Haal Chaal: A Mood Based App for Everyone

Prototype

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Abstract

Stress and anxiety are a part of the daily life of many individuals, especially students and working adults. Everyone has different coping mechanisms when dealing with these stresses and anxieties. While many apps exist to individually cater to these coping mechanisms, no all-in-one platform exists that caters to multiple coping mechanisms. This paper highlights the development process of our prototype for such an all-in-one platform in the context of Pakistan. Through user research and usability testing, this paper maps the efficiency and usability of such an app.

Keywords: stress, anxiety, music, religion, exercise, movies, usability, efficiency, prototype

1 Introduction

Almost everyone faces various stresses in their daily life, especially students and working adults, causing them to feel anxious and low. However, everyone has a different way of coping with these negative emotions. Some people relax through exercising or meditation; some find peace through religious content; some sit back and enjoy a movie or TV show, while some find listening to music comforting. These coping mechanisms vary from person to person based on their preferences. Moreover, preferences of people change over time, and they may also like exploring other coping mechanisms. While there are many apps that cater individually to these coping mechanisms, there isn't a single all-in-one platform where all these categories exist together. Moreover, the content of these apps may not always necessarily be therapeutic. Therefore, an all-in-one platform would allow users to explore different coping mechanisms, finding ones that are suitable for them that could help manage their daily life stresses.

This paper maps the journey and results of our development for the prototype of such an all-in-one platform, "Haal Chaal." "Haal Chaal" is a mood based app that allows users to explore various coping mechanisms based on their moods. The app aims to cater to Pakistani students and working adults who feel various anxieties and stresses in their daily life. Additionally, the phrase "Haal Chaal" indicates the question of "how are you?" in Urdu with causal connotations. Therefore, the name caters to a Pakistani audience, while ignoring the social stigma attached to the term "mental health" in Pakistan.

The remainder of this paper is structured as follows: Section 2 discusses previous research and products that cater to mental health. Section 3 discusses the methodology and results of our user

research. Section 4 maps the design process of our initial paper prototype. Section 5 analyses the features and development of our final prototype. Section 6 discusses the results of our usability testing with the prototype. Lastly, section 7, the conclusion, discusses areas for further improvement and research.

2 Literature Review

2.1 Understanding Mental Health

Mental health is the successful performance of cognitive functions. According to the World Health Organization (WHO), mental health is defined as ‘‘a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity’’ [12]. Additionally, social stigma contributes to the worsening mental health of many people [1]. Also, concerns about personal health and finances during the pandemic have resulted in more psychological distress among people [6]. In short, most people do not have access to mental health services, resulting in mental illnesses. Research regarding students in Pakistan suggested that 39% of the students showed low mood, anxiety among 36%, and depression among 25% due to interpersonal and academic difficulties [11]. A report from ORCHA (Organization for the Review of Care and Health Applications) reveals that the search for mental health apps has increased dramatically during the lockdown. Evidence suggests that mental health apps have great potential to cope with stress [8]. Such apps can provide several potential benefits to deal with anxiety and other mental strains. The benefits include accessibility, portability, affordability, and anonymity, depending on the app's features [10]. Some studies have shown that mHealth (mental health apps) might be more effective than in-person therapy [15]. There are currently more than 10,000 apps that aim to alleviate the mental health issues of their users. Most of these apps target anxiety, depression, mood, behavior, and trigger points of their users [4]. However, a review done by psychologists of 52 apps suggested that two-third of apps involved no guidance from professional health care [13]. Another review of high-rated 25 apps for anxiety revealed no evidence-based treatments in those apps. Data privacy is another concern for the users, where apps collect sensitive mental health data to sell ad revenue [15]. Furthermore, many app developers do their own research instead of communicating with a psychologist or a healthcare professional for an app, which produces an inefficient app. In short, for an effective mental health app, user research, consultation with a healthcare professional, and cybersecurity are essentials. Therefore, our entire app development process began by understanding the role that different categories play in mental health.

2.2 Music and Music Therapy

The impact of music or music therapy on mental health has been discussed and documented through various studies and literature across different social sciences and science fields. According to the American Music Therapy Association (AMTA), ‘Music Therapy’ is defined as the method of accomplishing individualized therapeutic goals using music interventions [16]. Music therapy offers a nonpharmacological solution to behavioral and psychiatric problems, with previous research showing a curative effect of music therapy on depression [14]. Studies on

music therapy and the scientific and social impact of music, in general, all show the benefits that positive music can have in relieving stress, depression, or anxiety. However, an important aspect that these studies do not account for is that stress is a part of daily life for individuals, no matter what the circumstances. Individuals do not need to have a medical condition to be stressed or depressed, but rather their daily work and relationships can also cause stress or depression [17]. As a result, individuals try to cope with this in their own way. This may lead to them embracing comfort through different types of music, which hold therapeutic value for them, whether consciously or subconsciously. As a result, individuals may use apps like Spotify or Youtube to listen to songs or music. These apps, however, require the user to know their own likings and dislikings, upon which recommendations are based. A major issue with this is that users may choose songs that can negatively affect their mental health, for example, listening to sad music while already being sad. Using this research, our app provides therapeutic music recommendations that help improve a person's mood, not add to it.

2.3 Exercise and Meditation

The impact of meditation in several cultures is quite substantial. There has been a substantial increase in public interest in contemplative practice as a way to manage anxiety and depression and a way to maintain mental health. Numerous mindfulness meditation apps have been developed in the last few years. But there has been limited academic work evaluating these technologies. We nowadays rush through life without noticing, resulting in stress as well as physical and mental health issues. Mindfulness has been defined as the awareness that arises through paying attention to purpose in the present moment without judgment. In contrast, this practice has shown significant benefits for health and well-being, and especially for stress reduction and depression. The term mindfulness usually covers a family of self-regulation techniques e.g., sitting meditation, movement meditation (yoga or tai-chi), or breathing and visualization exercises [2]. Therefore, we determined exercise and meditation to be essential parts of our app.

2.4 Religion

Religion refers to the set of beliefs and ways of worshipping carried out by an individual. Religious coping is defined as the 'use of cognitive and behavioral techniques during stressful life events that arise out of one's religion or spirituality [3]. Psychiatric treatments follow the biopsychosocial model, and religion is considered to be one of the most important psychosocial factors in human life, especially in the Muslim population. Hence it is imperative to recognize how Islam can modify the treatment and prevention of different mental disorders in the context of Pakistan [9]. Moreover, research tells us that the role of religion has not only helped in improving the mental state of individuals but also the physical state. However, despite such positive effects of religion, some people choose not to go with this therapy. They think that turning to religion will only increase their guilt and sense of shame as there are many things obliged by their religion that they are not doing. Consequently, religion could exacerbate guilt in some for not living up to the high standards of conduct prescribed by religious traditions, resulting in low self-esteem [5]. Therefore, our religious content is filtered to include content that is only positive.

2.5 Movies and TV Shows

Films and other video clips are one of the most used means of inducing emotions, and studying the effects on mood by researchers. Not only are they extremely convenient compared to other methods of inducing moods and emotion but also because, as shown by previous reviews and meta-analysis, such audio-visual material is highly effective when it comes to affecting an individual's mood. In fact it has been found that among a number of mood inducing procedures, films exhibited the largest effect size of inducing both positive and negative emotions [18]. The same study also showed that film clips are highly effective in inducing discrete emotions and in prolonged maintenance of both subjective and physiological emotional changes. Furthermore, similar studies have concluded that such movies can have a positive or a negative impact on an individual's mood. Therefore, in our app, we recommended filtered positive content to our users and redirect users to movie and tv/show platforms where they can watch it.

3 User Research

3.1 Methodology

We started to plan for our research by reading articles and understanding what coping mechanisms can be integrated into our solution. Once we noted down our preconceptions about these categories, we held a focus meeting to discuss how to conduct our research. We decided to focus on two user groups: students and adults. Considering the social stigma surrounding mental health in Pakistan, we assumed that only educated people would be willing to use a mental health app. We also assumed that young children or very old people would not be able to use the app. With these assumptions in mind, we moved onto primary sources of research: surveys and interviews.

Our data collection started by constructing two online surveys. These surveys were designed to understand what coping mechanisms respondents use to deal with the stresses in their daily lives if they had ever used a mental-health app. The first survey was for students between the ages of 15 to 25 and was a comparatively long and detailed one. This survey was posted on our university’s Facebook group. It was also forwarded to friends in other schools and universities, through WhatsApp, who were further asked to forward to their school/ university groups. As a result, we got responses from different students across Pakistan from schools and universities. Our second survey was for adults between the ages of 25 to 50 plus and was distributed through WhatsApp. This survey was a comparatively shorter and concise one, in light of the recommendations of adults around us who said that most adults would be less willing to fill longer surveys. We received a total of 170 responses (102 in the student survey and 68 in the adult survey).

We conducted the interviews in two phases. The first phase was conducted at the same time as when the surveys were distributed. This phase consisted of three long, detailed interviews with health professionals and one with an Islamic studies instructor. These interviews were not structured as the aim was to learn more about coping mechanisms and mental health apps. The interviews were essentially a series of follow-up questions depending on what the professional talked about. These interviews proved to be extremely insightful, clearing some of our

misconceptions and helping us structure the phase two interviews better. The phase two interviews were conducted by contacting some people from the survey. As a result, we conducted a total of fourteen semi-structured interviews during this phase, the aim of which was to understand one or two of the coping mechanisms of each interview.

We also conducted one focus group and one contextual participant observation study. The focus group consisted of three students and a moderator, with the major focus being on how music acts as a coping mechanism. On the other hand, the participant observation study was conducted in a Zumba class. The class consisted of the participant-observer, the instructor, and three students. The aim of this participant observation was to understand how an exercise regime like Zumba can help calm a person. Therefore, through all of these methods, we were able to collect significant data to analyze our findings.

3.2 Results/Findings

3.2.1 Music

While analyzing our surveys, we discovered that 69.7% of the student survey respondents and 32.4% of the adult survey respondents listen to music as one of their coping mechanisms when dealing with daily life stresses/depression. Younger people also struggle to express their emotions, so adopt a solution like music where they are all by themselves. However, at the same time, the impact that music has on an individual's emotions was similar across both adults and students. Most of our respondents suffered from the stresses of academics or workplaces. Listening to music essentially represents a short break or distraction from these stresses for these respondents. This power of music comes from a variety of factors, including the lyrics. The lyrics in songs are essentially stories that represent the problems of daily life and the problems of normal people. These stories, therefore, connect to people, unleashing their feelings and providing strength. As soon as a person stops listening to music they return back to the real world and their daily stresses. However, a temporary solution can be turned into a permanent one.

3.2.2 Exercise

Exercise and meditation were found to be common coping mechanisms for many people, especially adults. Users pointed out how this "Me Time" is really important to give your body some rest and think deeply about stuff other than work which gives a feeling of soothing. They understood how it's important to take out time for yourself daily in routine as it's a good exercise for the nourishment of the brain. Also, creating a routine of meditation and exercising when you are feeling down could be a long-term solution that provides relief based on the situation.

3.2.3 Religion

After analyzing our surveys, we found that religion is far more popular as a mode of relief in adults than in the younger generation. The survey distributed to students showed that 20.6% of the students listened to/looked at religious content to deal with stress. On the other hand, the survey distributed to adults showed that 36.8% of them used this mode to deal with negative emotions. The live interviews also demonstrated how people had used religion in their difficult times. Looking at the responses of adults, we found that they had learned to rely on Allah, even if His plan was not going according to their expectations. However, religion could also lead to negative effects, and, therefore, it was important to design solutions that are not harmful.

3.2.4 Movies/TV shows

Movies and TV shows are a common coping mechanisms for many people. But it's only a short-term solution that could also potentially have negative effects on a person's state of mind. So it's important to design a solution that doesn't impact a person negatively while also being beneficial for them. As people tend to waste a lot of time instead of spending some little time. They spend more than necessary hours, which makes them distracted from their work, and they can lose focus for work later. Therefore, only positive movies and TV show content was required.

3.3 Needs and desires

Firstly, there was a need for an all-in-one platform to find reliable content according to the needs and coping mechanisms of users. Secondly, a profile questionnaire was also necessary as not everyone recognizes their own problem, and so certain questions help them understand their problems. Thirdly, providing solutions according to each individual was important, as everyone has their own way of dealing with stress. In addition, the app must also be free for the user as many of the apps are paid and is a significant drawback for not using the app as it defeats the purpose of helping others. Similarly, the health professionals list must be reliable due to inconsistent data available, so they should only be added by doing proper research on them. Furthermore, a favorite option should also be there to save the content they like to view later. Lastly, a feedback option is also necessary as it would help us create a better experience for the user. Additionally, some users felt that motivational quotes reminder really helps to boost their mood and so an option can be added with the time for notification. Also, they recommended an anonymous community where people can talk to others facing similar problems, as talking to a stranger could be beneficial.

4 Paper Prototyping and Initial Design

With the results of our user research concluded, we decided to use these results to develop a solution that could cater to the needs and desires of our users. Therefore, we first began by holding brainstorming sessions, where we came up with different design alternatives, discussing the pros and cons of each design alternative, eventually finalizing a design and its features. These brainstorming sessions were conducted mainly in-person on whiteboards where members from our group pitched their ideas and deliberated on the alternatives.

4.1 Design Alternatives

While we initially felt that an app would be a suitable solution for our problem, we realized that we also need to discuss the possibilities of other solutions, after looking at the needs and desires of our users. Therefore, we discussed different alternatives that we felt could cater to the needs of our users. With our alternatives noted down, we sketched out these alternatives and tested amongst ourselves to see which alternatives were best suited for users. These alternatives are listed below:

1. *Website*: This website would have different categories of religion, music, movies/TV shows, and exercise to help users cope with stress. Additionally, it would provide information about mental health professionals that users could contact if need be.

However, this solution was eventually rejected as it required extra effort like connecting to the internet for users.

2. *Goal-Based App*: This tracking-based or goal-based app would track the results of a set of goals by users. However, this idea was rejected due to its similarity with other apps.
3. *A Mobile App*: This app would have all the categories of the website, but in the form of a mobile app. This alternative was eventually accepted as it was deemed to be the most suitable for users.
4. *Game*: This would be an open-world game to help users cope with stress by giving users tasks to complete and rewards upon completion. This alternative was rejected due to its potentially limited user base.

4.2 The Final Design

With our design alternative selected, we came up with sketches for our final design, and based on our user research, we devised categories for our design, whose details are given below:

- *Music/Songs*: In our user research phase, we found out that the younger generations use music to cope with stress. However, not all types are music and songs are relaxing. Therefore, in our app, the music category would only bring out a list of filtered songs or music that could have a positive impact.
- *Religion:* A lot of individuals turn to religion when it comes to dealing with stress. However, not all religious content might have a positive impact on the mental health of the user. Therefore, the religious content in our app had to be non-controversial, insightful, and straightforward.
- *Exercise:* Our user research showed that exercise can boost mental health immensely. We decided to add this category by implementing a step-by-step guide to do exercises.
- *Movies/TV shows:* Watching movies and TV shows is a common way to cope with stress especially in younger generations. We decided to incorporate this category by providing the user with movie and TV shows suggestions that can help boost mental health of the user.
- *Other Features:* Alongside our categories, the features that we decided to implement were a “mood-check page” that could allow personalized suggestions to users, a “talk to professional” feature in case users needed additional help, a “favorites” section to save favorite content, and a “feedback” section.

With these features in mind, we designed sketches for an app and integrated scenarios and storyboards. These scenarios and storyboards highlighted the contexts in which the app could potentially be used. Keeping the categories in mind, we designed a paper prototype where we asked users to test the prototype based on the scenarios. The paper prototype is a low-fi prototype that allowed us to test the faults and features of our design so that they could easily be changed if need be, before the final hi-fi prototype was made.

4.3 The Low-Fi Paper Prototype

The screens prepared in the low-fi prototype were of a homepage, a sign-up page, an explore and mood check page, a questionnaire page, a recommended content page, a categories page, a music category homepage, a music player, a movie category homepage, a movie trailer player, an exercise category page, an exercise description page, a religion page, a religious content description page, a talk to a professional page, a sidebar, a helpline page, a reminder setup page, a favorites page, and a feedback page. Additionally, the navigation throughout the app was made easy with the help of a sidebar, back button, icons, and a bottom bar that included the explore, the mood check, and the favorites options. All of these screens were drawn on paper using a pencil and were, therefore, easily changeable if need be.

With the paper prototype ready, we tested the prototype. The prototype was tested on six people with 36 screens. Each test took about 1-3 minutes. These tests helped identify certain problems in our design, like the testers confused the ‘Explore’ and ‘Favorite’ buttons to be ‘Search’ and ‘Like,’ respectively. Additionally, navigation to the homepage, explore, and mood check with the help of sidebar and back buttons needed improvement. Moreover, improved labeling of some of the icons was recommended. Lastly, a dislike button was recommended by some of the users regarding the content they were presented with.

With these changes required for our design in mind, we moved on to designing our Hi-Fi prototype.

5 Development of Hi-Fi Prototype

The prototype of this application was developed while keeping into consideration the needs and requirements of our target audience and was based on the already established design heuristic guidelines. Our team used Figma to design this prototype. Figma is a collaborative interface design tool that uses vector graphics to make designs and prototypes with high quality UX and UI features. The prototype aimed to provide an accessible and easy-to-navigate application that aids the user in finding the relevant content that works best for them. The findings acquired from the user research phase and paper prototype testing were directly translated into features of the application. The application not only aims to induce a positive mood in the user through its interface but also to maximize ease of use through simplicity and appropriate mapping. The color scheme is designed to induce a sense of serenity and is incorporated into the overall minimalistic theme, while the content is divided into appropriate categories through a well-structured system of hierarchy.

5.1 Features

- *Sign in (Optional):* The user is given the option to create an account/sign in to the application. This allows the app to save the user's basic information, like name, phone number, and email, along with the user’s preferences and suggestions. However, this feature is made optional to minimize obstruction for the user and provide immediate access to the app's content.

- *Mood check/Explore:* The main screen of the app displays buttons labeled Mood check/Explore. The mood check option assesses the user’s current mood and suggests content that can potentially uplift the user’s mood. If the user already knows what kind of

content works best for them, they have the option to bypass this check and directly explore the app's contents.

- *AI learning:* The user can mark the content that they like as ‘favorites.’ This content can then be accessed directly from the favorites tab. The content added to favorites is also used by the app to make better-suited content suggestions. Similarly, the users content preferences/watch time and frequency of use are noted by the app and are used to suggest similar content.

- *Content categories:* The content of the app is divided into four categories: Music, Movies/Tv shows, Religious content, exercises. These categories have been shortlisted as the most effective methods to induce mood states through our literature reviews and user research. The user will have access to a vast library of content that slowly adapts to the user’s use patterns and gives a personalized experience. The diversity in the provided categories aims to cater for a wide variety of audiences with varying preferences.

- *Connect with a professional:* While this is primarily a mood-enhancing application, it still falls under the category of a mental health app. Therefore, people suffering from mental illnesses may also end up using it. To cater to such people, the app’s ‘connect to a professional’ feature provides the user with a reliable list of professionals. Ratings and reviews are maintained to aid the user in choosing a professional best suited for them.

- *Scheduled motivational quote:* The user can schedule a time to be shown a motivational quote through pop-up notifications, whether it's for starting the day strong, ending it on a good note, or to get a mindset boost anytime in between.

The prototype incorporates design heuristics from *material.io* – a UI/UX design online guide - to maximize usability. These can be seen in the various elements of the app's design, including the bottom bar, top bar, sidebar, buttons, cards, typography, color scheme, etc. Since the app combines the features provided separately in already existing apps, inspiration was taken from such apps in the design process. This aids the user by matching the user's pre-learned mental models. Being a prototype, the app does not have the full library of content that it intends to provide in the final product; instead, the app uses vertical prototyping by showing a smaller set of content, which are enough to showcase the intended functionality of the product.

6 Usability Testing

6.1 Purpose and objectives

The purpose of the test was to test the functionality of our prototype. The test would not determine whether users feel relaxed by the content of the app, but rather tested how they would use the app. The app follows a framework that is similar to other apps, and therefore, we assumed that users would have mental models about certain features in the prototype. We designed scenarios and tasks that tested how the users would use buttons and navigate the prototype, which helped us determine what difficulties users could face. Our objectives that were tested were: System Efficiency, User Experience, and Errors.

All of these objectives were analyzed through qualitative and quantitative results. Additionally, observation of recorded tests also helped identify errors and mistakes in the prototype.

6.2 Scenarios and tasks

In order to test the maximum number of features of the application, the team designed a task book: a document that contained scenarios accompanied by tasks that the user could execute with the help of the context provided by the scenarios. We started our test by explaining to the participants the purpose of our application and how it aims to decrease the stress they face in their day to day life. We came up with 3 scenarios and tested them with a total of 15 participants. These scenarios had a varying number of tasks.

6.3 Test Procedure

The people on whom we did testing were divided into two categories: one of young adults between the ages of 18 and 25, second of adults above 30. Most of the testing was done in person, with a few tests being conducted on zoom. Since we chose people that were most easily available to us, our testing was based on convenience sampling. As we were limited by not having a usability testing lab, we conducted our tests in environments where users were most likely to use the app. These areas included the Lahore University of Management Science (LUMS) Khoka (sitting area for students on campus), LUMS Computer Science department lounge, and home environments for adults above 30. Our tests were divided into three phases: Pre-test, Testing, and Post-Test.

6.3.1 Pre-Test:

When a user was approached, we first asked about whether or not they could spare some time for the test by explaining what the purpose of the test was. If they agreed to the test, they were briefed about the form of testing and were asked to fill a pre-test questionnaire. This questionnaire gave us basic information about the user, like their name and consent to be recorded for the test. They were then given information about the app and were explained about some limitations of the prototype, like dummy text and certain information being pre-added as an assumption in the app. They were then asked to sit down in the environment and were given a task-book for the test. Lastly, before beginning the test, they were reminded that the prototype was being tested and not them.

6.3.2 Testing:

The task book provided information about the steps that a user needed to take when using the prototype. Different users were given different task books randomly to test the maximum number of features. As we were limited by not having proper recording equipment, one member from our team stood behind a user, holding a camera and recording the test. The rest of our team members went away from the test area. For zoom tests, the test was screen-shared by the user and recorded. Users were shown the prototype on a laptop as the prototype was not functional on any of our team member’s phones. During the test, users were requested to think out loud and to navigate the prototype as they felt best, using the task book. Once the users felt that they had explored the tasks, they were encouraged to end the test at their convenience.

6.3.3 Post-Test:

Following the test, users were given a post-test questionnaire. All of our team members moved away from the test area so that users could easily fill out the form without being put under pressure. This form provided feedback into a user's experience. After filling out the form, the users were encouraged to share feedback that they may not have been able to write in the form. The feedback was then written down in our notebooks. Once all feedback had been received, the users were thanked for their participation.

6.4 Test Results

The usability testing showed that "Haal Chaal" has a potential scope for our end users. The concept of the app was generally appreciated by the users on whom we did the testing. The simple and aesthetically pleasing UI was one of the most liked things about our app. Other than that people also loved the idea of all different de-stressing mechanisms being present at one place. However, many areas with room for improvement were discovered as well. These are discussed below.

6.4.1 Issues and problems:

- Three users pointed out that the back button on the right made navigation a little difficult as back buttons are typically on the left. It is also important to point out that as the majority of our tests were not conducted on a mobile phone device, the number of people who had an issue with the back button could increase or decrease depending on their mental models. This was a conundrum that we faced while making the prototype, as the sidebar icon is also mostly found on the top left. In our research for the prototype, we realized that more apps have back buttons on the right than sidebar icons on the right. Therefore, we hoped that the majority of people could get used to this in our prototype, which was the case as the back button did not bother the majority of our testers.

- One user pointed out that they would like a logout feature in the app. A logout feature is important whenever there is a signup feature to make an account, and our app lacked this feature.

- From our own observation of the recorded videos, we realized that some testers thought the genre information in the "Movies and Tv shows" section was actually clickable buttons. This is because they resembled the design that we had for our buttons throughout the app. Therefore, there should be a difference in highlighting these genres so that they do not resemble buttons.

- Another issue that we noted from our observation was that users did not realize that the music and movies categories allow horizontal scrolling. Therefore, to counter this problem, introducing small navigation arrows on each side of scrollable areas should help.

- One user pointed out that they would like *the "Option to open up the original sources of the videos or texts. Since I explored the religion option, it would have been nice to see where the verses translation had been taken from and whose translation had been*

provided" [Anonymous 4]. It is therefore important to highlight the source to avoid controversy.

- Another user commented that *"When you are anxious, and it recommends you music and Quran side by side" [Anonymous 14]."* This was a controversy that we expected some users to have a problem with. However, as our app aims to cater to the majority of different audiences, we decided to keep both categories so that the user can choose what suits them.

- In the post-test discussion, one of the users pointed out that they had a problem figuring out which page they were on from the bottom bar. They suggested highlighting the bottom bar page that was currently suggested to counter this problem.

- In another post-test discussion, a user pointed out that the exercise main screen seemed blank, and suggested adding visuals to make it more appealing.

- One user also felt that only six options in the mood check section were very limited, and, therefore, there should be more options or a questionnaire.

Therefore, all of the results provide valuable insight into improving the functionality of the app and its features.

6.4.2 Positive Insights and Results:

- From our observation of the recorded videos, we realized that people easily understood what the mood check and explore buttons meant in the bottom bar. Therefore, these new icons and symbols were easily understood.

- In the post-test questionnaire, many users pointed out that they liked the simple UI design and color scheme of the app. As one of the users summarized, *"the options are pretty much obvious, which makes it easy to execute a specific task" [Anonymous 8].*

- Quite a few users also pointed out that they really liked the religion feature and the options that it offered.

- In one post-test discussion, a user pointed out that the popups like "thank you for your response" were really important in receiving feedback in the app and were therefore appreciated.

- In another post-test discussion, a user pointed out that they loved the variety of professionals' contacts that were present in the app.

- Generally, most users found the prototype very easy to navigate. Additionally, all tasks were completed and very little help was required by the testers.

7 Conclusion

Our results show that the "Haal Chaal" app is mostly liked by the people on whom we did our tests. People found it to be useful, easy to navigate, and aesthetically pleasing. The app shows quite a lot of potential because all users are able to appreciate the efforts "Haal Chaal" makes to

increase their wellbeing. Moreover, most of the users found the app to be well-designed as well. Moreover, the selected categories of Music, Religion, Movies, and Exercise, have all been proved to have effective and positive results on a person's mood.

However, in our usability testing phase, we were limited by certain factors. These factors included the lack of a proper testing facility and a limited amount of testing time. Moreover, since what we have worked on is a mental health app, it is not possible to conclude the effectiveness of our project immediately. This means that concluding that our app will be successful is not possible because it takes some time for a person to destress themselves after using some medium. Therefore, we could only predict whether the users would benefit from our app in the long run or not. In person answers or answers from the surveys saying that this app would prove effective are just predictions. Additionally, most of our testing was done on personal laptops instead of mobile phones due to scaling problems with the prototype on mobile phones. Undoubtedly, the experience of using an app on a laptop greatly differs from that on a mobile phone. Hence, this also created a different user experience for many of the users. Therefore, keeping these limitations in mind, and the results of the usability testing, there is still room for improvement in the prototype.

All in all, the Haal Chaal app's simple UI and design makes it easy for users to navigate the app and understand the functionality of the app. However, these insights only provide value about the functionality of the app. At its core, "Haal Chaal" is an app that aims to destress individuals from their daily problems. To test how successful the app is in achieving that goal, additional testing would be required over a longer time period with further tests and changes in implementation and design.

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