

DEVELOPMENT OF MENTAL HEALTH APPLICATION: DESIGN THINKING APPROACH

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Abstract

The growing demand for inclusive and accessible mental health services presents a global challenge, including in Indonesia. In response, Ibunda.id developed the WellMe application using the Design Thinking approach to understand user needs, design innovative solutions, and create an effective technology-based prototype. This study follows the five stages of Design Thinking: Empathize, define, ideate, prototype, and test. Customer Journey Mapping and Empathy Maps identified key challenges, including the absence of a mobile application, which limited user convenience: the define stage prioritized push notifications, educational content, and psychologist profiles with user reviews. Using 2x2 brainstorming, the ideation stage led to solutions such as multiplatform development with Flutter, video call integration, and interactive educational modules. Prototyping resulted in a mobile application tailored to user needs. Usability testing with the System Usability Scale (SUS) scored 81.5 ("excellent"), indicating high satisfaction. Desirability analysis highlighted appreciation for push notifications and personalized psychologist profiles. Viability showed strong engagement potential, with 100% of respondents favoring the app over the web platform. Feasibility analysis found 93.2% of developers endorsing Flutter for its efficiency and cost-effectiveness. This study contributes to design thinking literature on mental health applications. It provides a framework for user-centered technological innovations, supporting Ibunda.id in enhancing service accessibility and quality in Indonesia.

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The growing prevalence of psychological issues globally underscores the urgent need for inclusive and accessible mental health services. According to the World Health Organization (WHO), approximately 3.8% of the global population suffers from depression, with prevalence rates reaching 5% among adults (4% in men and 6% in women) and 5.7% among individuals over 60 years old. Globally, depression affects around 280 million people (IHME, 2023) and is approximately 50% more common in women than in men. Additionally, over 10% of women who are pregnant or have recently given birth experience depression (Woody et al., 2017). Suicide claims over 700,000 lives annually and ranks as the fourth leading cause of death among those aged 15–29 (WHO, 2024). In Indonesia, mental health challenges are further compounded by societal stigma and limited access to professional care services (Hartini et al., 2018).

With a significant prevalence of depression globally, similar challenges are manifested in the Indonesian context, where the mental health system faces various barriers. Ayuningtyas et al.'s study mentions that in Indonesia, the prevalence of severe mental disorders is estimated at 1.7% of the population, with emotional mental disorders exhibiting symptoms of depression and anxiety reaching around 6%. Furthermore, the study highlighted the persistent stigma and discrimination against individuals with mental disorders, who are often subjected to mistreatment such as confinement. This suggests that in addition to challenges in the prevalence of these conditions, there are also significant barriers to access to comprehensive and human rights-minded mental health services. Amidst efforts to increase awareness and services, concrete steps are still needed to ensure that promotive, preventive, curative, and rehabilitative approaches are effectively integrated into Indonesia's health system (Ayuningtyas et al., 2018).

As technology evolves, telemedicine has become an innovative solution for facilitating access to healthcare, including mental health. Telemedicine enables remote consultations with medical or healthcare professionals without face-to-face meetings. This provides easy access and reduces geographical barriers, often a significant obstacle to obtaining adequate healthcare.

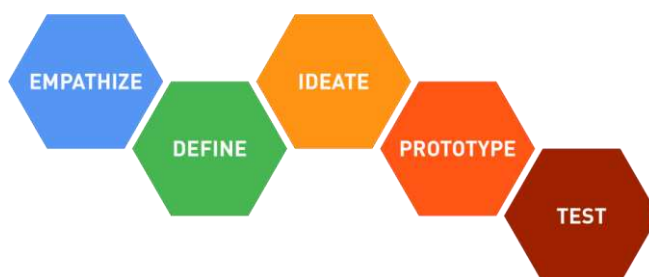
Ibunda.id is a startup in South Jakarta that provides online psychoeducation and counselling services. The platform is designed as a first port of call for those who are in need but have difficulty finding trusted people, such as counsellors or psychologists. Although online counselling is not the primary way to do counselling, Ibunda.id offers professional counselling services, both free and paid. The establishment of Ibunda.id was based on the need for a medium that provides online-based psychoeducation and sharing services, which are in high demand by the community. Initially, the platform only acted as a facilitator without the involvement of professional counsellors or psychologists. Still, its services and facilities have grown and now involve counsellors or psychologists active in online and offline counselling sessions (Bastomi et al., 2022).

WellMe, as part of the Ibunda.id ecosystem, is an initiative to address these challenges by providing personal counselling services that can be accessed through the website. However, given the high penetration of smartphones in Indonesia (Statista, 2024) and users' preference for mobile accessibility, developing a mobile application is the next strategic step. With a mobile application, WellMe has the potential to expand its reach and increase user convenience in accessing mental health services. In the context of the WellMe mental health application development by Ibunda.id, several research questions underlie this study:

1. What are users' primary needs and challenges when accessing WellMe by Ibunda?
2. How can a mobile application for WellMe by Ibunda be designed to address these challenges?

Brown's design thinking method is a methodology within the scope of innovation and problem-solving characterized by its human-centered approach. It does not focus solely on the product's or solution's aesthetics but on profoundly understanding users and their needs. In this study, researchers used the design thinking process, emphasizing five key stages: empathy, definition, ideation, prototyping, and testing. These stages are iterative cycles that allow the team to re-engage in the 'inspiration' and 'ideation' spaces to develop and refine ideas based on direct feedback from users. This process results in a more mature solution that meets the real needs of users (Brown, 2008). The design thinking process can be seen in Figure 1.

Figure 1.
Design Thinking
Methods



Source: stanford.edu

Although the use of telemedicine for mental health services continues to grow, there remains a lack of research that explores how user-centered approaches—such as design thinking—can be applied in developing mental health applications, particularly in the Indonesian context. Most studies still emphasize service effectiveness or technical aspects, with limited attention to users' real experiences and cultural needs.

This study aims to identify users' needs and challenges in accessing WellMe by Ibunda, and to design a mobile application prototype using the design thinking approach to improve access and user experience in mental health services.

Emphasize Phase

Empathy mapping describes how designers use various methods to collect and analyze in-depth user data. These methods include interviews, observations, and workshops facilitating direct user interaction. The result is a richer understanding that guides the creative process in developing resonant and impactful user solutions. Empathy helps designers gain a greater appreciation and insight into users' expressive and physical desires and how they perceive, realize, and collaborate with the world around them (Siricharoen, 2021).

Define Phase

The Define phase allows the team to translate observations into actionable needs and clear problem statements. In the context of the research conducted by Bender-Salazar, the approach taken to define the problem involves incorporating systems theory and organizational learning to form a deep understanding of complex problems. The research emphasizes the importance of reinforcing the Define stage with systematic and reflective thinking tools to ensure that all aspects of the problem are thoroughly considered. This enables the team to identify the symptoms of a problem and its root causes, which is crucial in dealing with complex or 'wicked problems' (Bender-Salazar, 2023).

Ideate Phase

The ideation process, usually conducted in groups, aims to optimize creative cognitive processes and structure activities to maximize the non-obvious challenges of idea development. It is a conceptual activity that relies heavily on social actors and physiological factors (Knight et al., 2019). The ideation process in design thinking is a crucial phase in which creative and innovative solution ideas are generated to address a defined problem. This stage is described using a visual thinking framework that involves 'Imagining' as the main activity. New ideas are generated in this phase, and existing solutions are transformed or retained. This process requires creativity in generating diverse ideas and cognitive skills to maintain and develop them to be further processed in the subsequent drawing and seeing stages. This reflects the iterative and interactive nature of design thinking, where ideation is central to creating effective and innovative solutions to solving complex problems (Kim & Park, 2021).

Prototype Phase

Prototyping in the context of design thinking helps ensure that product development takes place iteratively and that users are actively involved in the design process. In contrast to prototype types traditionally considered functionality verification tools, their role in Design Thinking is in the exploration and problem-solving phases, with a particular focus on the early stages (Elverum et al., 2016).

Test Phase

The testing stage of Design Thinking is a critical stage where the design that has been developed is tested to ensure that the solution meets the needs of end users. Prototypes created are tested at this stage to make improvements (Schallmo et al., 2018). One method often used in usability testing is the System Usability Scale (SUS), developed by John Brooke in 1986. The SUS consists of 10 statements rated using a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree." The method is simple yet capable of providing a clear and reliable picture of users' subjective perceptions of a system or product (Brooke, 1996).

The Design Thinking methodology takes a holistic, human-centered approach to innovation through five key stages: empathize, define, ideate, prototype, and test. It integrates continuous user feedback to refine products or services, combining deep user understanding with practical techniques. This approach helps organizations create impactful products and foster a culture of innovation. By applying Design Thinking to the development of the WellMe mobile app, this research aims to provide actionable recommendations for Ibunda.id while contributing to the academic discourse on digital mental health and technological innovation.

The discussion of the literature review in this research is as follows: The use of Design Thinking methods in developing digital products, such as the WellMe app, brings a user-centered approach to the design process. Design Thinking involves five stages: empathy, problem definition, ideation, prototyping, and testing. The empathy phase allows developers to understand the user's experience and emotions, while the definition phase leads to determining the problem that needs solving. Ideation opens space for creative thinking in search of solutions, and prototyping and testing ensure the design is repeatedly refined based on honest user feedback (Coziah et al., 2022).

Research conducted by Kajia Coziah et al. (2022) focused on the development of a digital mental health application (mHealth app) designed to manage cravings associated with Opioid Use Disorder (OUD). The study employed qualitative interviews alongside heuristic evaluation methods, supplemented by quantitative analysis. Insights from the literature review and interviews emphasized the importance of evidence-based remote interventions tailored to an individual's recovery stage. Through a comprehensive literature review and collaboration with a licensed clinical psychologist, cognitive behavioral therapy (CBT) videos and biofeedback breathing exercises were identified as effective strategies for managing OUD-related cravings. These evidence-based features were incorporated into a high-fidelity prototype, guided by the literature's findings, the target population's needs, and results from heuristic evaluations.

Research by Reem Sultan and Fetama Qaed (2020) highlights how service design and design thinking can support designers in developing holistic designs. These designs are achieved by navigating the iterative, non-linear stages of the design thinking process—empathy, definition, ideation, prototyping, and testing. This approach encourages designers to consider various user-related aspects while integrating principles of design sustainability. Sustainability in design arises when creations are viewed not as final outputs but as ongoing, iterative experiences that remain within the design thinking cycle. This perspective fosters both innovation and the long-term sustainability of design solutions.

According to previous research (Jeanne Liedtka, 2020), design thinking catalyzes the adoption of new technologies and stand-alone social technologies. It fosters more meaningful and strategically valuable innovation discussions, contributing to the development of dynamic capabilities. By addressing social and psychological barriers to innovation, design thinking enhances the ability to tackle critical objectives: empowering innovators at all levels to identify emerging opportunities, navigate cognitive biases, align stakeholders, and optimize resource transformation and reconfiguration. These outcomes are achieved through a series of established and widely recognized practices.

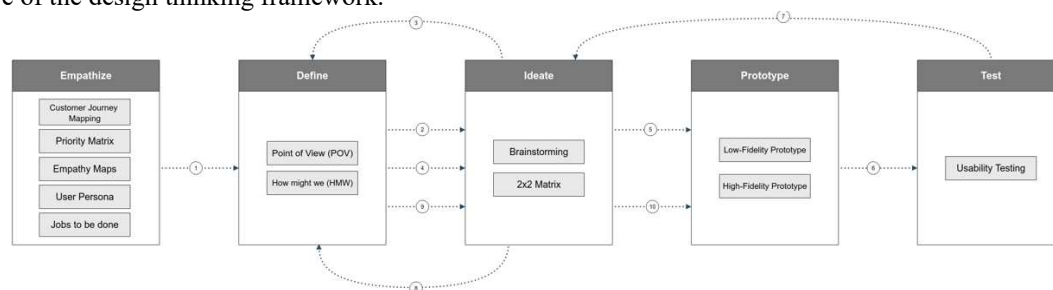
As highlighted by previous research (Sihem Ben Mahmoud-Jouini et al., 2016), design thinking models universally begin with identifying and understanding a problem or area needing improvement. This is followed by collaborative brainstorming to generate and test multiple potential solutions. Ultimately, these models converge on a specific solution, implemented and evaluated through practical application involving research and direct user feedback analysis. Over time, design thinking has evolved into a highly effective approach across diverse fields such as advertising, industrial design, environmental design, and medicine. Its systematic methodology offers a robust framework for use in healthcare design, helping to bridge communication and collaboration gaps between medical professionals and design teams, thereby improving patient outcomes. Integrating design thinking into the healthcare architecture design process alongside the CPS method makes it possible to discover more innovative solutions and gain deeper insights into challenges, ultimately enhancing healthcare delivery.

This study builds on previous research but focuses on applying Design Thinking through iterative user feedback to ensure the solution aligns with user needs. Emphasizing empathy and user understanding is key to delivering an effective application.

Figure 2.
Conceptual Model
of the Study

Theoretical and Conceptual Background

This study used the design thinking framework to form a series of solution stages. The Figure 2 is a picture of the design thinking framework.



Source: author

Design thinking is an innovation approach with a user-centered orientation to generate innovation in business models. The stages of design thinking consist of several phases, namely:

Empathize Phase

The empathize phase in Design Thinking involves a deep understanding of users and their problems through a very user-oriented approach. In this phase, several methods are used to compile and clarify data:

1. *Customer Journey Mapping* This method helps visualize the user experience from start to finish when interacting with a service or product. The focus is on identifying user pain points, needs, and emotions at each stage of their journey.
2. *Priority Matrix* This tool prioritizes user issues or needs based on their urgency and impact. The results guide the team in focusing solutions on the issues that are most important and have the most significant impact.
3. *Empathy Maps* Help teams understand what users think, feel, see, and do. This allows the team to capture the user's point of view more deeply and identify hidden needs.
4. *User Persona* is an accurate representation of the user and a fictitious inference of the overall representation of the user that describes their needs, goals, and behaviors. Persona helps the team keep the focus on who the actual users are during the design process.
5. *Jobs to Be Done* This approach identifies the tasks or jobs that users want to accomplish with the product or service. The focus is on understanding the user's end goal, not just the needed features.

Define Phase

The define phase in Design Thinking aims to crystallize an understanding of the user and the problem based on the insights gained in the empathize phase. In this phase, several methods are used to compile and clarify data:

1. *Point of View (POV)* designed to define the problem in a specific and focused manner, making it easier for the team to find relevant solutions.
2. *How Might We (HMW)* is an approach to formulating problems through open-ended questions that allow for exploring creative solutions. This format will enable teams to break down the challenge into smaller, actionable parts.

Ideate Phase

The ideate phase in Design Thinking explores creative solutions to problems clearly defined in the previous phase. Methods used in this stage include:

1. *Brainstorming*, is method sparks innovative ideas through sessions that encourage free participation from all team members without criticism. The team members in the Brainstorming stage were developers, the business development team, the UI/UX designer, and the marketing team from ibunda.id.
2. *2x2 Matrix*, is a matrix helps the team group ideas into four quadrants, focusing attention on solutions that make a significant impact with reasonable effort. This technique speeds up the decision-making process in a targeted manner.

Prototype Phase

The prototype phase in Design Thinking starts with developing an initial and iterative prototype. Methods used in this phase include:

1. *Low-Fidelity Prototypes*, method produces an early version of the product designed to test the basic functionality and structure of the design.
2. *High-Fidelity Prototypes*, method is used to develop more detailed and interactive prototypes, which represent the final version of the product after customization.

Prototype Phase

The test phase in Design Thinking is the stage where solutions are thoroughly tested to ensure they meet users' needs and expectations, with a primary focus on usability testing. Usability testing involves real users trying out the prototype in real-life scenarios, allowing researchers to observe user interactions and note any difficulties or issues.

This study's data collection method was semi-structured interviews for the empathize and testing phases. Semi-structured interviews were used during the empathize phase to enable the researcher to understand mental health app users' experiences, needs, and expectations. This method offers flexibility in deepening the answers from respondents while ensuring that all critical topics are covered, thus supporting the development of intense empathy and a thorough understanding of the problem users face. On the other hand, focused interviews were applied in the empathy stage to get specific and targeted feedback on the needs and functionalities of the app interface.

In these interviews, questions are designed to assess particular user interface aspects, drawing directly on established design thinking principles. This approach ensures that the app design evaluation can be conducted systematically and effectively, helping to identify and fix design issues before the final product launch. Based on this ideation, a low-fidelity prototype was developed and tested to determine design and usability issues. The results of this evaluation form the basis for the next iteration of the design, resulting in the development of a high-fidelity prototype that is more detailed and closer to the final product. This continuous evaluation allowed the team to refine and improve the design, leading to the discussion phase of the research results. In this phase, an in-depth analysis was conducted of the feedback received during the testing phase, assessing how it influenced the development of the prototype.

The research concludes by drafting a conclusion summary the main findings and effectiveness of the developed application, as well as suggestions for future research and further development, aiming to improve the application's functionality and usability to meet end-user needs more effectively. Through the interviews, the following process is to analyze the data by reviewing the notes and discussing any interesting trends or particular aspects that came to light during the interviews.

RESULT AND DISCUSSION

Empathize Phase

The Empathize stage utilized Customer Journey Mapping (CJM) to identify the user journey from awareness to retention. This process uncovered obstacles such as lack of promotion, mobile app limitations, and non-real-time notifications, which were then used as the basis for strategic solutions, such as broader digital campaigns and app development with real-time notifications. A deep understanding of the user journey, as described by (Patti et al., 2016), enables the design of better experiences to increase customer satisfaction. In addition, the use of Empathy Maps enriches insights into the emotional needs and challenges of stakeholders, such as psychologists, developers, UI/UX experts, and users.

This supports user-centered solutions, such as intuitive UI design and integration counselling services, in line with the views of (Brown, 2008), who emphasize empathy as a key element in creating innovative solutions. The integration of constraints into the priority matrix helps establish relevant strategic measures, such as the development of mobile applications and real-time notification features, for maximum impact on user experience. This matrix ensures resource efficiency and supports user loyalty, in line with the Service Design framework according to (Sangiorgi, 2011). The Jobs to Be Done (JTBD) approach strengthens the strategy by identifying user motivations and aligning them with relevant solutions, such as improving onboarding, adding educational content, and personalizing services. According to (Christensen et al., 2016), JTBD enables an in-depth understanding of user needs, resulting in tangible solutions. With a holistic approach, WellMe's development not only addresses technical challenges but also meets users' emotional and psychological needs in a sustainable manner.

Define Phase

In the define stage, the analysis from the empathize stage emphasized the importance of solutions that facilitate access and improve the user experience of mental health services. One of the main needs was to create a mobile application with a real-time push notification feature to ensure users get timely notifications, such as consultation schedules and service updates. A study conducted by (Olaniyi et al., 2022) showed that mobile health apps can improve the affordability of mental health services while maintaining user engagement. In addition, this stage highlights the need for mental health education through easily accessible content at any time, such as in-app articles and guides. According to (Suwanwong et al., 2024), mental health literacy is essential for individuals' well-being and empowers them to recognize and address mental needs and support others. The define stage also emphasizes the importance of service personalization to increase user convenience, such as providing psychologist profiles complete with reviews and specialties and additional features such as chat and video calls. According to (Sherman et al., 2013), the use of video chat can build a stronger bond in interaction compared to other media.

Based on the Point of View (POV) formulated, one of the How Might We (HMW) questions generated was: “How can we create a mobile application that facilitates quick and flexible access to consultation sessions?” With this approach, the development of WellMe by Ibunda.id is directed towards an application system that includes real-time notifications, educational content, detailed psychologist profiles, and online chat and video features to support a more comprehensive user experience.

Ideation Phase

The ideate stage is an important step in problem-solving, where the team generates a range of creative ideas as solutions. This process often uses the 2x2 brainstorming method, an idea mapping technique with a two-dimensional matrix to evaluate and prioritize the ideas generated based on the high value of both low and high effort. Brainstorming sessions lasting around three hours give participants the freedom to innovate without restriction, encouraging active participation (Brown, 2008). The results of ideation stage can be seen in Table 1.

No	Category	Ideas	Call to Action
1.	Facilitates access to consultation sessions quickly and flexibly	The brainstorming results generated several ideas, namely optimising the website for responsive display on mobile devices, rebuilding the website with single-page applications technology and a mobile-first approach, developing two mobile applications using native programming languages for Android and iOS, or alternatively using Flutter to create cross-platform applications with one code for Android, iOS, and Harmony OS. In addition, there is an option to replace Wellme's back-end programming language with Go to increase speed or keep using the existing PHP for the back-end.	The three high-value ideas were voted on, and the main focus was on mobile development. The back-end development idea was automatically selected.
2.	Notification push real-time	The brainstorming results generated several ideas, namely contacting users manually via email or WhatsApp, sending automatic notifications with direct integration to WhatsApp, sending automatic notifications via email, and integrating built-in notifications into existing web applications and mobile applications to be developed.	The two ideas with the highest scores were voted on, and the majority chose the use of built-in applications. This option was considered easier, more economical, and in line with the concept, allowing users to receive notifications without having to switch apps.
3.	Education Content	The brainstorming results produced several ideas, namely displaying mental health articles in the application, displaying educational videos related to mental health, providing PDF documents as a guide to using the application, and adding a Feature Discovery feature to help users understand application functions.	Of the three high-value ideas voted on, the most votes went to featuring mental health articles for education and adding a Feature Discovery feature to guide the app. Meanwhile, mental health education videos were also considered high-value but would require more effort to produce.
4.	Profile	The brainstorming results generated several ideas for displaying information about psychologists in the application, namely profile photos, explanations of specializations and topics mastered, introductory videos for prospective users, types of counselling services, reviews or testimonials from previous users, educational background, accumulated sessions that have been carried out, percentage of user satisfaction, and length of experience as a psychologist.	Conducting a vote on nine ideas that are of high value. Based on the ideas that emerged, brainstorming participants assumed that all ideas were chosen to be taken because all ideas already had data. From developer feedback, it was not difficult to implement.

Table 1.
Ideation Phase of
the study

No	Category	Ideas	Call to Action
5.	Chat and video call features	The brainstorming results produced several ideas for developing chat pages and video call features in the application, including easy access through navigation, the ability to upload documents and images, Voice Note support, reply chat, sending stickers or GIFs, and a video call feature that supports interaction between psychologists and users, both individually and in groups.	Of the 12 high-value ideas generated, the team decided to vote on ideas that required low effort but still met the overall need.

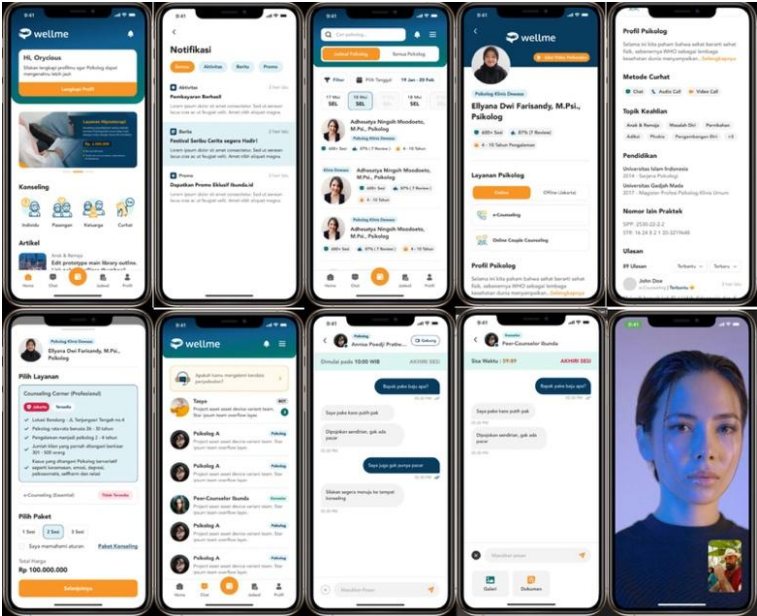
Source: Author

One example of a high-value idea was the development of a mobile application using Flutter. This cross-platform framework enables the development of multiplatform applications with a single codebase, thereby increasing productivity and development cost efficiency (Kurale & Bala, 2021). Results from the ideation stage are integrated into product development to ensure the resulting solutions are competitive in the market. For example, the WellMe by Ibunda.id app was designed with innovative features such as multiplatform support and increased backend speed through modern technology, reflecting a commitment to innovation relevant to user needs. This approach includes voting to select solutions that address user needs while appropriate to the organization's strategic vision, such as the simple and efficient built-in notification feature. With an organized ideation process, organizations can create innovative products that are highly competitive in the market (Osterwalder & Pigneur, 2010).

Prototype Phase

The prototyping process of mental health apps is divided into two stages, Low-Fidelity and High-Fidelity Prototyping, which support a human-centered approach according to design thinking theory (Brown, 2008). In the Low-Fidelity stage, an initial representation of the app was designed to identify key features such as activity and news notifications, mental health articles, psychologist profiles, counselling services, and chat features with video call integration. This prototype was tested through team discussions before being refined into a High-Fidelity Prototype, which offered a visual experience close to the final version. Research (Dam & Siang, 2024) confirms the importance of prototypes in evaluating and validating ideas, thereby reducing design risk and improving product quality. This iteration process allows WellMe by Ibunda.id app developers to effectively meet user needs and utilize technology to support people's mental health. The high-fidelity prototype can be seen in Figure 3.

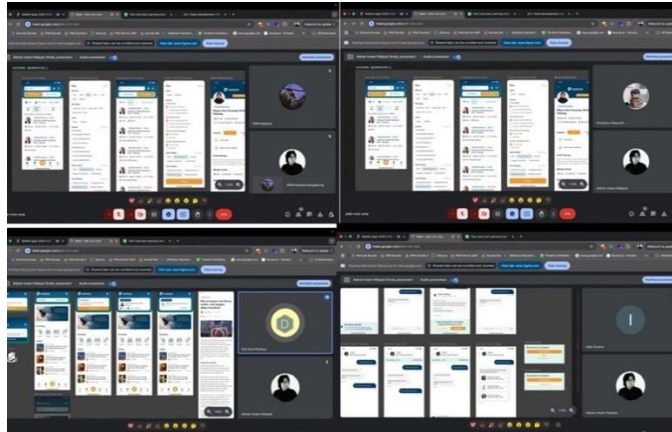
Figure 3.
High Fidelity
Prototype



Source: author

Testing Phase

The development of the WellMe by Ibunda.id mental health application with a design thinking approach showed a significant positive impact on user experience. The next step in this research is to test the prototype that has been designed. The testing process is done through usability testing of the prototype design in Figma. This testing involved five (5) resource persons from WellMe by ibunda.id users and three (3) resource persons from the internal ibunda.id team. Testing was carried out by conducting interviews with the resource persons, and then the researcher conveyed storytelling about the prototype while the users accessed the prototype from Figma themselves. The process carried out by the researcher is shown in Figure 4.



Source: author

Development of Mental Health Application: Design Thinking Approach

Figure 4.
Testing Phase

In the testing stage, based on usability testing using the System Usability Scale (SUS) method, researchers use three hypotheses: the Desire Hypothesis, the Viability Hypothesis, and the Feasibility Hypothesis. The results of the testing stage can be seen in Table 2.

No	Type	Question	Score				
			User 1	User 2	User 3	User 4	User 5
1	Positive	I feel that the mobile application offers more convenience.	5	5	5	5	5
2	Negative	I feel that the use of the application is less flexible because you have to install it first	1	2	1	2	2
3	Positive	I feel that having notifications on the application that are not on the website is very helpful for me	4	3	4	4	3
4	Negative	I feel less familiar with the appearance of the new application.	2	2	3	3	2
5	Positive	I can schedule more easily and quickly with the application.	5	5	5	5	5
6	Negative	I feel that the information displayed on the application is less informative.	3	2	3	3	1
7	Positive	I am immensely helped by the chat and video call features that are already integrated into the application.	5	5	5	5	5
8	Negative	Using the website without an application is enough to meet my needs.	2	1	1	2	2
9	Positive	The information on the psychologist's profile is complete and invaluable.	4	4	4	5	4
10	Positive	I feel that having educational articles is very helpful in increasing my insight	5	3	4	3	4
Score SUS			85	80	82,5	77,5	82,5

Source: author

Table 2.
Testing Result
Using System
Usability Scale
(SUS)

In Table 2 above, the Desirability hypothesis was tested, proposing that the mobile application offers greater ease of use due to several advantages over the website version. Based on interviews conducted using the System Usability Scale (SUS) method, the average score obtained was 82.5%, categorized as excellent. Meanwhile, in Table 3 below, five users were asked a set of questions to evaluate the Viability hypothesis, with the criterion that at least 60% of users perceive the application design as more modern and believe it will increase active user engagement. The viability questions can be seen in Table 3.

Table 3. Viability Hypothesis Questions	No	Question
	1	Do you think the availability of the WellMe app will lead to an increase in active users? Why do you think so?
	2	How often have you used WellMe services in the past? Do you find using the app easier compared to the website?
Source: author		

Based on the interview results, 100% of users agreed with the viability hypothesis, stating that the availability of a mobile app would increase user engagement due to its ease of use. The final hypothesis tested was the feasibility hypothesis, which examined whether developing the mobile app using Flutter could ensure efficient cross-platform development, particularly for Android and iOS. The related questions are presented in Table 4.

Table 4. Feasibility Hypothesis Questions	No	Question
	1	What are the main benefits of using Flutter in application development within your company?
	2	What are the primary challenges you have encountered or discussed with your team regarding Flutter?
	3	How does the speed of application development with Flutter compare to other technologies?
	4	What are your thoughts on Flutter’s efficiency in application development?
	5	In your opinion, is Flutter a viable long-term technology for the company?
	Source: author	

The feasibility hypothesis questions were then presented to three key informants from Ibunda.id, namely the Head of Growth, Project Manager, and Mobile Developer, yielding the following results:

- a. Question 1: 100% of respondents responded positively to the hypothesis.
- b. Question 2: 66% of respondents responded positively to the hypothesis.
- c. Question 3: 100% of respondents responded positively to the hypothesis.
- d. Question 4: 100% of respondents responded positively to the hypothesis.
- e. Question 5: 100% of respondents responded positively to the hypothesis.

As a result, the feasibility hypothesis testing yielded an overall positive response rate of 93.2%.

Contribution to User-Centered Digital Product Development

This study demonstrates how design thinking can enhance user-centered design by addressing not only technical needs but also users’ emotional and psychological contexts, especially in Indonesia. By using tools like Customer Journey Mapping, Empathy Maps, and JTBD, the project shows that successful digital health solutions require attention to both practical and emotional user experiences.

The collaborative, participatory approach—such as voting and multidisciplinary teamwork—helps align features with real user priorities, providing useful insights for user-centered development. Positive usability results and the effective use of cross-platform technology like Flutter further highlight the importance of blending user focus with innovation to create accessible and sustainable products.

CONCLUSION

This study was conducted to answer the question of how the design thinking approach can be applied to develop a user-centered WellMe application and improve their psychological well-being, so the results of the analysis in this study provide the following conclusions:

1. The design thinking method was employed to identify user problems with the WellMe by Ibunda.id application, starting with the empathize stage, which utilized Customer Journey Mapping and Empathy Maps. This process revealed several issues, including a lack of promotion, the absence of a mobile application, and limited notifications, which were prioritized in a Priority Matrix. The most significant problems identified were the lack of service personalization and navigation difficulties shared among all user interviewees. Consequently, a Point of View (POV) was developed, leading to insights that users desire a personalized, user-friendly application that facilitates quick and efficient access to counselling services, culminating in formulating the How Might We (HMW) question to guide the design process.
2. The ideate stage of the WellMe application involved brainstorming using the 2x2 brainstorming method, which helped evaluate and prioritize ideas. From this process, 20 ideas that aligned with user needs were selected. A prototype was then developed using Figma, incorporating these features, and usability testing was performed. The results showed a high level of agreement with the researcher's hypotheses, with 81.5% for the Desirability hypothesis, 100% for Viability, and 93% for Feasibility, indicating positive feedback on navigation and personalization features, as well as suggestions for improvements in the dashboard and user registration flow.

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