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MENTAL WELLNESS - A Mental Health App

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Group No. 9

A PROPOSAL ON

MENTAL WELLNESS - A Mental Health App

BY

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PROBLEM STATEMENT

Mental health problems are a growing public health concern. Recent studies demonstrated that the burden of disease associated with mental illness is among the highest for all disorders globally. Resources and services for these mental disorders are disproportionately low as compared to other diseases. The World Health Organization (WHO) estimates that 75–85% of people with diagnosed mental health problems in low and middle-income countries (LMICs) do not receive any treatment due to lack of awareness, scarcity of mental health professionals, and high levels of stigma related to help-seeking.

In India, the treatment gap is exacerbated in rural areas due to low literacy levels, poor knowledge about mental health, absent or inadequate mental health services, and even fewer trained mental health professionals. Poverty and lack of public transport also reduce accessibility to primary health centres. In order to bridge the treatment gaps for mental disorders, there is a need for innovative healthcare delivery models, but these need to be implementable, acceptable, and feasible within the existing public health system.

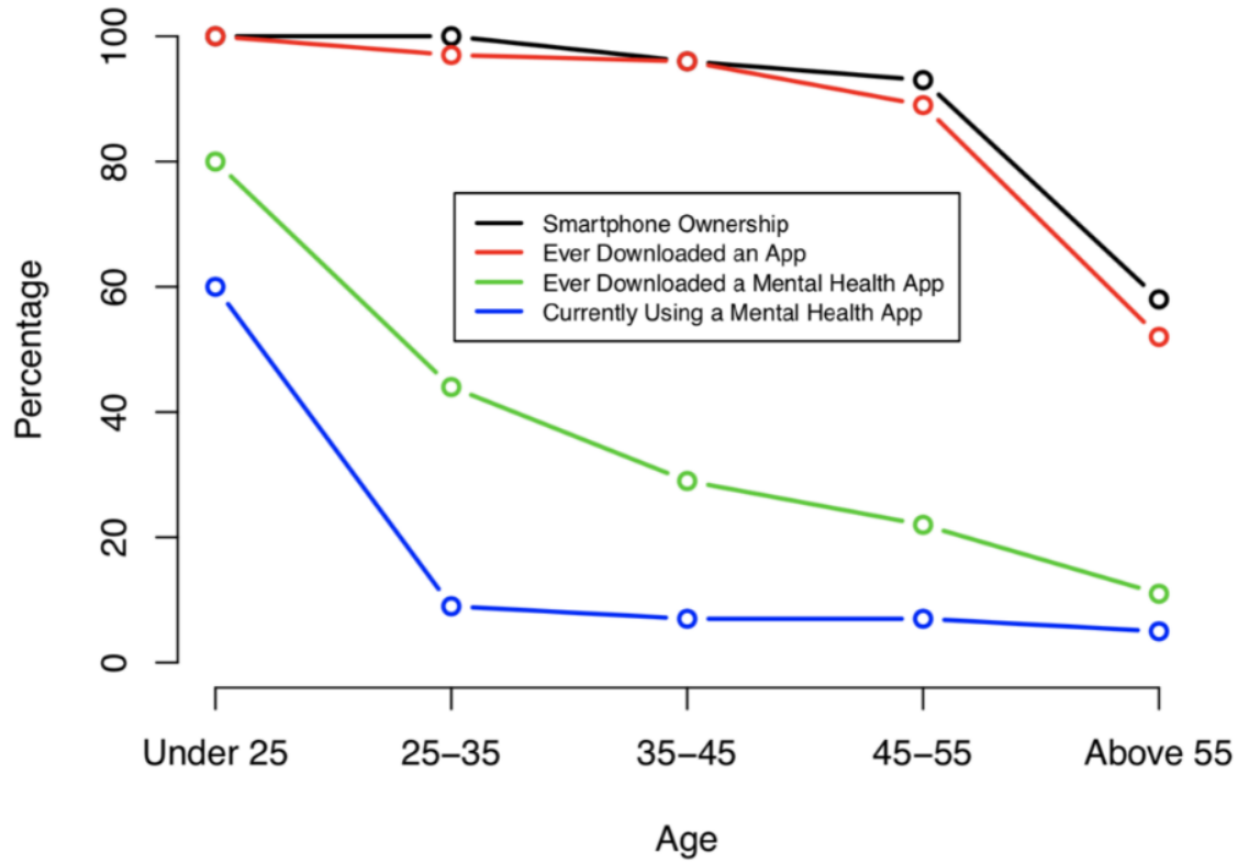
INTRODUCTION

Many who seek primary health care advice about mental health may be using mobile applications (apps) claiming to improve well-being or relieve symptoms. We aimed to identify how prominent mental health apps frame mental health, including who has problems and how they should be managed.

Studies have examined the effectiveness of task shifting and the use of an electronic decision support system (EDSS) on mental health services delivery and have been implemented earlier at a smaller scale by our group in 30 villages in a tribal area of India.

India's primary health system in rural settings essentially comprises a lay village health worker (Accredited Social Health Activists – ASHAs) who is a local community person and has been educated to about tenth grade. She is provided basic training in identifying common ailments and maternal and child care needs in the villages and refers such cases to the primary health centre staffed by one medical doctor and paramedical staff. Each ASHA caters to about 1000 individuals and is paid a nominal amount for each performance-based activity.

Primary Health Centres (PHC) cater to the 20,000–30,000 population and are managed by a medical doctor, nurse and paramedical staff, and administrative officers. The PHCs manage the most common ailments of villagers that fall within the catchment area of a PHC and refer the more complicated cases including conditions like mental disorders, to the district hospitals.



Mental health statistics in India:

- India is ranked 139 out of 149 countries in the latest happiness index.
- More than 65% of those aged 18-24 years in India suffer from depression.
- 71% of India's population still addresses mental illness with prejudice.
- One estimate suggested India would lose \$1.03 trillion between 2012 and 2030 due to poor mental health; the pandemic is likely to have increased this cost.

Considering the importance of creating a mental health app in society at this point, we thought it's high time we put on our mental health app developers' hats.

OBJECTIVES

With the COVID-19 pandemic and everything around us happening virtually, be it education, work, or even doctor's consultation. Being stuck inside our houses and not meeting our friends or even family, sometimes takes a toll on our mental health. Due to the fear of being judged, people who are suffering from mental issues don't want to come out in public. Instead, they find their comfort in talking to unknown people.

We want to provide support and advice to empower all Indians affected by symptoms of mental health. We want to improve the mental health of all people in India. We want to promote understanding, reduce stigma, and give a voice to those who have none. We aim to help individuals lift themselves out of the impacts of poor mental health, we want to ensure that all people especially those with the fewest resources hold a good state of mental health to secure opportunities to succeed in life.

- **Awareness:**

Mental health affects us all. Mental health is equal to physical health. Affecting rich, poor, young, and old.

- **Access:**

We strive to ensure access to treatment options, support groups, knowledge of mental health, and inclusion in society.

- **Advocacy:**

We work with governments, educational institutions, businesses, civil society, and media to build support, build best practices, create partnerships and reduce stigma in Indian Society.

- **Anticipation:**

We realize mental health issues are growing. We recognize the need for ranges of treatment to anticipate mental health issues. We will use community support options to develop effective methods of support.

The application will be equipped with various features, some of which are:

- User Profile
- Notifications
- Dashboards
- Self-Monitoring
- Messaging and Calling (Audio/Video)
- Artificial Intelligence and Machine Learning

Below is the Mental Health Survey Template consisting of questions and examples that help evaluate a person's overall mental health. Using this sample survey template, we can collect information from the respondents about any history of mental illness, previous diagnosis, and other important personal details that will help the researcher understand the mental health condition.

Sample Survey Questionnaire:

Gender:

- ☐ Male
- ☐ Female
- ☐ Others
- ☐ Prefer not to say

Age:

During the past 4 weeks, have you had any problems with your work or daily life due to your physical health?

- ☐ Yes
- ☐ No
- ☐ Don't know

During the past 4 weeks, have you had any problems with your work or daily life due to any emotional problems, such as feeling depressed, sad or anxious?

- ☐ Yes
- ☐ No
- ☐ Don't know

Overall how would you rate your mental health?

- ☐ Excellent
- ☐ Somewhat good
- ☐ Average
- ☐ Somewhat poor
- ☐ Poor
- ☐ Not sure

How often do you experience below?

	Never	Once in a while	About half the time	Most of the time	Always
Calm and peaceful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energetic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gloomy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Angry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

When did you last get your mental health examination done?

- ☐ Less than 6 months ago
- ☐ 6 months ago
- ☐ A year ago
- ☐ More than a year ago

Are you currently taking any medication?

- ☐ Yes
- ☐ No

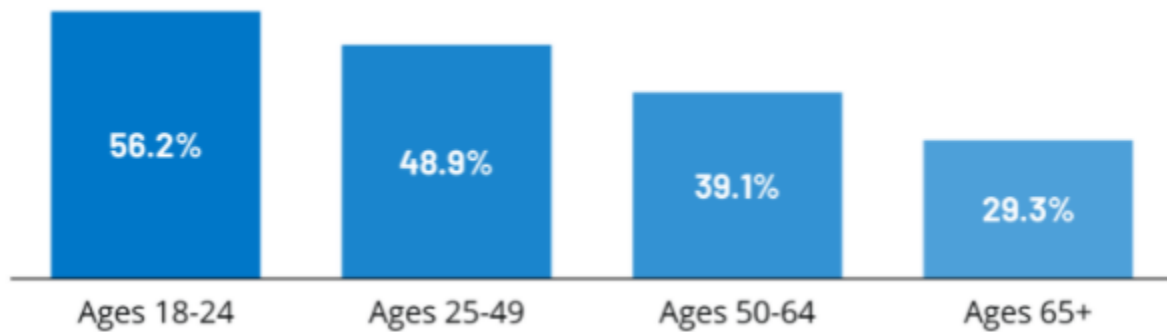
How many hours do you sleep per day?

- ☐ Less than 4
- ☐ 4-6
- ☐ 7-9
- ☐ 9+

How is your quality of sleep?

- ☐ Very bad
- ☐ Bad
- ☐ Normal
- ☐ Good
- ☐ Very good

Survey Report:



Percentage of mental health illness among the people

We have come up with an application that will help people to keep a check on their mental health as well as consult psychiatrists during an emergency. This application will help consultations to happen online without any hassles. Just by sitting at home, we can seek help, thus creating a new normal.

TECHNICAL PLAN

Much of the health technology industry focuses on physical maladies, from high blood pressure to diabetes, but technology can also offer new ways to treat mental health disorders. There are several mental health mobile applications out there. Here is a list of things we will consider while creating a mental health app.

Consumer-centric Design:

For any mobile application to establish trust and credibility, the app design is vital.

- Is the onboarding process smooth and swift?
- Is it user-friendly and easily comprehensible for users in terms of what they can do in the app?
- Does the UX have interactions?

We will make sure that it is accessible to everyone including those who aren't a fan of vibrant designs.

Security:

Security is an important consideration because people care about their data and are not willing to put that at stake. Being HIPAA compliant is primarily to ensure data security but apart from that, we will have a transparent privacy policy along with educating your users about security and best practices.

Doctor Centric Back End:

We will make sure that the therapists too would be using the same mobile app to interact with users, track and review patient data and progress.

Multiplatform Support:

In today's time, users generally use 2 devices. A smartphone and a laptop. With many options available for the users, we will make sure that the application is compatible with various devices and that it is always available to use.

Interoperability:

It is important that when you create a mental health app, the mental health data flows freely from a mental wellbeing application to other therapy providers. We will keep the patient data readily available for secure and anonymized sharing because you never know when and what opportunity knocks on the door.

Psychiatric Emergency:

Last, but not least, always reiterate to the patients that your mental health mobile app is not a solution for an emergency. Therefore we will provide appropriate emergency contact numbers in-app for situations like these.

To sum it up, when we decide to create a mental health app, it is vital that our health app is backed and based on evidence and that it provides the users with a privacy policy ensuring that their data is safe and secure in order for them to feel confident about using the app we build.

SOFTWARE DEVELOPMENT

The following software technologies are required in the development of the software:

- Frontend: HTML, CSS, JavaScript, JQuery
- Backend: SQL
- Framework: .NET

Software Development:

At the most basic level, we employ five stages during the software design process:

- Research
- Ideation
- Design
- Development
- Iteration.

These five elements parallel the most basic questions of “*who, what, when, where, and how*” that are needed to fully answer any set of questions.

The flow of the application:

- The user has to sign up/log in first.
- After successful registration, the user has to fill up a form that will contain some basic questions related to the user’s mental health.
- Depending on the answers, the user will be notified if he/she requires medical guidance.
- There will be doctors available 24x7. If by chance the user suffers a breakdown at midnight then they can easily consult our doctors instead of going to the hospital.

- The user can also book appointments for future consultations.
- There will be a weekly survey for every patient which will help the users to keep a check on their mental health.
- There will be a personalized report generator that will help the users to track the progress of their mental health.

Implementation:

For the frontend, .NET is a developer platform made up of tools, programming languages, and libraries for building many different types of applications. It supports running websites, services, desktop apps, and more on Windows. .NET Core is a cross-platform implementation for running websites, services, and console apps on Windows, Linux, and macOS.

For the backend, Structured Query Language (SQL) is the standard language used for writing queries in databases. SQL provides high-performance programming capability for highly transactional, heavy workload, and high usage database systems. It is very easy to provide permissions on tables, procedures, and views hence SQL gives security to your data. SQL provides Scalability and Flexibility. It is very easy to create new tables and previously created or not used tables can be dropped or deleted in a database.

Therefore, these software technologies can be implemented in making a Mental Health App for people who suffer from mental health illnesses.

MANAGEMENT PLAN

Our project aims to make a fully functional application that will help in the computerization of most of the tasks that one needs to perform after researching mental health awareness. The execution process follows these five basic steps:

- Developing the software
- Debugging the software
- Identifying the target audience
- Marketing and publicizing the application
- Monitoring the demands

Time management:

The time factor required in all these tasks is relative but we still aim to display our final product to the people at the end of 5 months.

Developing the software	9 weeks
Debugging and Layout planning	4 weeks
Testing the software	3 weeks
Marketing	1 week
Accounting	3 weeks

Segregation of responsibility:

Our team has few of the most efficient and technically skilled people. Given below are the attributes and also the responsibilities assigned to each team member:

- **Yash Raje** (Marketing Manager): Having good communication and business management skills, he is responsible for developing marketing strategies to promote our application.

- **Ninad Rao** (Project Manager): Having experience, a good and precise understanding of the product, and including every team member in the discussions, he is responsible for managing the team and delivering the best of the product.
- **Venkatesh Reddy** (Finance Manager): Being skilled at managing the finances by allocating a proper budget, he is responsible for the overall finances and providing the best resources in a cost-effective manner.
- **Ryan Rodricks** (App Developer): Having all the relevant technical skills and a good understanding of problem-solving, he is responsible for developing our application in the best possible way.
- **Anusha Shetty** (App Designer): Having a good understanding of the client's needs and creative thinking, she is responsible for designing our application in such a way that the user experience is seamless, simple, and less time-consuming.
- **Sahana Shetty** (Software Tester): Having a good understanding of the system and the ability to consider all the possible difficulties a user can face, she is responsible for ensuring that the system is bug-free and secured.
- **Mugdha Sholapure** (Public Relations Officer): Having good communication skills, awareness, and creative thinking, she is responsible for managing the reputation of the company, managing crisis situations, and dealing with the press.

COST ESTIMATION

Since the product proposed is an application, all the major expenses will be concerning the fabrication of the application. The basic idea of the proposal is to develop an open-source application and at a later time, sell it to the hospital by which it can digitize the whole system.

The breakup of the estimated cost:

- Developing the software: Rs. 73684 (\$1000)
- Annual maintenance and updates (20% of the development): Rs. 14736 (200\$)

Total cost: Rs. 88420

Note: The given cost is an estimate calculated by our group, the original expenditure may vary from these estimates.

CONCLUSION

The aim of this proposal was to identify and evaluate the types of mental health self-care support used by, and available to the people, and to establish how much support interfaces with statutory and non-statutory service provision. Through our research and our development of the software, we are confident that we can achieve these aims.

Mobile apps have significant potential to deliver high-efficacy mental health interventions. Given the global shortage of psychiatrists and the lack of mental health care access in rural regions, apps have emerged as a viable tool to bridge the mental health treatment gap. Technology is well-poised to transform how mental health treatment is delivered and accessed, but this transformation requires the combined mobilization of science, regulation, and design.

Moreover, in doing so, we will develop an application of self-care support that can help policy-makers and practitioners make decisions about the organization and delivery of mental health self-care support for the people, and help us to identify gaps in the knowledge base that might be resolved with future research in this area.