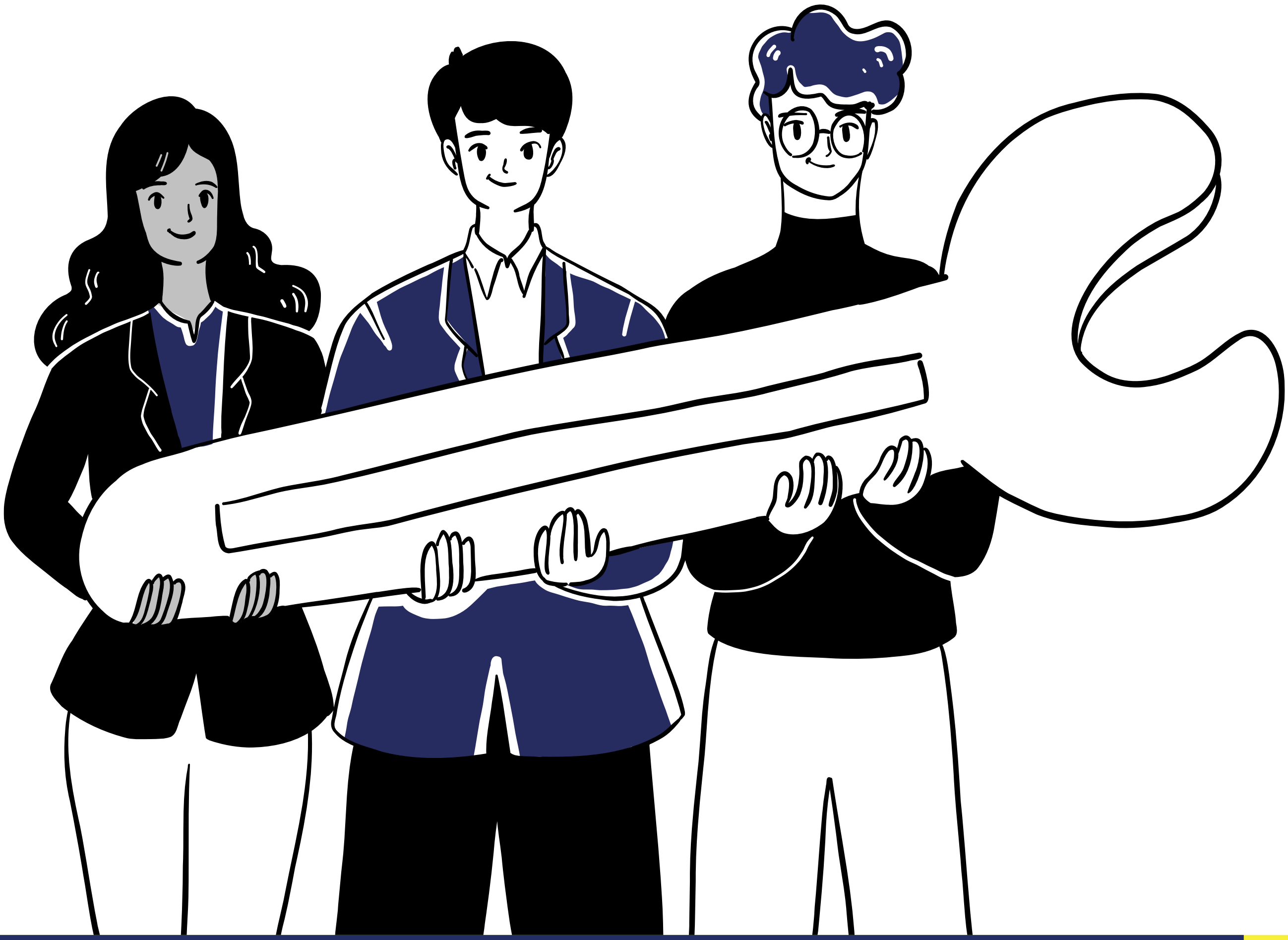
2025



Guidelines for user participation:

adapting digital mental health across borders

Interreg North Sea
Co-funded by the European Union

SUPER

ggz CENtraal
THOMAS MORE UNIVERSITY OF APPLIED SCIENCES
Centre for Digital Psychiatry

Foreword

In the last decade, mental health has finally gained the attention it deserves.
Still, even with this progress, barriers like stigma and long waiting lists prevent many from receiving the care they need. In a world where mental health struggles affect so many, it's heartbreaking to see that some are still left waiting.
Technology offers a new way forward — a potential bridge over these gaps.
But technology alone is not the solution.

We've learned that the key to success lies in involving the people who will use these solutions: the different stakeholders and intended users.
Their voices, experiences, and needs must be heard and respected in every step of the way. By actively participating, the intended users can help shape the technology that truly works for them, ensuring it meets their unique needs and challenges.

With this level of engagement, we build better digital mental health tools that align with social, cultural and economic factors that may influence successful adoption and create a sense of shared ownership and trust.

The guidelines set up during the SUPER project serves as a foundation for this participation. The steps presented are not meant to restrict but to guide. They provide a framework for respectful interaction and participation, ensuring every user feels safe and supported. When we follow them, we create a space where creativity and innovation can flourish.

These guidelines not only describe the 'how' of involving the intended users but also focus on ensuring these technologies work across borders by highlighting the importance of assessing different stakeholders' needs to ensure regionally and contextually appropriate solutions.

By adapting digital mental health to different cultural contexts, such as the Dutch Stress Autism Mate (SAM) and SAFE application, we can extend these benefits to a broader community. Together, through active participation and collaboration, we can help reshape mental health care for a brighter future.

Signed,
Yvette

The SUPER project (www.interregnorthsea.eu/super)

The SUPER project aims to ensure better digital tools for mental health care across Europe and a higher uptake of existing solutions.

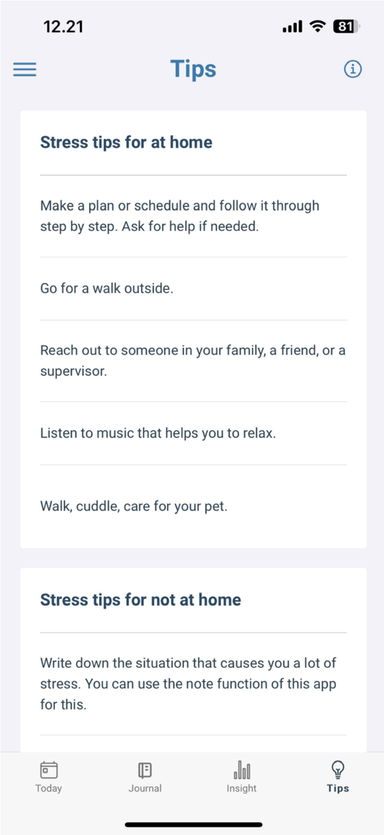
To accomplish this, our guidelines for user participation in digital mental health, targeted at digital mental health developers and mental health organisations, have been developed to aid the involvement of the intended users in the development, implementation, and adaption of digital tools.

The guidelines have been tested within the SUPER project by adapting two existing digital solutions to new markets (SAM and SAFE) and subsequently refined within the project.

The project is co-founded by Interreg North Sea.

The Stress Autism Mate app

The Stress Autism Mate (SAM) app was developed by GGZ Centraal in cooperation with the intended users, people with autism.
SAM is a personalized application that supports the self-management of the client with an autism spectrum disorder in dealing with the daily stress experienced.



Stress tips for at home

Make a plan or schedule and follow it through step by step. Ask for help if needed.

Go for a walk outside.

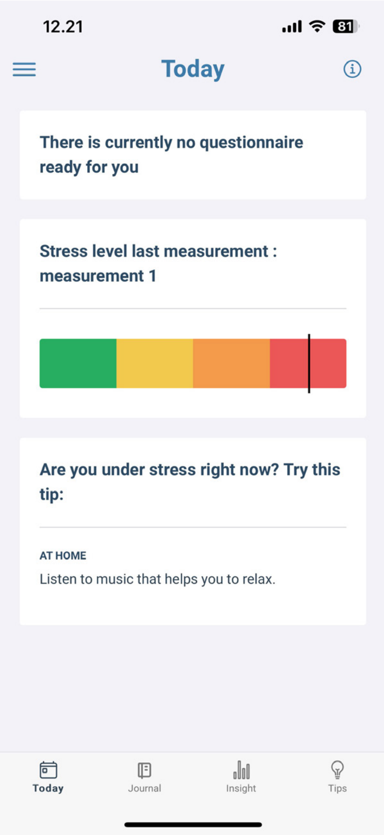
Reach out to someone in your family, a friend, or a supervisor.

Listen to music that helps you to relax.

Walk, cuddle, care for your pet.

Stress tips for not at home

Write down the situation that causes you a lot of stress. You can use the note function of this app for this.



There is currently no questionnaire ready for you

Stress level last measurement : measurement 1

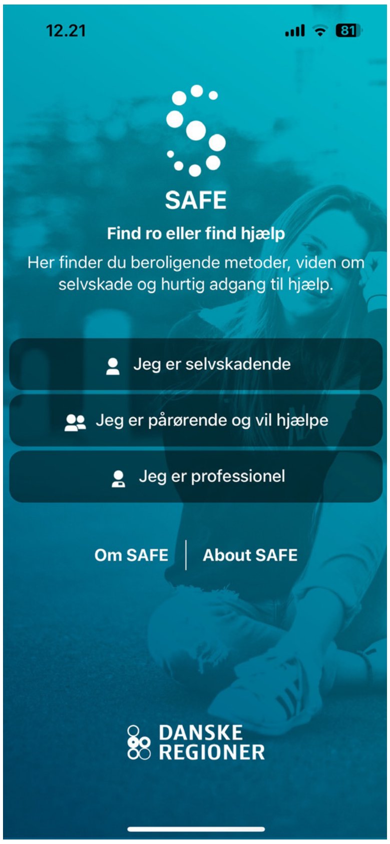
Are you under stress right now? Try this tip:

AT HOME

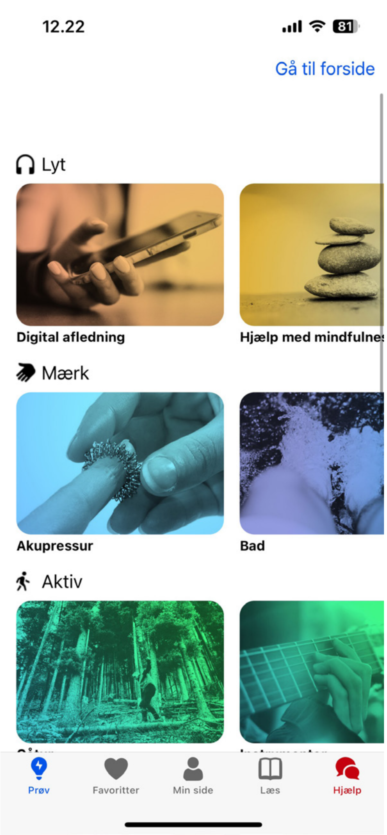
Listen to music that helps you to relax.

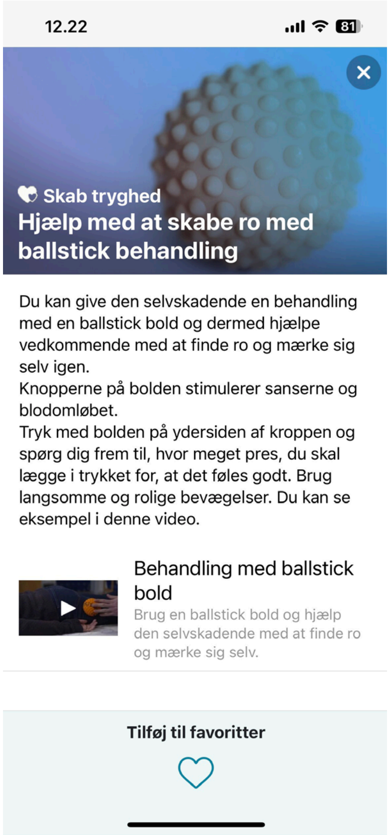
The SAFE app

The SAFE app has been developed in the Region of Zealand, Denmark. The app offers self-harm information and prevention guidance and has been co-created with input from patients, relatives, healthcare providers, and developers; it is designed to meet users' needs.



Her finder du beroligende metoder, viden om selvskade og hurtig adgang til hjælp.





Du kan give den selvskadende en behandling med en ballstick bold og dermed hjælpe vedkommende med at finde ro og mærke sig selv igen.
Knopperne på bolden stimulerer sanserne og blodomløbet.
Tryk med bolden på ydersiden af kroppen og spørg dig frem til, hvor meget pres, du skal lægge i trykket for, at det føles godt. Brug langsomme og rolige bevægelser. Du kan se eksempel i denne video.

Behandling med ballstick bold
Brug en ballstick bold og hjælp den selvskadende med at finde ro og mærke sig selv.

Acknowledgements

The following guidelines have been developed by the SUPER project team and optimised by relevant and insightful input and feedback from members of the SUPER project expert pool of over 60 individuals from across Europe.

Therefore, we want to thank them and express our gratitude for their time and efforts in enhancing these guidelines. In particular, we would like to thank Arina Van Domselaar (GGz Centraal), Christina Qvist (Region of Southern Denmark), Hanneke Kip (University of Twente), Hannes Jarke (EuroHealthNet), Hobbe Jan Hiemstra (ARQ), Joris Swaak (Panton), Katalin Vikuk (HekaVR), Kevin Jacobs (VindiQu), Kitty Ludovica Hiert (Super Family), Matt Birch (Queen's University Belfast), Nele De Witte (Thomas More), Vitalii Klymchuk (University of Luxembourg), and Roel Smolders (MEDVIA).

We would also like to thank Lene Lauge Berring (Region Zealand) for allowing us to use and adapt the SAFE app for our pilot test.

Table of contents

Introduction

Increased user participation in developing and adapting digital mental health solutions helps to tackle barriers and enhance facilitators for uptake of and engagement with digital mental health solutions [1].

These guidelines aims to aid this process of involving and empowering the intended users and provide a practical step-by-step guide to better understand and include them in a meaningful way. To do so, we will elaborate on the importance and concept of this participation. Then, we will present Design Thinking as a process framework, referring to methods you can use for user participation throughout the process.

To provide depth, the guidelines incorporate insights from transnational adaptations of two digital mental health solutions: the Stress Autism Mate (SAM) app and the SAFE app. These real-world examples highlight the challenges and successes encountered when scaling solutions across cultural contexts. Finally, we summarise our recommendations in concrete topics you should be aware of when working with user participation for digital mental health innovation in an international context.

Specific guidelines for digital mental health innovations (rather than technological innovations in general) can be justified by this sector's unique challenges. Mental health is complex and involves sensitive topics such as stigma, cultural views on mental illness, and variations in mental health literacy. In addition, the intended users are often vulnerable populations.

Regular guidelines addressing user participation might not sufficiently focus on these aspects.
Although best-practice recommendations on involving individuals with mental health conditions in the development of digital mental health solutions are available (e.g. [2]), these initiatives often lack a transnational perspective.

What is user participation?

User participation refers to the involvement of different people or groups in one or more stages of developing and implementing digital mental health services. These users can be a variety of stakeholders, such as patients and their relatives, mental health organisations, clinicians or developers.

There are several ways to involve different users, and we focus on three main approaches: user-centred design, participatory design (or co-design), and user innovation [3,4]. These approaches differ based on how much control and influence users have over the design and development process.

- **User-centred design is an interdisciplinary approach where users are involved to help designers better understand their needs and how they interact with the digital solution.**
  The process often includes gathering user input and improving the solution through repeated testing and evaluation with users [5].

- **Participatory design/Co-design: In this approach, users work more closely with the designers and developers, participating from the initial idea stage to final decision-making.**
  Users have more say in the process than in user-centred design [6].

- **User innovation refers to the process during which users themselves, either individuals or organisations, take the lead in creating new products or services. Instead of relying solely on designers or developers, users identify their needs and develop solutions that address them directly [7].**

User-centred design is the most often used method for involving users. The most common methods for user participation include focus groups, surveys, interviews, and various forms of user testing [8].

This is also the approach applied within the SUPER project, as we worked with two existing solutions, which limited the room for extensive changes and further development due to technical and financial restraints.

Why does user participation matter?

Involving the intended users (and other stakeholders) in developing digital mental health solutions ensures that the solution meets their needs and expectations.
User participation helps to empower your intended users, enhance cultural sensitivity, enrich ideas, increase acceptance of and engagement with these solutions, and even create a sense of community [1]. Moreover, users have a unique understanding of their needs and challenges. Accordingly, they can offer fresh ideas or suggestions you might not have thought otherwise.

By involving the intended users early on and throughout the process, you can gain valuable feedback and a deeper understanding of their everyday problems and the features and solutions they find most beneficial.

Furthermore, user participation can empower potentially vulnerable, stigmatised or hard-to-reach target groups. This is especially important in digital mental health, where stigma can be a significant barrier to seeking help. By deeply understanding users' concerns and perspectives, we can design more inclusive, effective, and supportive solutions that promote well-being and reduce stigma.

From a practical perspective, user participation also helps to spot potential issues before the solution is finalised, allowing you to make the necessary improvements or adaptations to ensure a better relevance and experience for the intended users. Ultimately, this could lead to a better implementation of your solution within a new context or market by addressing barriers and fostering facilitators early on in the innovation process.

When expanding a digital solution to a new country or context, user participation is essential to ensure you understand the intended users so you can adapt and test your solution within different markets and cultural contexts.

This also helps ensure the solution is relevant and effective in the specific context or market. While research is unclear on specific outcomes concerning uptake and efficacy, findings support the importance of user participation in tackling barriers and enhancing facilitators to uptake and engagement [1].

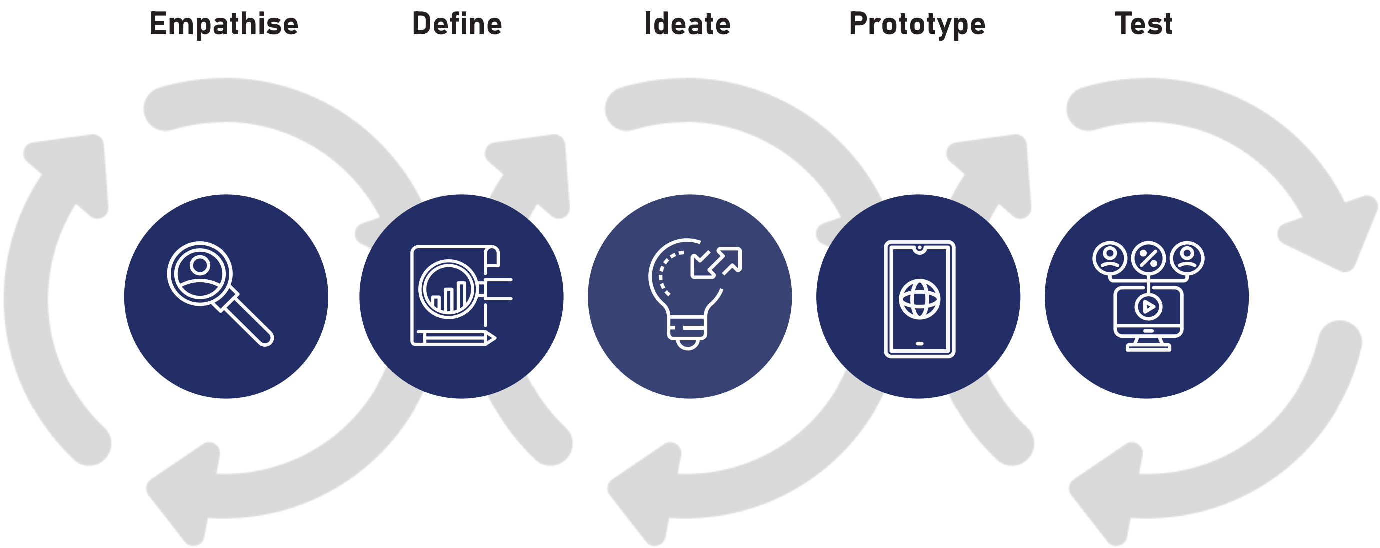
Applying Design Thinking to user participation in digital mental health

Why Design Thinking?

Design Thinking is a helpful mindset and method for developing and adapting digital solutions, especially when it comes to involving intended users and stakeholders. It helps to involve them early on, ensuring the solution meets their needs and challenges, which can be especially relevant when adapting your solution for new languages and cultures. Early involvement of users also helps to quickly test assumptions and challenges to avoid lengthy and, at times, indifferent development processes.

In this section, we will explain how design thinking works, show you ways to involve users in the process, suggest methods you can use, and convey what we learned by adapting two existing digital mental health solutions to new settings.

Keep in mind that the methods we highlight in **bold** are just suggestions – design thinking is not a one-size-fits-all approach.
You will have to adapt it to what works best for your project.



Steps of Design Thinking

Design thinking involves several steps that can guide your user participation process. Here is a quick overview:

1. **Empathise: Get to know your users by understanding their experiences, challenges, and needs.**

2. **Define: Based on the insights gathered, define the challenges or needs that your digital solution should address.**

3. **Ideate: Brainstorm and generate creative solutions to your defined challenges or needs.**

4. **Prototype: Create simple versions of your solution and share them with users for feedback.**

5. **Test: Have users interact with your refined prototype and gather their feedback to refine your solution further.**

By following these iterative and often overlapping steps and being open to going back and forth between the phases, you can create digital mental health solutions that are **effective, meaningful, culturally relevant, and user-centred.**

Empathise

What?

The empathise phase focuses on understanding users' needs and challenges by observing, listening, and asking questions. This phase is crucial as it provides valuable insights into users' experiences, enabling the creation of solutions that genuinely address their challenges and needs.

How?

Key activities in the empathise phase involve identifying the intended users and other stakeholders, their challenges and needs, and existing mental health solutions. This helps to determine the actual need for your solution and challenge your own assumptions.

Desk research can be beneficial to initially gain a good understanding of the intended users' needs and the current solutions and landscape. **Interviews** can be an excellent method to gain a deeper insight into the users' needs.

You can start by **interviewing** clinicians who work closely with the intended users, as we did in our adaption of SAM and SAFE.

Their input offers essential knowledge about existing solutions and the intended users' daily lives, challenges, and needs.

During a group **interview** or focus group, testing can help empathise with how users interact with your solution and understand users' needs. For example, an **A/B test** can be used in a later iteration to compare different versions of content, which can help you understand your users and how language affects their comprehension.

Additionally, the testing phase can reveal how well the design and functionalities meet users' needs and further deepen your understanding of the intended users through multiple iterations of the design thinking steps.

It is also essential during this phase to investigate the necessary monetary investments and the legal and regulatory requirements, such as data protection and medical device regulations, to ensure local compliance. Furthermore, it can be relevant to assess condition-specific accessibility needs for your intended users.

In addition, it is necessary to gain a deep understanding of the digital mental health solution if the solution is unfamiliar to you, e.g. by thoroughly testing the solution yourself and conducting interviews with relevant stakeholders.

What we learned from this phase

This phase established a clear need for the SAM and SAFE apps in the respective countries. Through desk research and interviews with clinicians, we learned that the intended users experienced challenges with both stress management (SAM) and self-harm (SAFE).

Furthermore, we established that existing solutions were lacking and did not meet the needs of the intended users.

To involve the intended users of the SAFE app, GGZ Centraal could rely on their existing network of clinicians and patients. However, it became clear that the Dutch clinicians needed to use the SAFE app first to recruit intended users effectively.

For the SAM app, recruitment posed more challenges since we had not worked with individuals with autism before. Therefore, reaching out to relevant partners, e.g., patient networks, municipalities, and healthcare organisations, required more time.

DO

Allocate plenty of time to fully understand your intended users.

Interview relevant clinicians and intended users to achieve this.

Use your network or partner up with local organisations to recruit users.

DON'T

Take recruitment **for granted.**

Especially when you are dealing with intended users of a digital mental health solution, which can be a **vulnerable group.**

Checklist

- ☐ Desk research about digital mental health solutions in your specific context.
- ☐ If the solution is new to you, get a good understanding of it and its functionalities.
- ☐ Interview intended users/stakeholders depending on your background (i.e., clients/patients, mental health professionals, developers, directors of organisations, etc.)
- ☐ Identify legal and regulatory requirements (e.g. GDPR, MDR)

Define

What?

The define phase involves analysing the findings gathered during the empathise phase, clearly identifying and defining the scope of your solution along with intended users and their needs, goals, and challenges. This helps to build the foundation and direction for your continued work, ensuring that your solution is aligned with the intended users' needs.

How?

Personas can be a good starting point for summarising the findings from the empathise phase, defining the intended users and their needs, goals, challenges and potential cultural differences. This was also the approach for adapting the SAM app, where we created a **persona**, formalising and articulating our understanding of the intended users in Denmark.

When defining and formalising your understanding of the intended users, **mapping out the user journey** and potential workflow for clinicians can also be beneficial. Visualising the users' experience as they interact with the product. It highlights pain points, opportunities, and possible improvement areas, helping better understand the user's perspective. During our project, this journey was mapped for SAM and SAFE with clinicians' help to better understand how the apps could be incorporated into existing workflows and patient courses.

Once you have defined the users and their needs, inviting them into the defining step can be beneficial and empower users by giving them a voice in the design process, especially in participatory design.

Defining the legal and regulatory requirements in a potential new market and the functional and technical requirements for adapting the solution to a new language and market is crucial. This includes figuring out whether the underlying technical infrastructure of the digital solution is already prepared for multiple languages.

Alternatively, it might be easier to clone the solution and build it up for the new market. The expected monetary investment and business model for technically developing or adapting the solution can also be defined during this phase.

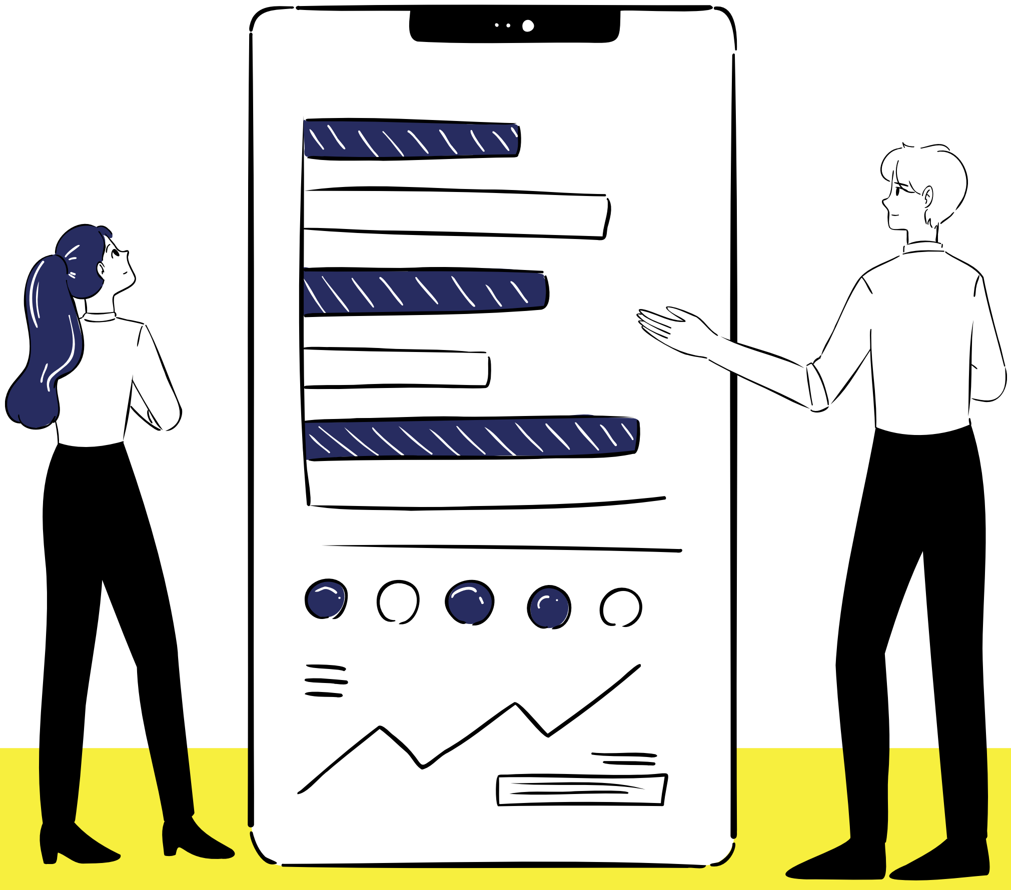
What we learned from this phase

This phase established a deeper understanding of the intended users in Denmark and the Netherlands and the cultural differences between the two countries.

For example, we learned that access to mental health services in the Netherlands differs from that in Denmark.

We also learned that Dutch users did not resonate with the term “self-harmer” used throughout the SAFE app. We defined the term as not only uncommon but also stigmatising. Accordingly, this was adjusted to “people who self-harm” in the Dutch adaptation.
Similarly, we defined that Danish users preferred a more informal tone.

We also defined the technical requirements where the two apps differed significantly. The underlying technical infrastructure for the SAM app was already prepared for multiple languages, making it easier to adapt. In contrast, the SAFE app had to be cloned and set up in Dutch.



DO

Take time to analyse and summarise your data.

Consider creating multiple personas, considering different perspectives.

DON'T

Assume you already **know the users** or their needs and challenges – avoid **jumping to conclusions.**

Define:

☐ Target group(s)

☐ Their needs and challenges

☐ Cultural differences or other differences between countries

☐ Success criteria

☐ User journey and workflow for clinicians

☐ Legal and regulatory requirements the digital mental health solution must adhere to

☐ Functional and technical requirements with developers

Ideate

What?

The ideate phase involves exploring a wide range of possibilities. This exploration is essential before narrowing down to the most promising solutions that meet the intended users' defined needs, challenges, and potential cultural differences. This allows you to remain explorative and offers a fresh perspective, setting the stage for creative problem-solving.

How?

When it comes to ideation, it's often a team effort.
Whether a classic **brainstorm** or a **mind map**, these methods provide an excellent starting point for exploring ideas and meeting the defined needs, challenges, and cultural differences. They help structure your collective ideas to meet the users' needs.

Inviting the intended users into the **brainstorming** can also be a game-changer to get diverse perspectives and ideas on their desired solution features while empowering your users, especially in participatory design.
Another method you can use is **How Might We**.

This involves rephrasing users' challenges into open questions to help your creative thinking and idea generation.

During our pilot test, we **brainstormed** how the content and information in the SAM and SAFE app could be adapted to meet the defined needs and cultural differences. During this process, relevant clinicians were also involved, giving their perspectives on the required changes.

In the ideate phase, meeting with developers to discuss technical possibilities can also be beneficial, whether adapting an existing solution or developing a new one. Moreover, it helps to prepare an action plan detailing how your solution can be adapted to and tested with the intended user in the new market.

Even when adapting existing solutions, the ideate phase plays a minor but crucial role. While the overall concept of the digital solution is already established, this process can help to look at the solution from new perspectives.

It can also provide opportunities for incremental improvements and new features within the limits of the existing solution and potential financial restraints.

During our pilot testing, we started to collect, prepare, and translate the required content for the two apps to Dutch and Danish. While doing so, we also created different versions of the app content (e.g. informal and formal tone) that could be used in our prototypes.

What we learned from this phase

The translation process posed challenges for both apps. The SAFE app relied on AI-generated translations proofed by clinicians, which was time-intensive. The SAM app used professional translators, but their limited familiarity with mental healthcare contexts created issues.

Key lessons included preparing content thoroughly, involving professionals in the translation, and ensuring proofing by skilled clinicians.

The process underscored the need for clear procedures and agreements on who does what and when.

Technically, the SAM app supported multilingual features, allowing users to select their preferred language, which made a Danish adaptation more straightforward.

In contrast, the SAFE app was designed for Danish users, requiring the app to be cloned and its content extracted for translation, ultimately complicating the process.

DO

Be open-minded to potential ideas and solutions.

Build on each other's ideas.

Set clear procedures and agree on responsibilities during the translation process.

DON'T

Take the translation **process lightly –** allow plenty of time to prepare the material and **proofreading it.**

Checklist

☐ Brainstorm or hold a workshop (with stakeholders) to discuss how the digital mental health solution can meet the abovementioned definitions.

☐ Prepare a plan and timeline with developers for the adaptions or development of the digital solution.

☐ Collect and translate the required content for the solution.

Prototype

What?

The prototype phase transforms ideas into tangible models to be tested and iterated upon. This phase is vital as it enables you to explore and refine potential solutions through direct user interaction and multiple iterations. By building prototypes, you can quickly identify what works and what does not, gathering insights on how users engage with the solution and where improvements can be made.

How?

Key activities in this phase include creating solution prototypes that can be tested and refined through several iterations. **Low-fidelity prototypes** are quick, simple, low-cost representations like sketches or paper mock-ups. In contrast, **high-fidelity prototypes** are more detailed and interactive, resembling the final product.

By creating **high-fidelity prototypes**, you can get valuable input from your intended users to refine your product and spot potential issues before commencing your final development. By conducting **interviews** with clinicians, we gathered insights specific to their perspectives on the prototype's design and features.

During interviews, an A/B test can also be used to test different prototype versions. For example, we prepared a low-fidelity prototype with two versions of the same content from the SAM app written in informal and formal language to test with clinicians.

Adding to that, we used **high-fidelity prototypes** set up in Figma, allowing focused feedback from clinicians to refine both apps. After these adjustments, the adapted content was transformed into a fully functioning prototype for testing with the intended users.

What we learned from this phase

The combination of low- and high-fidelity prototypes worked very well for both apps. Paper prototypes required minimal resources and still allowed clinicians to provide quick feedback and make corrections. Similarly, in our A/B test, clinicians offered valuable insights into the preferences of the intended users.

This led to adjustments to our prototypes before testing them with the intended users. For example, we changed the tips in the SAM app, making them more actionable and concrete.

When we presented the high-fidelity prototypes, it enabled the intended users to clearly see what they could expect from SAM and SAFE. It also allowed them to be very specific about what they like or dislike when they review a more tangible product. We also experienced that prototyping required several iterations before a solution could be presented to the intended users.
However, it was well spent, saving time in the long run.

DO

Consider a simple prototype; a phrase of a text written in different tones or a paper mock-up of your digital solution.

DON'T

Wait until you have a **fully functioning** or perfect prototype to start your tests.

Checklist

☐ Prepare materials for testing, e.g. mock-ups, Figma wireframes, text snippets, paper prototypes etc.

☐ Conduct a functionality test of your prototype.

☐ Collect feedback on low-fidelity prototypes to implement in high-fidelity prototypes.

Test

What?

The test phase focuses on evaluating and refining ideas or prototypes by seeking direct feedback from users. This phase involves presenting solutions to the intended users, observing their interactions, and gathering insights to identify strengths and areas for improvement. Testing ensures your solution aligns with users’ needs and enhances its impact and usability.

How?

Key activities include testing the prototypes through several iterations and applying different methods. Early iterations with **A/B tests** or low-fidelity prototypes can provide valuable insights into the preferences of the intended users.

Later iterations can focus more on high-fidelity prototypes using **usability testing** and gathering feedback through **interviews**, **surveys**, and **observations**, evaluating how users interact with your solution.

During our test of the SAM app, we initially used **A/B tests** with clinicians to test two versions of central content from the app. Consequently, we created and adapted our **high-fidelity prototype** for **usability testing** and evaluating how the intended users interacted with the app. Usability testing can involve different methods.
For example, we combined user **interviews**, **observations**, and **think-aloud tests**, where users completed specific tasks while sharing their thoughts. This helped us understand how they engaged with the prototypes.

For optimal testing, incorporate iterative testing cycles, where insights from one test allow for refinements for the next, gradually aligning the design closer to user expectations and requirements.

Create a comfortable setting where users can interact with the solution as they would in real life, allowing them to choose the location — whether at their home or another place that feels safe and natural to them. **Think-aloud tests** encourage users to verbalise their thoughts as they navigate your prototype.

This can reveal hidden challenges or unmet needs. By documenting findings systematically, testing becomes a valuable tool for validating assumptions and ensuring your solution is relevant and meets the intended user's needs.

This hands-on testing allows users to experience the solution's functionality realistically, revealing valuable insights into usability and effectiveness. **Observing** user interactions with the prototype provided essential data for further refinements and ensured alignment with user needs. Take into account that this phase, while critical for refining the solution, also requires time and resources.

What we learned from this phase

User testing recruitment strategies offer distinct pros and cons.

For the SAM app, outreach through social media, patient organisations, and municipalities enabled direct access to the intended users for in-person feedback, yielding rich insights.

In contrast, SAFE app recruitment had to focus on clinicians, patients, and relatives. While recruiting clinicians was straightforward, involving patients and relatives through clinicians led to indirect access and feedback via surveys.

This hindered immediate feedback from patients and relatives, resulting in less rich insights.

In conclusion, direct outreach requires significant effort to engage stakeholders, but it offers valuable returns by fostering deeper insights.

DO

Prioritize direct engagement with all target groups of intended users, if possible.

Explore high-effort methods as they may also have the highest returns (e.g. think aloud).

Ensure regulatory and ethical compliance concerning tests in clinical populations.

DON'T

Settle for **one iteration** of testing.

Checklist

☐ Create an interview guide for usability testing, including an action plan, tasks, questions, and A/B scenarios.

☐ Test the identified needs and challenges through methods such as in-person or online interviews or surveys.

☐ Conduct 3-5 usability tests in person with intended users (using the think-aloud method).

☐ Review results – does your prototype meet the intended user's needs?

☐ Refine your digital solution's translated content and features based on insights from prototype tests.

Key considerations for upscaling a digital mental health solution in a transnational context

When expanding a digital mental health solution to another country, there are several critical factors to keep in mind to ensure the solution is culturally relevant, accessible, and effective.

Below are our primary considerations when relying on design thinking for your adaption, testing and upscaling to a new market.

Conduct comprehensive market research

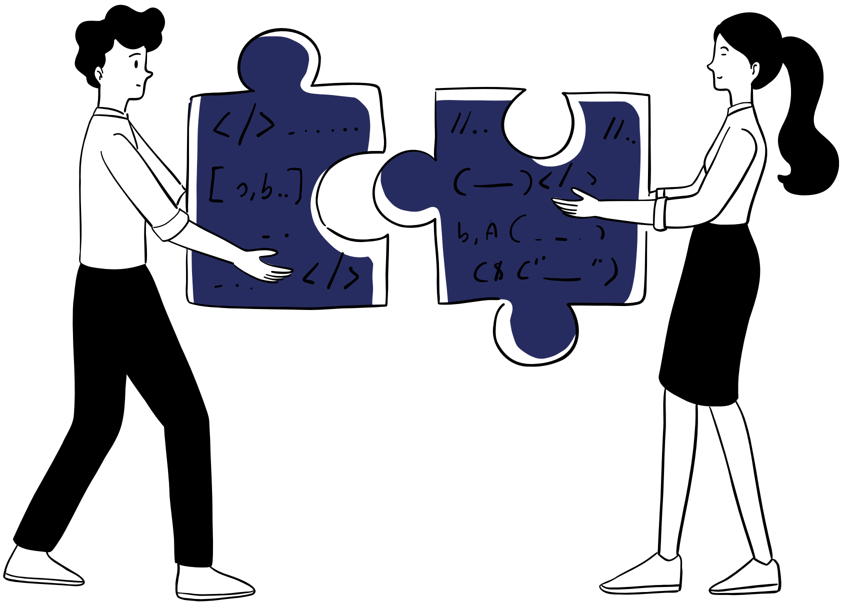
Start by gaining an understanding of the target country's mental health landscape, cultural norms, values, attitudes, and readiness toward digital mental health solutions. Understand which solutions and services exist, where the gaps are, and how your solution can fill those gaps. This research is essential for understanding the market and the users within, as well as identifying potential local experts and partners who can aid the adaption and implementation of your solution.

Collaborate with local experts

Setting up (formal) collaborations with local mental health organisations, professionals, and community leaders can be essential when expanding to a new country.

Their insights can help navigate nuances in language and culture, regulatory requirements, and accessibility challenges. Leveraging organisations' broad reach allows for refined market research, solution adaptation, and effective implementation.

Collaborating with a local entity is especially valuable for understanding the local landscape and facilitating access to intended users for interviews or usability testing.



Apply design thinking as an iterative process

Applying design thinking for user participation is a cycle of continuous testing, feedback, and refinement, sometimes requiring going back and forth through the phases. Each iteration provides valuable insights that can help tailor and refine your solution to better fit the needs of the intended users. Accordingly, you should revisit and revise earlier stages as new information emerges.
This flexibility is essential to develop an effective, user-centred solution that genuinely addresses the needs and challenges of the intended users.

Consider cultural, socioeconomic, policy and other differences

Cultural differences and similarities can appear in various ways, such as healthcare systems, language, race, religion, and customs. For language, translate your materials using professional translators or native speakers. Involve intended users to ensure clarity and relatability. Be mindful of visuals and examples to be inclusive and diverse. Additionally, mental health perceptions and stigmas can vary, so collaborate with local experts to align your solution with the cultural context and sensitivities of the target context.

Allocate sufficient time for translation and local adaptation

Translating and adapting the content to the local context should not be underestimated. Therefore, allocating sufficient time for this at the onset and throughout the process is critical. Frequent optimisations might be required as you move through the different steps of design thinking.

This process also benefits from involving various stakeholders, particularly intended users, to check whether regional features and contextual nuances are correctly addressed.

Clarify your expectations to the intended users

Set clear expectations by detailing what you are asking users to do, why, and how long it will take. Ensure the invitation to participate is easy to understand, informative, and inviting.

Share enough details for users to understand the purpose and their role clearly. In your dialogue, clearly state the added value of their input and the boundaries of their decision-making power and influence on the final solution.

This approach ensures that users are well-informed, engaged, and aware of how their contributions will impact the development process. It can also be good to show appreciation for their participation and engagement by offering small tokens of appreciation after tests, interviews or other activities.

Prioritise safety and flexibility

When working with vulnerable groups, following ethical guidelines and creating a respectful and safe environment for user participation is essential.
Consult with clinicians or relatives beforehand to better understand and engage the intended users so you abide by their terms.

When interacting with the intended users, it is crucial to be flexible and pay attention to how comfortable they are within the process. If specific tasks push them out of their comfort zones, be flexible and adjust to their needs.

Also, be mindful of your own or other's misconceptions or biased ideas about mental health.

Ensure regulatory compliance

Familiarise yourself with the regulatory environment for digital mental health interventions in the target country to have a realistic view of the potential (additional) costs. Considering this factor in your development or upscaling process should ensure compliance with local laws and regulations.

Depending on the nature of your digital mental health interventions, you must also address privacy and data protection concerns according to local standards, e.g., the European General Data Protection Regulation (GDPR), Medical Device Regulation (MDR), or, in some cases, the EU AI Act. Ensure you meet local regulations for accessibility by adhering to standards such as the Web Content Accessibility Guideline (WCAG).

Depending on the digital solution, you may need to integrate it with local healthcare systems, such as electronic health records (EHRs) or existing mental health services.

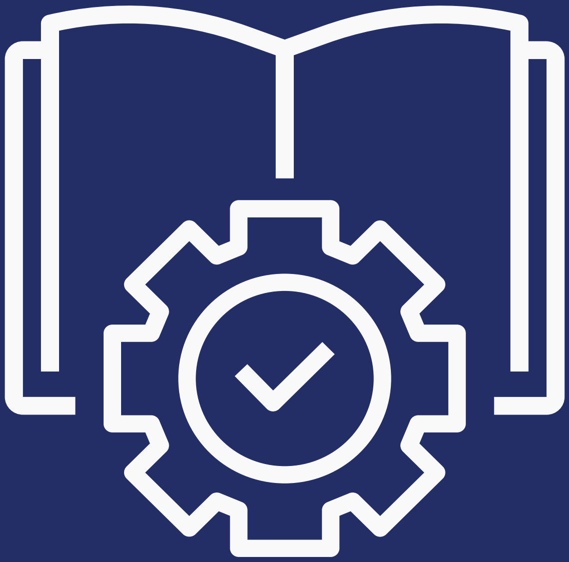
Ensure sustainable financing

It is crucial to have sufficient funding or a solid business plan from the beginning of the design thinking process and consider financial sustainability throughout all phases.

Even the best-designed product may fail without proper financial backing, as no resources will be available for maintenance, further development, or long-term sustainability.

Planning for funding ensures that the product can evolve and remain viable, ultimately achieving lasting success.

Annex of methods



This annex serves as a “methods library” with successful methods we have worked with during or before the SUPER project.
The different methods are briefly presented, along with a link to further resources and guidance.

We have shared details on the methods used (e.g., interview questions, personas, prototypes) and the accompanying data and results via the Open Science Framework (https://osf.io/wpax5/).

More detailed findings will also be published in a scientific paper.

Focus groups

Focus groups are a valuable qualitative method where a group of intended users or relevant stakeholders come together to discuss and provide feedback on a concept, prototype or product. These discussions are typically moderated to ensure that a range of perspectives and insights are captured.

The main goal is to gather detailed, in-depth information that can inform decision-making processes and product development and, most importantly, significantly improve user experience.

For more information, extensive guidance exists for planning and facilitating focus groups, e.g., from the Interaction Design Foundation (https://www.interaction-design.org/literature/article/how-to-conduct-focus-groups).

Interviews

A one-on-one method where you can delve into the intended user's experiences, needs, and challenges, gathering rich, in-depth insights.

This approach allows for detailed understanding and will enable you to ask follow-up questions and dive into relevant topics uncovered during the interview.

For more information, extensive guidance exists for carrying out interviews, e.g., from the Universal Design Guide (https://universaldesignguide.com/method/user-interviews/).

Surveys

Surveys are a quantitative research method involving structured questionnaires sent to a large group of intended users or relevant stakeholders. This approach is efficient for gathering information on topics like user preferences, behaviours, and opinions.

Surveys help identify trends and patterns within a target population by reaching numerous individuals quickly and efficiently.

The collected data can then be analysed to make informed decisions regarding your solution. This method ensures a broad understanding of the target audience's needs and preferences.

For more information, extensive guidance exists for sending out surveys, e.g., from the Nielsen Norman Group
(https://www.nngroup.com/articles/surveys-design-cycle).

Brainstorm

Brainstorming is a dynamic and collaborative activity that fosters creativity and innovation. During a session, participants freely share diverse ideas and solutions without criticism, encouraging various perspectives.

This open environment helps to break down mental barriers, spark new thoughts, and explore unconventional approaches to a problem.

The goal is to generate numerous ideas, which can later be reviewed, refined, and potentially developed into relevant solutions.

For more information, extensive guidance exists for brainstorming, e.g., from IDEO
(https://www.ideou.com/pages/brainstorming).

Mind map

A visual technique to organise ideas, concepts, or problems by connecting associated thoughts and information.

This method promotes brainstorming and highlights connections between your ideas and related topics and notes, enabling clearer thinking and problem-solving.

Its intuitive structure enhances creativity, making it a powerful tool for understanding complex issues.

For more information, extensive guidance exists along with digital tools for creating a mind map, e.g., from Canva (https://www.canva.com/graphs/mind-maps/).

User journeys / Journey mapping

User journeys are visualisations that show the steps your intended users take to reach a goal when using a product or service. They help you to understand what your intended user goes through, including their feelings, needs, and any difficulties they encounter.

By breaking down the process into clear stages, user journeys highlight where things might go wrong or where improvements can be made.

This makes it easier to create better user experiences by addressing pain points and making the path to the goal as smooth as possible.

For more information, extensive guidance exists for creating user journeys, e.g., from Yale University (https://usability.yale.edu/understanding-your-user/user-journey-maps).

Personas

Creating a persona involves creating a fictional yet realistic character based on research and user data to represent your intended users. This helps ensure a clear understanding of user needs, guiding your development process.

You need qualitative and quantitative data to identify user patterns and characteristics.

Once data is collected, you create a detailed persona describing their goals, challenges, and needs.

For more information, extensive guidance exists for creating a persona, e.g., from the Nielsen Norman Group (https://www.nngroup.com/articles/personas-study-guide/).

How might we

"How might we" helps frame challenges or insights as open-ended questions, encouraging innovative solutions. This approach transforms constraints into opportunities, fostering creativity and teamwork.

By asking, "How might we," you shift your mindset from limitations to possibilities, inviting a broader range of ideas and collaborative problem-solving.

For more information, extensive guidance exists for asking "How might we" questions, e.g., from Design Kit (https://www.designkit.org/methods/how-might-we.html).

Observations

Observing your intended users when interacting with a product or prototype in a natural environment provides valuable insights into their behaviour and preferences.

This can help you identify potential pain points, unknown workarounds, or usability issues.

By observing how they use the solution, you can gather real-time feedback and understand their pain points and preferences.
This process is crucial for understanding your intended users and uncovering potential obstacles or frustrations they may encounter.

For more information, extensive guidance exists for observations, e.g., from Medium (https://medium.com/@ashraful.ruet15/observation-in-the-design-thinking-process-44f065616f70).

A/B test

A/B testing involves creating and testing two versions of the same content or solution for your intended users to determine which version performs better. This method helps optimise design decisions by comparing user interactions and outcomes.

You can identify the most compelling features and make data-driven improvements by analysing the results.

For more information, extensive guidance exists for A/B testing, e.g., from the Nielsen Norman Group (https://www.nngroup.com/articles/ab-testing/).

Desk research

Desk research involves reviewing existing data, studies, reports, or articles to gain insights into trends or issues. This method doesn't require direct interaction with the intended users, allowing researchers to analyse and understand the broader context based on previously gathered information.

It's a cost-effective and time-efficient way to collect valuable data, identify patterns, and make informed decisions before directly involving your intended users or relevant stakeholders.

For more information, extensive guidance exists for conducting desk research, e.g., from the Nielsen Norman Group
(https://www.nngroup.com/articles/secondary-research-in-ux).

Usability tests

Usability tests are conducted with your intended users to assess the ease of use and overall user experience of a finished solution or prototype. The intended users interact with the product/prototype while you observe and collect feedback on their experience.

The goal is to identify usability issues and get insights into the intended users' behaviour when interacting with your solution.

This helps to ensure that it meets the needs and expectations of your intended users while allowing you to refine and improve your solution further.
For more information, extensive guidance exists for usability testing, e.g., from Yale University
(https://usability.yale.edu/usability-testing/usability-testing).

Low-fidelity prototyping

Low-fidelity prototyping involves creating simple, often paper-based models to test ideas and concepts before investing in high-fidelity prototypes. These simple prototypes help convey and test a concept to users or stakeholders to gather feedback and identify potential issues early.

This cost-effective method allows for rapid iterations, experimentation, and innovation.

Accordingly, when resources are invested in detailed prototypes, the designs can be more well-informed and directed towards feasible solutions.

For more information, extensive guidance exists for creating high-fidelity prototypes, e.g., from the Interaction Design Foundation (https://www.interaction-design.org/literature/article/prototyping-learn-eight-common-methods-and-best-practices).

High-fidelity prototyping

Using a design tool like Figma allows you to create detailed and interactive digital high-fidelity prototypes that can be tested, shared, and iterated upon, mimicking the final product.

Doing so lets you get valuable insights and inputs from your intended users, allowing you to identify potential issues and room for improvement.

Accordingly, you can adjust and refine your solution before spending time and resources to develop your actual solution.

For more information, extensive guidance exists for creating a high-fidelity prototype, e.g., from Figma (https://www.figma.com/resource-library/high-fidelity-prototyping/).

References

1. Brotherdale R, Berry K, Branitsky A, Bucci S. Co-producing digital mental health interventions: A systematic review. Digit Health Digit Health; 2024 Jan 1;10. PMID:38665886

2. Schouten SE, Kip H, Dekkers T, Deenik J, Jong NB, Ludden GDS, Kelders SM. Best-practices for co-design processes involving people with severe mental illness for eMental health interventions: a qualitative multi-method approach. Design for Health Routledge; 2022 Sep 2;6(3):316–344. doi: 10.1080/24735132.2022.2145814

3. Jarke J. Co-creating digital public services. Public Administration and Information Technology Springer; 2021;6:15–52. doi: 10.1007/978-3-030-52873-7_3/TABLES/4

4. Bernaerts S, Van Daele T, Carlsen CK, Nielsen SL, Schaap J, Roke Y. User involvement in digital mental health: approaches, potential and the need for guidelines. Front Digit Health Frontiers Media SA; 2024 Aug 22;6. doi: 10.3389/fdgth.2024.1440660

5. Mao JY, Vredenburg K, Smith PW, Carey T. The state of user-centered design practice. Commun ACM ACMPUB27New York, NY, USA; 2005 Mar 1;48(3):105–109. doi: 10.1145/1047671.1047677

6. Sanders EBN, Stappers PJ. Co-creation and the new landscapes of design. Co-Design Taylor & Francis; 2008;4(1):5–18. doi: 10.1080/15710880701875068

7. Bogers M, Afuah A, Bastian B. Users as innovators: A review, critique, and future research directions. J Manage 2010;36(4):857–875. doi: 10.1177/0149206309353944

8. Moore G, Wilding H, Gray K, Castle D. Participatory Methods to Engage Health Service Users in the Development of Electronic Health Resources: Systematic Review. J Particip Med 2019;11(1):e11474 https://jopm.jmir.org/2019/1/e11474 Journal of Participatory Medicine; 2019 Feb 22;11(1):e11474. PMID:33055069

9. Kip H, Keizer J, da Silva MC, Jong NB De, Köhle N, Kelders SM. Methods for Human-Centered eHealth Development: Narrative Scoping Review. J Med Internet Res 2022;24(1):e31858 https://www.jmir.org/2022/1/e31858 Journal of Medical Internet Research; 2022 Jan 27;24(1):e31858. PMID:35084359

10. De Witte NAJ, De Cat A, Vandenhoudt H, Vermeylen S, Van der Auwera V, Broeckx L, Adriaensen I. Sustainable user involvement: Building a user community and fostering high-quality research. Meeting the Inclusion Challenge in Innovation De Gruyter; 2024 Nov 4;35–60. doi: 10.1515/9783111241036-003

GGz Centraal (NL), Centre for Digital Psychiatry (DK) and Thomas More University of Applied Sciences (BE) collaborated on this project.

GGz Centraal and the **Centre for Digital Psychiatry** already involve users in developing their applications. At the same time, **Thomas More University of Applied Sciences** has conducted multiple practice-oriented research projects involving stakeholders in developing and implementing **digital mental health solutions.**

GGz Centraal (NL)

GGz Centraal, the fourth largest psychiatric hospital in the Netherlands, offers specialized mental health treatment through diagnostics, counselling, and more.

They provide care for individuals with mental health issues and provides user-centered solutions and support.

As part of this, they have co-designed the Stress Autism Mate app with clients (SAM).

Thomas More University of Applied Sciences (BE)

Psychology and technology at Thomas More University of Applied Sciences conducts applied, practice-oriented research in the broad field of digital mental health.

There is a strong focus on the interaction between both domains and the synergy they create, particularly within mental healthcare and human-technology interaction.

The Centre for Digital Psychiatry (DK)

The Centre for Digital Psychiatry, Region of Southern Denmark, is a frontrunner in using digital solutions to promote mental health and psychiatric treatment.

The Centre successfully matches the needs of psychiatry with technology that enhances the accessibility, the quality and flexibility for patients and their relatives.

Citation suggestion:

Lange Nielsen, S., Korthé Carlsen, C., Roke, Y., Schaap, J., Van Daele, T., & Bernaerts, S. (2025).
Guidelines for user participation: adapting digital mental health across borders. Interreg North Sea SUPER.
Retrieved from https://www.interregnorthsea.eu/super/guidelines