.4 Tell my tales page

Tell my tales gives an individual an opportunity to video log their memories with our AI giving a detailed analysis of their emotions. The user can record their stories, and our AI will replay them whenever they want. People with depression tend to always focus on the negatives and the low moments of a situation. The AI also provides a transcript of the video with the most positive sections highlighted. This will teach our users to focus on the positives in their stories.

## Feel Strong Be healthier

Find Professionals Around Me  
All Exercises  
My Rewards  
My Emotion Calendar



Fig 6.2.5 Footer page

The footer page provides the user with more options to explore on our website, like find a professional near me, check all exercises, my rewards, sleep, and nutrition.

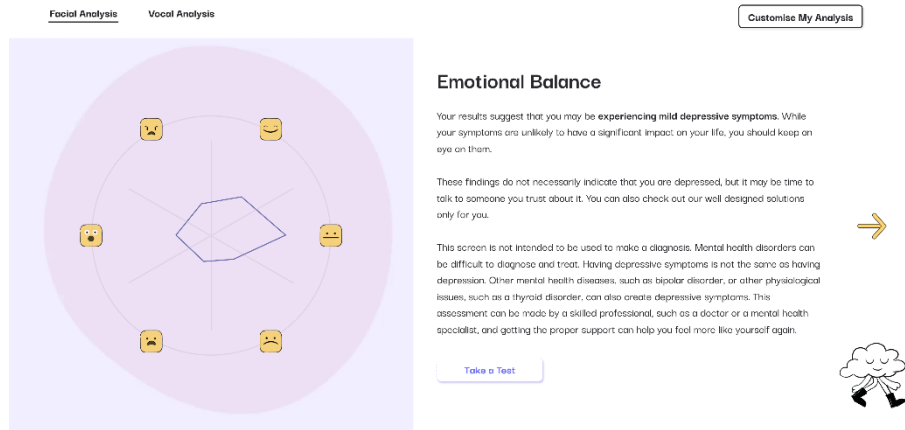


Fig 6.2.6 Mood compass

The mood compass section gives the user an overview of their emotional analysis. IBY AI analytics provides a series of graphs that can be overwhelming for our users. I have designed and sectioned the graphs in a way that an individual can grasp the data easily and understand it.

Emotional balance gives the user an overall score of their emotions and gives a report on the level of depression they might be experiencing. It also lets the user take a PHQ-9 test (A proven test to detect depression).

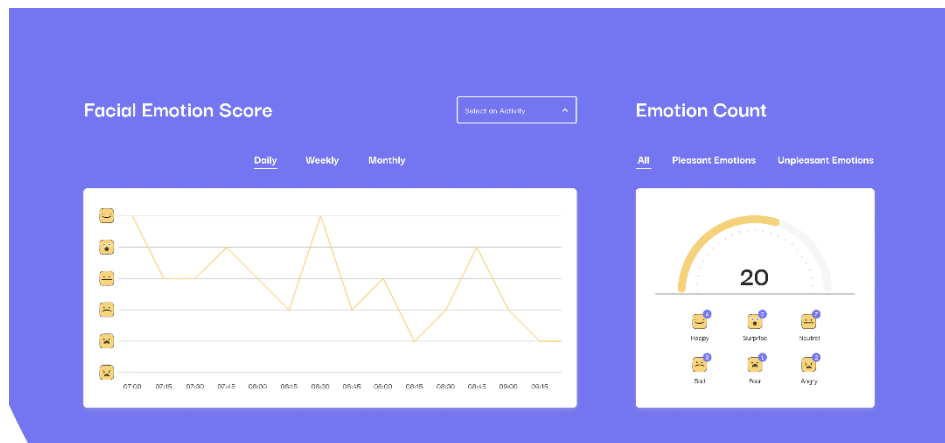


Fig 6.2.7 Mood compass page 2

The mood compass further shares the emotional score and emotional count of the emotion most expressed by the user.

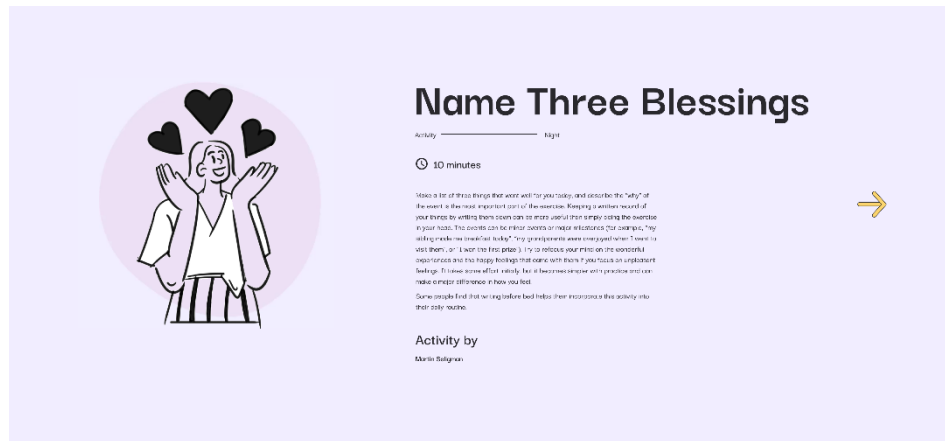
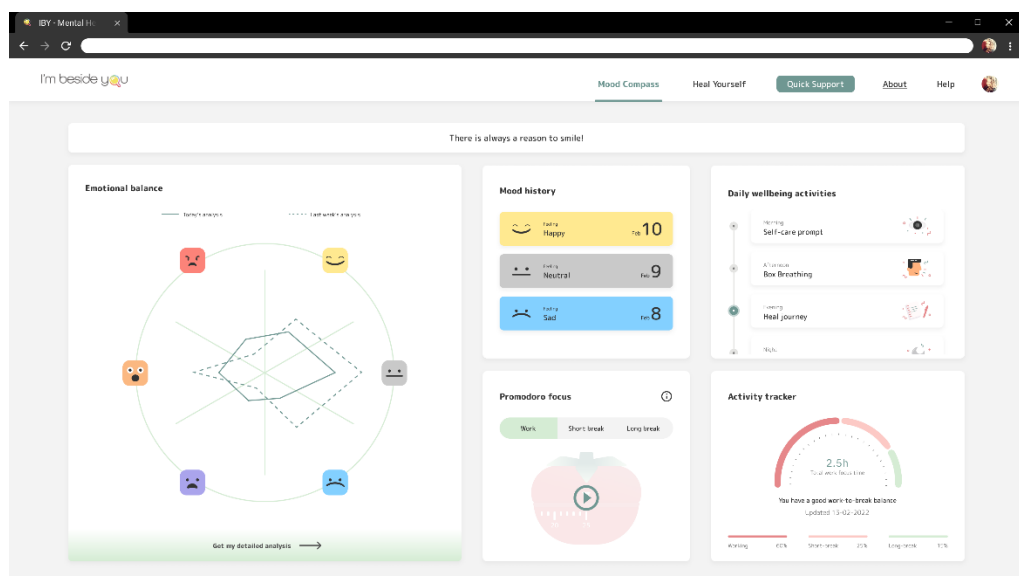


Fig 6.2.8 Solutions page

The daily exercise will give the user an overview of the activity provided. It will also share at what time of the day should the user do the activity with the timestamp mentioned.

## 7. Additional work

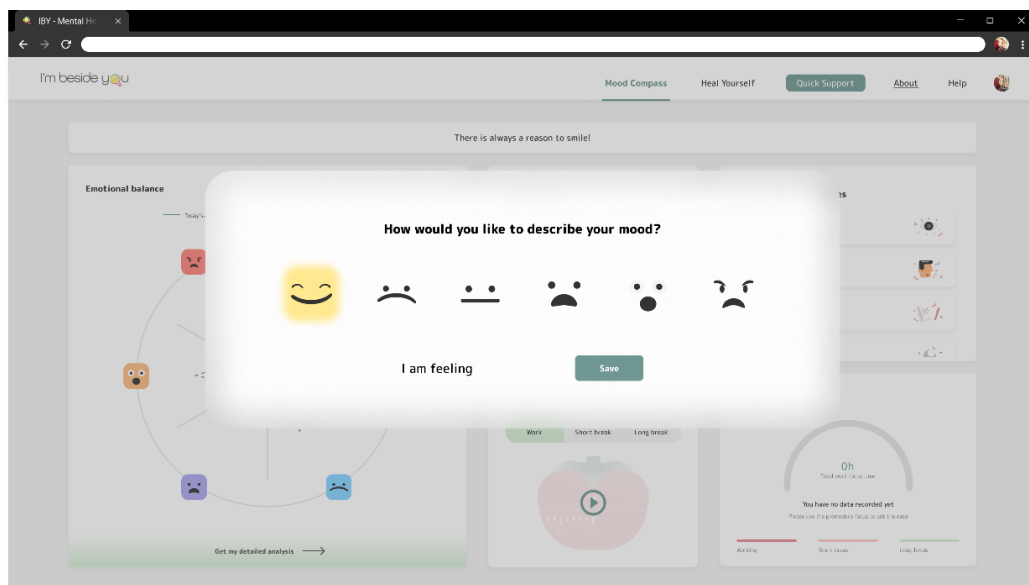
The initial requirements for the project were to design a working prototype UI for Mental health solutions in India. Later the company also provided an opportunity to design a Mental health solution UI for the US market as well. The deliverables for this project were the same, an IBY AI analysis report and a few mental health exercises. The target audience for the US market was working professionals from the ages of 24–30 years old.



*Fig 7.1 UI design for the US market mental health solution dashboard*

The dashboard page allows users to assess their emotional balance by looking at their mood history for the previous three days. Users can use the Mood Compass to track and balance their emotions. The Mood Compass is well-designed for the target audience of 24–30-year-olds in the workplace in the US. The Daily Wellbeing Activities are set up in such a way that users can bounce back quickly. For many, it serves as a daily self-reflector and a pause exercise in their hectic schedules. Self-care prompt, Box breathing, Heal yourself, and Daily routine check are the four elements of the daily well-being exercise. These exercises are designed for people who have a busy schedule. The activities are organized so that people have at least a few minutes each morning, afternoon, evening, and night to pause and reflect upon their life.

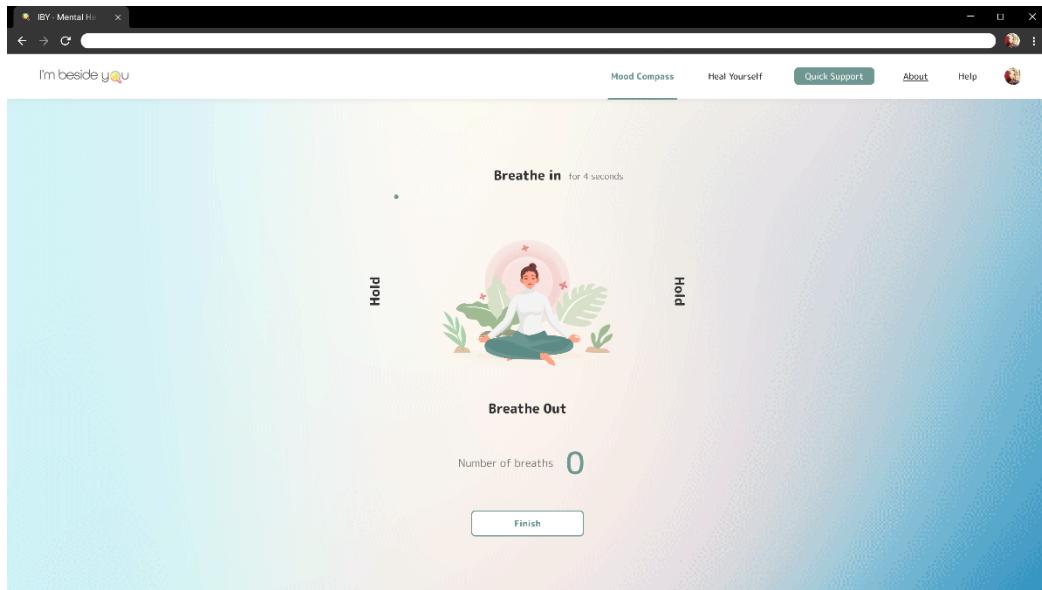
Reasoning: This allows users to visually examine their most common emotions. The aim of using a radial chart was to make it easier for the user to interpret the graph.



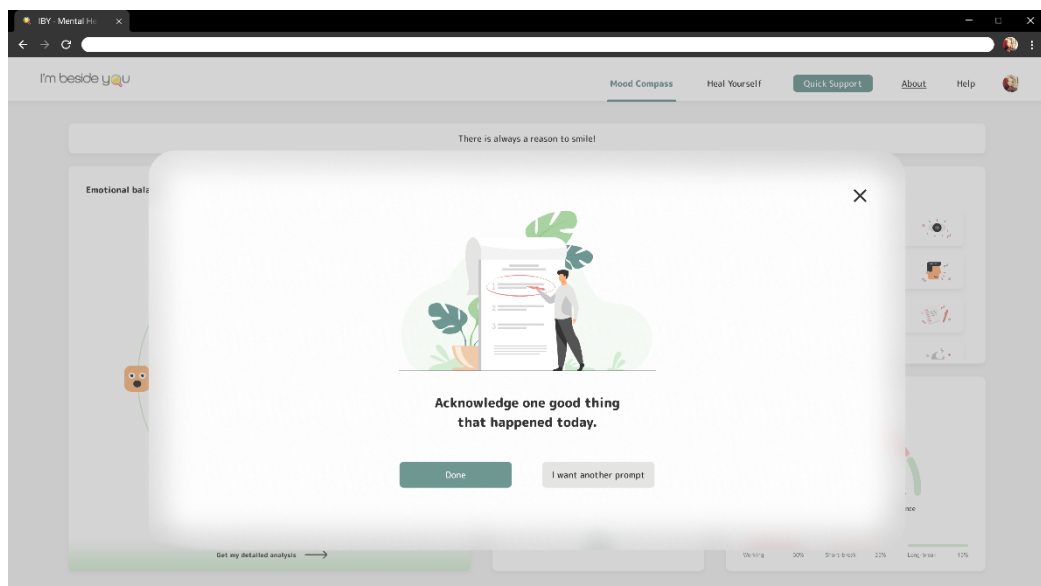
*Fig 7.2 UI design for the US market mental health solution, users can pick their emotions and keep a track of them themselves*

Users can share the emotion they are experiencing on this page. The interface has been designed in such a way that the user can choose an emotion and relate to it. For users, a text visual explains each emoji

Reasoning: This lets the user know that the AI isn't only calculating their emotional graph; it's also considering their thoughts. Text visuals are required because users are not yet familiar with our brand.



*Fig 7.3 UI design for the US market mental health solution, box breathing exercise combined with counting breathe exercise to help user recenter their focus*



*Fig 7.4 UI design for the US market mental health solution, a daily prompt exercise to help users focus on doing a task every day*

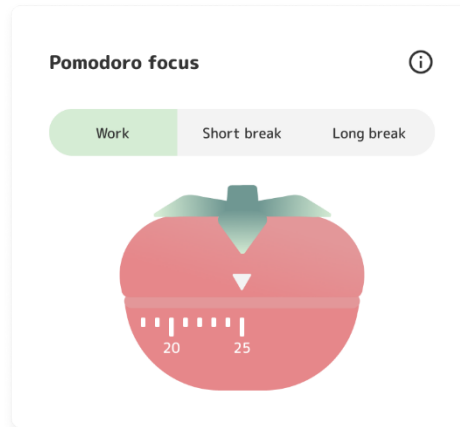
**Self-care prompt:** To receive a customized activity to improve a user's mood, click and use the self-care prompt randomizer. The purpose of a daily prompt is to remind users that they are often engrossed in their work, leaving little time for themselves. This prompt randomizer encourages people to take time for themselves and practice self-love.

**Box breathing:** In your routine, this accessible breathing technique functions as a stress reliever. Box breathing can help a user refocus if they are feeling overwhelmed. The



technique allows the user to take deep breaths, hold them, and then exhale each for four seconds. The user is shown an animation to help them follow the flow without getting confused.

**Daily routine check:** A daily check-in allows users to track their activities to become a happier, healthier version of themselves. It is helpful for the user to have their mind and body in sync.



*Fig 7.5 UI design for the US market mental health solution, a Pomodoro focus timer for helping users to stay focused while working with needed breaks*

The Pomodoro section is a timer technique. When an employee is easily distracted and has trouble focusing on the task at hand, this strategy can help. The technique can help users stay motivated to reach their goals because it requires them to focus on specific tasks for a specified time. It is also helpful for users who have a lot of repetitive tasks to complete, such as writing, coding, or data organization. One Pomodoro interval is long enough to progress on a task but not so long that it becomes overwhelming or tedious. It also allows the user to set time for relaxation and cooling down to regain their attention. It is helpful because it will enable users to successfully manage their time and focus on a task without being distracted.

The activity tracker assists users in keeping track of their Pomodoro focus and break times. This can help them in striking a balance between work and break time. Employees with stressful professions may forget to take breaks, resulting in burnout and reduced productivity. This combination of a focus timer and a time tracker can assist them in maintaining a healthy work-life balance.

## 8. Conclusion

The phase -1 design is ready with a mood compass prototype and a few exercise prototypes. My supervisors at IBYs have approved this design and have given me a heads-up to design more exercises for the solution part. The design is still in the process where I am designing all the exercises mentioned in fig 4.9.3 to fig 4.9.6.

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