UI/UX Design Based Mental Health Application Using Design Thinking Method

Alfi Kurinita Widianti[1], Ike Ramadhan[2], Farzana Mumtazah[3], Hendra Maulana[4*]

[1,2,3,4] **Department of Digital Business, Faculty of Computer Sains,**

University of Pembangunan Nasional Veteran Jawa Timur, Surabaya, Indonesia.

*Email:

hendra.maulana.if@upnjatim.ac.id

Abstract. Mental health is an increasingly critical global issue; however, access to mental health support services is often limited. Using the Design Thinking method, which consists of five stages: empathize, define, ideate, prototype, and test. This research focuses on identifying user needs and applying design principles that support effective and efficient user interactions with the application. The research results include an initial design of an application that prioritizes user experience through design elements such as intuitive navigation, calming aesthetics, and easy access to support features like counseling, emotion journaling, and online communities. Prototype testing shows that applying the Design Thinking method in the UI/UX of mental health applications can enhance user satisfaction and comfort, as well as facilitate user access to psychological support. In conclusion, this web-based mental health application design can serve as an alternative that supports mental health through a more inclusive and accessible approach.

Keywords: design thinking, ui/ux, mental health, prototype

Introduction

The aim of developing a mental health application is to make it easier for someone who wants to consult regarding their problems. If you look at it from an empathy and opportunity perspective, mental health consultation institutions in Indonesia are still limited, so developing this application could be an effective and efficient solution. Design thinking is really needed in developing this application so that the UI/UX is user friendly. According to Tim Brown, CEO of IDEO, "Empathy is at the heart of human-centered design." (Brown, 2023).

The main focus of this research is to explain UI/UX design for mental health applications using the design thinking method. Suicide occurs throughout the life span and is the third leading cause of death among the 15–29 year age group worldwide in 2021. Some of the main signs or indicators of mental health that can be assessed are emotional, physical, behavioral and psychological (Dr. Nabila Viera Yovita: 2020). Mental health is something that must be considered, talking about mental health of course we have to talk about alternatives in maintaining and dealing with mental health problems in each individual, because this is a unity of cause and effect that cannot be separated. Mental health itself refers to how each individual is able to adapt and interact with the surrounding environment, so that the individual will avoid mental health disorders.

In Indonesia, an alternative that is often used to maintain and treat mental health problems is to go to a psychology clinic or mental hospital. This method is considered the most common way to obtain

services that support mental health in Indonesia. In reality, Indonesia is still experiencing an increase in suicide cases due to victims experiencing mental health problems. In the national female crime data that has been processed by Kompas, it was recorded that since 2019/2023 suicide victims have increased drastically, in 2019 there were 230 cases, in 2020 there were 640 cases, in 2021 it fell to 620 but in 2023 it rose again to 1,226 case.

Although many mental health applications have been found as a solution to the problem of efficiency of direct consultations in psychologist clinics and mental hospitals. Mental health applications provide an alternative to consulting with a psychiatrist online so that they are easily accessible anywhere and do not need to come in person. However, in the end mental health platforms do not fully answer these problems, due to limited features, boring UI/UX design, and expensive consultation fees so they are rarely used by people who should need them.

Therefore, this research contains a discussion about developing a UI/UX design prototype for mental health applications to make it easier for users, namely people who need mental health support, to be able to consult anywhere and anytime. The concept of this application has two main users, namely storyteller and listener. Storytellers are users who need a story friend and need mental health support. Meanwhile, listeners are professionals from the mental health application team who come from backgrounds suitable for handling cases that require mental health support. This research uses the design thinking method to develop a UI/UX design prototype which has 5 stages, namely empathizing, defining, idealizing, making a prototype, and testing a prototype. While in the testing stage, the author used the System Usability Scale (SUS) method which focuses on the level of effectiveness, efficiency and user satisfaction with the UI/UX design prototype.

Methods

The design thinking method is a method that contains a repetitive process with stages that aim to identify problems and solutions for users from a certain point of view, so that it brings up the author's innovative ideas and solutions through prototypes and hypothesis testing. Design thinking is divided into several stages, as follows.

2.1. Empathize

This stage is an effort to gain in-depth understanding of users so that the author better understands user needs and challenges. Afterwards, the author is expected to know about the motivations, needs, and daily activities carried out by the user. The knowledge that is very necessary at this stage is the science of psychology, one way of obtaining which is by interviewing users.

2.2. Define

The definition stage will determine the problems to be solved based on the results of user research. At this stage, the author also determines the focus of developing a UI/UX design prototype on an application without eliminating the characteristics of the application product.

2.3. Idiate

The author will create innovative ideas in the form of a list of ideas that take into account assumptions, then the idea will be developed into a mockup that is made very carefully, then developed further into an application prototype.

2.4. Prototype

The prototype stage is the stage of realizing the chosen idea into a prototype in which interactions are added, and then the final result is a real prototype.

2.5. Test

The final result in the form of a real prototype is tested on several user samples. Then, the user's experience and reality in using the real prototype will provide input. To update the product that will be made from user experience in using the prototype, input will be obtained to make a better product and make improvements to the existing product.
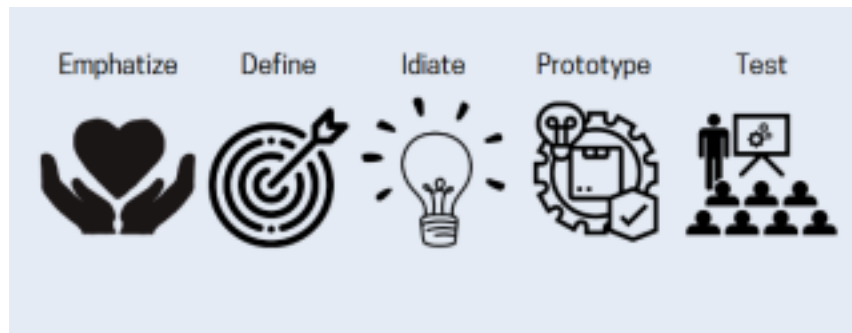

Figure 1. Stages in the Design Thinking Method (Nasution & Nusa, 2021)

Result and Discussion

3.1 Empathize

At this empathy stage, it can be assumed that even though many mental health applications have been found that are not sufficient to answer these problems, several things that cause this to happen include, limited features in these applications, UI/UX designs that are not user friendly and boring, and expensive consultation fees, because most of the users are students although there are also the general public. The author has also conducted research on the target users of the application by conducting interviews. The author also found that users still have difficulty finding friends to tell stories, with an application that provides what they need at a relatively cheap price, has a UI/UX that is user friendly and does not boring.

3.2. Define

Define is the stage where the author can conclude the results of interviews with the target market. The results of the interviews obtained support the process of creating mental health applications that can solve existing problems, including making them user friendly. Meanwhile, the main problem is the general public, especially students, who need a place and friends to tell stories that are flexible and efficient and can be accessed anywhere and anytime with a user-friendly UI/UX, at a relatively cheap price.

3.3. Idiate

At the ideate stage, the existing idea can produce a solution to the problem in the form of a mental health application prototype that has an attractive UI/UX at a relatively cheap price. The prototype was created with a clear flow to make it easier for users to use.
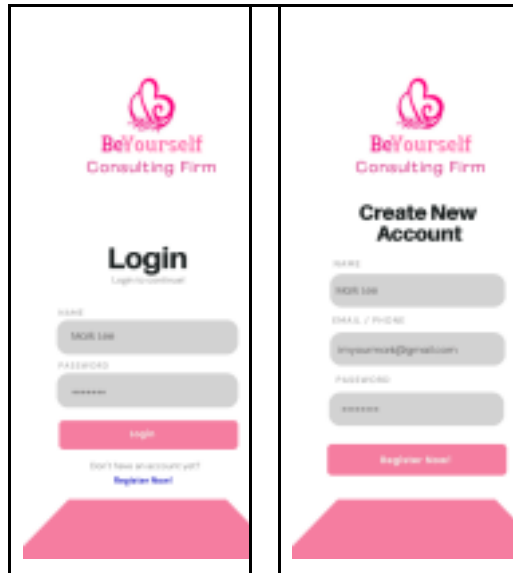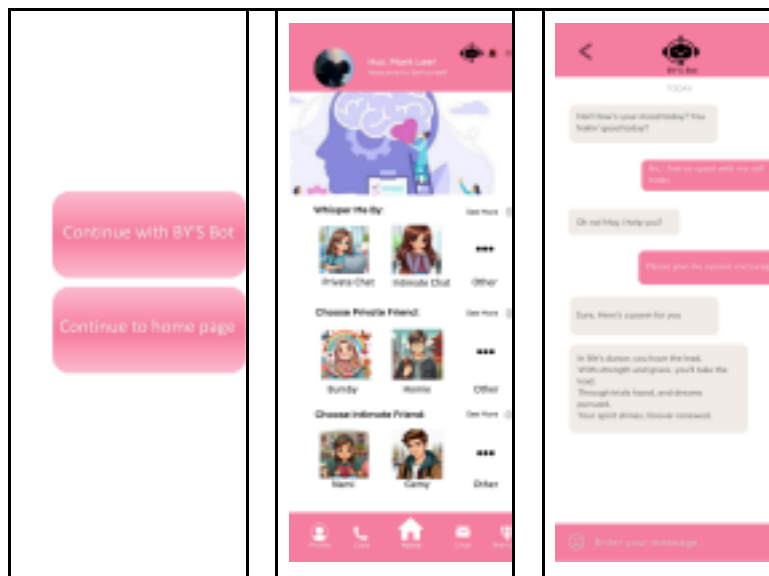
Figure 2. Login (left) & Register page (right)

Figure 3. Home Page (left) & Chat with By's Bot (right)
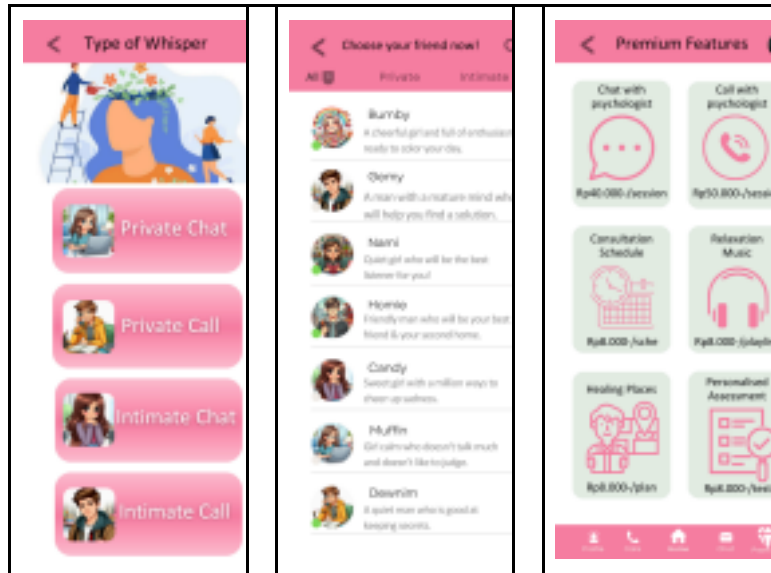
Figure 4. BeYourself service
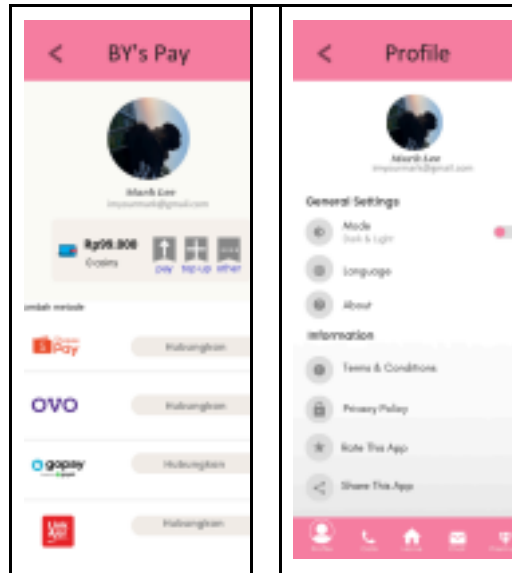

Figure 5. History Call

Figure 6. BY's Pay (left) & Profile (right)

3.4. Prototype

At the prototype stage, the author creates a real interactive prototype that can be clicked on via figma. Next, the author created a flowchart containing the sequence/flow of how to use the mental health application. Then the real prototype is used when testing with potential users.
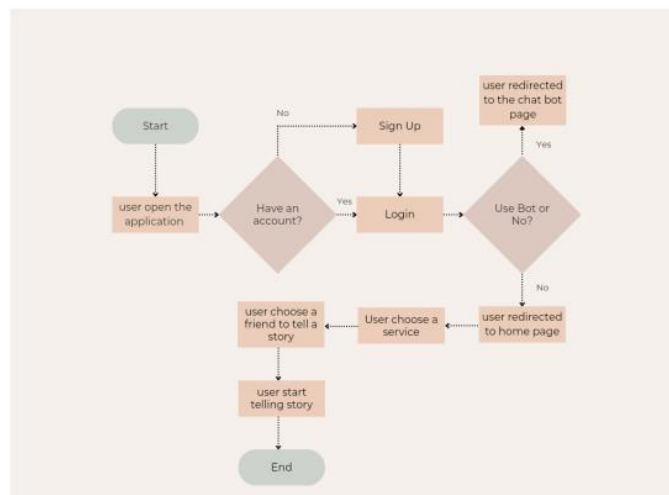

Figure 7. User Flowchart

The following is an explanation of the user flow which is broken down into login and register, choose and tell stories with friends

a. Login and registration

To use the features in the application, the thing that must be done by each user is to log into each account, if you don't have an account the user will be directed to the registration page to create an account shown

in figure 2.

b. Choose 2 options that will be accessed

After successfully logging in the user / user will be directed to the bot page which has 2 choices, the first choice is to talk to the bot or will enter the application homepage,

If the user chooses to continue with the bot then the page will automatically show the bot page, whereas if the user chooses to continue to the homepage then the user will be directed to the homepage.

c. Home

On this home page will be displayed your choice of storytelling friends and the types of services available in the BeYourself application. Each friend has been categorized, then the user can start telling stories according to the selected features.

3.5 Test

In the testing stage, the author carried out a usability test on the UI/UX design prototype of the mental health application. The author uses the System Usability Scale (SUS) method. The SUS testing method is in the form of a questionnaire containing 5 positive and 5 negative statements, then using a Likert scale to measure data with a range of 1-5. A value of 1 is interpreted as strongly disagree and a value of 5 is interpreted as strongly agree.

Table 1 : List of User Statements

No	User Statement
1.	I love using this mental health app
2.	This application turned out to be more complicated than imagined
3.	Very good app, not complicated at all!
4.	Technical support is very necessary in the operation of this application.
5.	After testing it, I felt the application system was very smooth and integrated
6.	I noticed some oddities in it
7.	I'm sure most people understand this application system quickly.
8.	This application is slow and takes a long time to process
9	While using this app, my self-confidence increased
10	There are many things that must be learned before I can use this application.

Respondents who participated in this questionnaire consisted of 5 people with student backgrounds, pregnant women, high school teenagers and the general public who could certainly represent users of this mental health application. The author has received answers from respondents, so the author will calculate the feedback. Using the following rules:

1. The point value for odd number user statements is calculated using the formula x – 1 (x is the value chosen by the respondent).
2. The point value for even numbered statements is calculated using the formula 5 – x
3. For Sub-score, it is an accumulation of points derived from each user statement multiplied by 2.5
4. The SUS score contains the average of the accumulated sub-scores that have been calculated previously

Table 2 contains the results of the questionnaire by 5 respondents (represented by R) and consists of 10 statements (represented by P).

Table 3 is the result of calculating the SUS score for the UI/UX design prototype mental health app.

Table 2 : The Result of the Questionnaire

Resp.	P1	P2	P3	P4 P5 P6 P7 P8 P9	P10	Point
R1	4	3	4	2 3 4 4 3 3	3	32
R2	4	2	4	4 4 3 3 4 4	4	36
R3	4	4	4	3 4 4 4 4 4	3	40
R4	3	4	4	3 4 4 4 4 4	4	40
R5	4	4	4	4 3 3 4 3 4	4	37

Table 3 : Calculating Scores

Resp.	Points Scores
R1	32* 2.5 80
R2	36* 2.5 90
R3	40* 2.5 100
R4	40* 2.5 100
R5	37* 2.5 92.5
	SUS Scores 92.5

The results of the SUS Score calculation are interpreted into the categories in Figure 8.
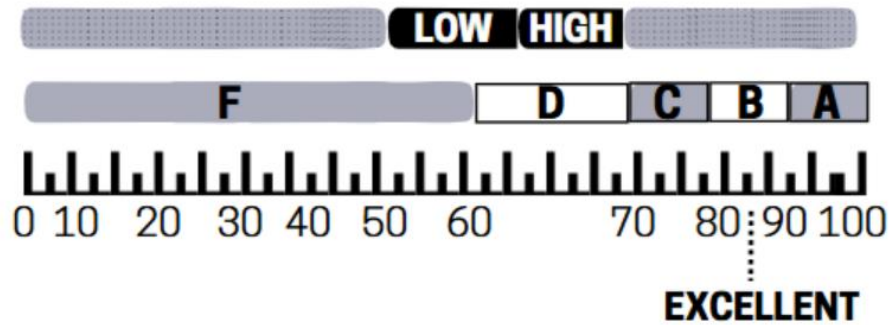
Figure 8 : SUS Scores Implementation

From the results of previously carried out calculations, an interpretation can be seen

SUS score in Figure 8. With a SUS score of 92.5, it can be concluded that the UI/UX design prototype from mental health applications are included in the very good category, which means the level of user satisfaction and implementation is high, very effective and efficient.

Conclusion

Based on the results of the research conducted, the design of mental health applications is used. The design thinking method is intended to create a design that is able to answer the needs of each user so that handling cases of mental health disorders is more effective and efficient for each individual. Selection of usability testing using the SUS method, resulting in a UI/UX design prototype of a mental health application with the SUS score is 92.5, which means it is effective and efficient and satisfies the user.

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