

Co-designing, Developing, and Testing a Mental Health Platform for Young People Using a Participatory Design Methodologies in Colombia: A Mix Method study

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Submitted to: JMIR Human Factors
on: September 17, 2024

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Abstract

Background: Globally, mental health problems increasingly affect young people, contributing significantly to disability and disease. In low- and middle-income countries (LMICs) like Colombia, barriers to accessing care exacerbate the treatment gap. Additionally, the lack of widespread digital interventions further deepens the digital health divide between the Global North and South, limiting equitable access to innovative mental health solutions

Objective: The objective of this study was to co-design a mental health platform using participatory design methodologies and to conduct a 15-month naturalistic observational trial to assess its feasibility in supporting help-seeking behaviors among Colombian youth.

Methods: A mixed-methods approach was used, following a Research and Development (R&D) cycle. Co-design workshops identified user needs. Usability testing (alpha and beta stages) used the System Usability Scale (SUS). A naturalistic observational trial from July 2022 to October 2023 collected data on user interactions and engagement. Quantitative and qualitative data were analyzed using thematic analysis and descriptive statistics.

Results: A total of 146 individuals participated in workshops, and 36 in usability testing. The trial included 435 users, with 314 registered and 121 anonymous users. Emotional distress was prevalent, with 66% of registered and 61% of anonymous users reporting distress, measured by the Kessler 6 scale. A total of 102 participants requested telecounseling, but only 27% completed a session. Usability testing showed a median SUS score of 85.0, with minimal task difficulty. However, only 19% of users continued engagement after the first day.

Conclusions: This study shows that co-creating a mental health platform that aligns with young people's needs in Colombia is feasible. The participatory approach ensured meaningful user involvement, resulting in high usability. Challenges remain in sustaining engagement and addressing privacy concerns, especially for younger users.

(JMIR Preprints 17/09/2024:66558)

DOI: <https://doi.org/10.2196/preprints.66558>

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Original Manuscript

Co-designing, Developing, and Testing a Mental Health Platform for Young People Using a Participatory Design Methodologies in Colombia: A Mix Method study.

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Abstract

Background: Globally, mental health problems increasingly affect young people, contributing significantly to disability and disease. In low- and middle-income countries (LMICs) like Colombia, barriers to accessing care exacerbate the treatment gap. Additionally, the lack of widespread digital interventions further deepens the digital health divide between the Global North and South, limiting equitable access to innovative mental health solutions

Objective: The objective of this study was to co-design and develop a mental health platform using participatory design methodologies and to conduct a 15-month naturalistic observational trial to assess its feasibility among Colombian youth.

Methods: This study employed a mixed-methods approach within a structured Research and Development (R&D) cycle. To ensure a user-centered design, we began with a series of co-design workshops, where stakeholders collaboratively identified key user needs. Following this, usability testing was conducted in two stages—alpha and beta—using the System Usability Scale (SUS) to assess functionality and user experience. To capture real-world interactions, a naturalistic observational trial ran from July 2022 to October 2023, collecting data on user engagement and system performance. The study integrated both quantitative and qualitative analyses, with thematic analysis applied to qualitative insights and descriptive statistics used to interpret quantitative findings.

Results: A total of 146 individuals participated in the co-design process, with 110 contributing to the development of platform components and 36 taking part in usability testing. The co-designed platform integrated several key features, including social media and advertising, a mental health screening tool, registration, targeted psychoeducational resources, automated tailored recommendations, and a “track-as-you-go” feature for continuous mental health monitoring. Additional elements included user-friendly follow-up graphs, telecounselling integration, customizable wellbeing nudges, an emergency button, and gamification components to enhance engagement.

During usability testing, the beta prototype received a median System Usability Scale (SUS) score of 85.0 (IQR=12.5), indicating high usability. In the subsequent observational trial, which ran from July

2022 to October 2023, a total of 435 users interacted with the platform—314 as registered users and 121 anonymously. Emotional distress was prevalent, with 66% of registered users and 61% of anonymous users reporting distress, as measured by the Kessler 6 scale. Despite 102 users requesting telecounselling, only 27% completed a session. While usability scores remained high (median SUS: 85.0), engagement challenges emerged, with only 19% of users continuing platform use beyond the first day.

Conclusions: This study explored the development and user experience of a youth mental health platform in Colombia, demonstrating that a co-creation approach is both feasible and effective. By actively involving users throughout the design process, the platform achieved high usability and incorporated features that resonated with its target audience. However, sustaining long-term engagement remains a challenge, as does addressing privacy concerns—particularly for younger users. These findings highlight the importance of continuous user-centered refinement to enhance both accessibility and retention in digital mental health interventions.

Funding:

This research was funded by Fondation Botnar.

Keywords (3-10w): low-and-middle-income countries; Latin America; telemedicine; medical informatics; eHealth; mental health; help-seeking; community-based participatory research; patient participation; patient satisfaction.

Introduction

Globally one in seven young people (YP) aged 10 to 19 years old, are estimated to suffer from a mental illness [1]. Depression, anxiety and behavioral disorders are considered some of the main contributors to the burden of disability and disease in young populations [2, 3]. Likewise, suicide has been found to be one of the main causes of death in this population [1, 4]. Unsurprisingly, the economic and human costs of mental ill-health represent a public health concern where urgent actions are required to improve health outcomes [4], reduce years of life lost due to preventable mortality and disability [4], and save millions in healthcare spending (4). The impacts of mental ill-health are particularly challenging for low-and-middle-income Countries (LMIC) which are home to 90% of the world's youth [5].

Evidence suggests there can be up to a decade-long delay between the first symptoms of a mental disorder and initial contact with services, especially among YP [6]; consequently, the use of Digital Health Tools (DHTs) has gained attention as a potential solution, as YP often seek information online about their mental health (MH) before discussing it with family members or engaging with MH services [7]. YP have the preference to find a middle ground between formal and informal sources of information (8), which opens the opportunity to engage them with MH services or with sources of care [8]. Notwithstanding the value of DHTs, challenges to their adoption exist: first, Internet and digital technologies might not be equally accessible across and within the countries [9],[10]; secondly, even in countries where DHTs are readily available, retention of users and usability are still their main challenges, as it is reported that their usage decreases throughout the trials and most evaluations are limited to short periods [11-13]. To promote the adoption of DHTs [14], Participatory Design approaches [15, 16] offer a promising solution by centering users' needs. This user-driven methodology not only enhances usability but also fosters long-term engagement, ensuring that the technology remains relevant and effectively integrated into everyday practice [17].

Colombia is an upper-middle-income country [18] which faces many societal and economic

challenges, further exacerbated by the COVID-19 pandemic [18]. The latest MH survey indicates that 26.5% of adolescents and 26.2% of adults aged 18 to 44 are likely to experience more than two MH problems [19]. Despite this high prevalence, service utilization remains low, with only 12.4% of individuals in urban areas with MH disorders having accessed any health services, according to the WHO [20]. The substantial treatment gap in MH care underscores the critical need for enhanced access to services, particularly given the high prevalence of multiple MH issues among adolescents and young adults. This gap is intrinsically linked to the help-seeking process, as barriers such as stigma, lack of awareness, and limited availability of resources prevent individuals from seeking and receiving necessary support [21].

To the best of our knowledge, there are no comprehensive DHT available in Bogotá, the capital city, or elsewhere in Colombia that assist YP with their MH. Utilizing participatory design (PD) methodologies with end-users, this research study explored the ideal design of a MH platform for young people in Colombia, with a focus on essential functionalities and visual appearance to effectively address their mental health needs and preferences. The aims were to describe the co-design process and outcomes, to outline the development process, and to conduct preliminary testing of the Minimum Viable Product (MVP) of this youth MH platform.

Methods

In line with the WHO framework for developing digital interventions [22], through a well-tested R&D cycle [15, 23, 24], a youth MH platform was codesigned, developed, and tested. For clarity, methods and results are divided into these three sections.

Recruitment involved convenience and snowball sampling, using peer groups and advisory representatives. Participants represented end-users of the platform (YP, people with lived experience [PWLE]; their supportive others [e.g., carers, family, friends, and educators]; and health professionals (e.g., MH professionals, allied health professionals)

Informed consent was obtained via REDCap®. The study was approved by the Human Research Ethics Committee of Pontificia Universidad Javeriana and Hospital Universitario San Ignacio, protocol number FM-CIE-0103-21.

Co-design

Co-design workshops (CDW) aimed to determine the needs and wants of end-users as well as understanding the functionalities and interface ideas they had for a MH platform. The information collected in these workshops was used to shape the actual development of the platform. What was developed and how it could look like was first determined in a knowledge translation session held after workshops. The meeting included a multidisciplinary team made up of researchers, psychologists, psychiatrists, legal team members, engineers, and YP and PWLE representatives. Mock-ups were then iteratively refined across each workshop. Furthermore, in between these meetings, several sessions with the reference group were held to always have the end-users engaged in the decision-making process.

The CDW were run virtually [25] in a two-hour period with around 6 to 8 participants, using the Google Meet Platform®. Information collection was undertaken via surveys, word clouds, Cartesian planes, sketching pads and scribbling sheets [25].

Qualitative data were analyzed using NVivo and a thematic analysis framework with deductive and inductive coding. An iterative approach guided each phase, and consensus methods were applied at the end of each phase (for example, counts and frequencies). Coding frequencies (CF) were calculated for all subcategories within the main themes. Interrater reliability was measured using NVivo's coding comparison feature, with two researchers independently coding CDW transcriptions until achieving at least fair agreement based on Cohen's Kappa statistic [26]. Once reliability was

reached, the remaining material was individually coded.

Development

Guided by YP's wants and needs, and considerations from the multidisciplinary team, several software prototypes were developed as responsive web applications for mobile and desktop devices. Considerations included assessment of technical feasibility, resource availability, complexity, prioritization, and compliance requirements, among others.

Usability testing was divided into two stages. The alpha prototype testing involved 90-minute, one-on-one sessions using a think-aloud protocol, with task difficulty measured by the Single Ease Question (SEQ) scale [27]. Following this, feedback on corrections and reasonable adjustments was provided to the engineering team for the beta prototype. As this version offered a more refined MVP, beta testing followed the same procedures as the alpha sessions but included a more detailed usability evaluation using the System Usability Scale [28].

For data analysis of user testing, sets of notes were generated of each session according to the interviewer's guide. Each section of all sets of notes was read a first time to identify common themes or recommendations made by participants. Once themes were identified, sections were examined a second time to calculate frequencies (i.e., to identify how many participants gave the same recommendation or expressed a similar opinion). Careful attention was given to negative or divergent opinions, for which number of occurrences were also calculated. This process was carried out for each section of the notes until completing all sections. Notes from alpha tests were examined first, and beta tests second. Microsoft Excel was used for frequency calculation.

Testing

To test the MVP, a naturalistic trial was ran from July 2022 to October 2023, collecting data on use in real-world settings, including feature usage, survey responses, and sociodemographic information. The quantitative analysis employed descriptive statistics to summarize the data. For skewed distributions, the median was used as the preferred measure of central tendency. Variability was assessed through standard deviations and interquartile ranges, while frequencies and percentages were used to summarize categorical variables. The relationships between categorical variables were analyzed using the chi-square test (χ^2) with a 95% confidence level. The analysis was conducted using SPSS version 23 and Microsoft Excel.

Results

A total of 146 participants were part of the co-design (n=110) and development (n=36) of the platform's MVP. Most participants were female (71%, n=103/146), with a median age of 18 (IQR=13). Middle (tier 3 and 4) and low (tier 1 and 2) socioeconomic tiers were the most represented in the sample with 89% (n=130/146) of the individuals. Vulnerable populations such as victims of armed conflict (4%, n=6/146), ethnic minorities (3%, n=5/146) and people with disabilities (1%, n=1/146) were also part of the study.

Co-design

19 CDW were run, a total of 125 source documents were collected and in total 1309 annotations (a) were coded. The deductive coding included 3 themes based on Ospina-Pinillos et al. framework [15, 23]: functionality (actions that can be performed within the platform; a=504 including all subcategories), user interface (a=420) and privacy and data management (a=86). Two themes emerged: technology use for health (a=111) and youth MH problems (a=188). Interrater reliability demonstrated a moderate agreement ($k = 0.490$).

Results on the use of technology for health and youth MH problems are presented first, which

highlighted the potential of a technological platform for YP and provided key insights for the development stage. Afterwards, specific wants and needs regarding functionality, user interface, privacy, and data management are described.

Technology use for health

The majority of participants said they used the Internet for information seeking (e.g., symptoms, tips for managing health concerns, information about healthy lifestyles, reviews about health professionals), teleconsultation (both from the provider and patient perspectives), education, and low intensity treatments (yoga, meditation, breathing exercises). Information was obtained both from formal sources (e.g., eBooks), and informal sources including peer generated information, influencers, and social media. Acknowledging the amount of misinformation on the Internet, participants mentioned developing diverse techniques to triangulate the veracity of the information.

Youth MH problems

During workshops, each participant contributed to word clouds of youth MH problems, which were used to identify 123 concerns and guide platform development (see Figure 1). Most frequently mentioned difficulties are shown in Table 1 and involved social relations (39 mentions), followed by MH disorders (28 mentions), and problems with self-esteem and self-concept (23 mentions).

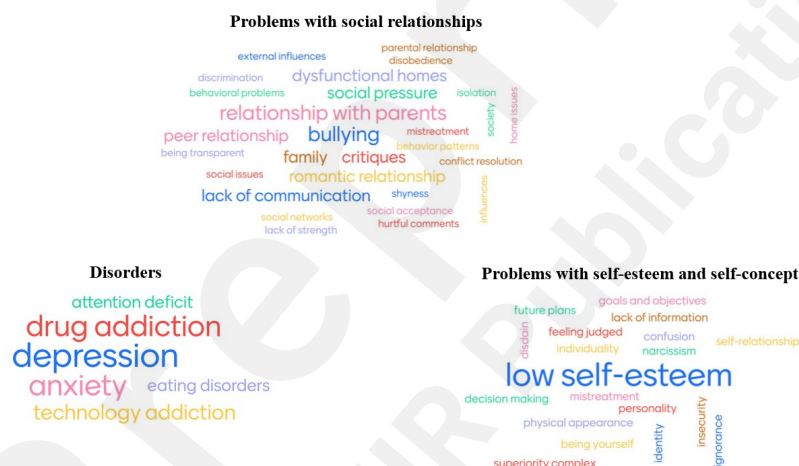


Figure 1. Word Clouds For The First 3 Categories With The Highest Frequency Of Mentions.

Table 1. Most Frequently Mentioned Youth MH Problems in Bogota, as reported by CDW Participants

Category	Count of mentions (n, %)
Problems with social relationships	39 (32)
Family problems	10 (8)
Peer problems	8 (7)
Bullying (including cyberbullying)	3 (2)
Couple problems	2 (2)
Others	16 (13)
Disorders	28 (23)
Substance use	9 (7)
Depression	9 (7)
Anxiety	6 (5)
Eating disorders	2 (2)

Attention deficit	2 (2)
Problems with self-esteem and self-concept	23 (19)
Self-esteem	10 (8)
Self-concept	7 (6)
Life project	6 (5)
Emotional difficulties	16 (13)
Emotion regulation	4 (3)
Loneliness	4 (3)
Stress	3 (2)
Resilience	1 (1)
Recklessness	1 (1)
Hope	1 (1)
Boredom	1 (1)
Sadness	1 (1)
Sexual health	5 (4)
Economic difficulties	5 (4)
Self-harm and suicide	3 (2)
Academic difficulties	3 (2)
Pandemic	1 (1)
Total	123 (100)

Functionality

This theme included 12 subcategories, for which we calculated the CF.

Reliable information

Participants wanted to receive reliable, targeted, customizable, and periodically updated information (CF=10%, a=52/504) delivered in multimedia format. They suggested adapting the platform to users' needs by including an initial test to personalize content and featuring an animated character to guide users and deliver information.

In terms of topics, participants believed the platform should provide general information about MH (e.g., warning signs); specific recommendations for healthy lifestyles (e.g., nutrition); instructions or tutorials for mental hygiene activities (e.g., breathing exercises); infographics, worksheets, and information on leisure activities (e.g., hiking groups). Where relevant, the platform should also redirect users to other, more specialized resources (e.g., fitness apps). Information about helplines, spirituality, alcohol and drugs, as well as sexual health were also mentioned. For informative pieces of high-risk topics, such as sexual abuse or suicidal ideation, allied health and MH professionals stated that clear information should be provided about the formal service routes available in Colombia.

Registration

Participants highlighted the value of choosing to explore the platform anonymously or creating an account (CF=7%, a=36/504). They proposed to have different user profiles (e.g., YP, health professional, caretakers) which would receive targeted content.

They proposed the inclusion of different user profiles (e.g., young people, health professionals, caretakers), acknowledging that a young person's mental health care benefits from a collaborative support system involving both school and family. By incorporating multiple profiles, the platform would facilitate better interaction and coordination among these key stakeholders, ensuring more

comprehensive support for young people.

“I would create the account so that, let’s say, you would have more options, right? Because if you say, “Well, I’m a woman, a teenager, a girl,” it would give you more tailored options, right?”

- Adolescent from a CDW

Virtual care

Participants emphasized the importance of being heard, suggesting the platform offer options for discussing MH with professionals via videoconference, call, or chat, while also highlighting the need for both crises support and follow-up care (CF=7%, a=33/504).

Participants expressed a desire for counseling, guidance, and practical advice tailored to their concerns, with some suggesting virtual care include professional-led activities like meditation or life project discussions.

“I liked the idea of the calls because something similar was done in another project. Two young psychology students would call us monthly or weekly, depending on our schedule, to check in on how we were doing. They even had a project to help us create a life plan, guiding us on what we wanted and providing orientation”.

- Adolescent from a CDW

Others preferred simpler interventions, such as having professionals available to answer specific questions. A blended approach, combining virtual care with face-to-face interactions for initial meetings or home visits, was recommended by some to build rapport and foster empathy.

Screening tests and continuous monitoring of MH areas

Participants prioritized the ability to evaluate their wellbeing through tests (CF=30%, a=153/504) with immediate results to track progress and express their feelings.

“It works well because it might help the person express how they’re feeling at that moment. Maybe they don’t have someone to talk to and share those feelings, like saying, “I haven’t been sleeping well” or “I’m feeling sad” or “This happened to me yesterday.” It’s a way to express yourself while also getting help to feel better and reflect, asking yourself, “What can I do to sleep better?” I’d say it’s a good thing.”

- Adolescent from CDW

They wanted diverse response formats (e.g., text, video, audio), customizable survey reminders, and coverage of various topics like loneliness, physical health, and emotions. MH professionals suggested tracking coping strategies and integrating the platform into therapy. They emphasized that test results should include actionable feedback or resource links to support improvement or maintain progress.

Gamification

Participants emphasized the value of gamification (CF=8%, a=42/504) to engage and motivate YP, suggesting elements like video games, avatars, digital medals, and incentives such as vouchers, with some proposing combinations like avatars integrated into games or tied to rewards.

Social media and advertising

Participants suggested integrating the platform with social media (CF= 13%, a=68/504) through visually appealing and relatable ads on platforms like Facebook, Instagram, TikTok, and Twitter, focusing on common concerns such as sleep and mood. They proposed using hashtags for awareness

campaigns, adding a share button for easy promotion, and collaborating with influencers or YouTubers to donate content to engage YP and normalize MH concerns.

Wellbeing nudges

Participants acknowledged the diversity of MH concerns and coping strategies among YP. Suggestions included a calendar to track results, a virtual trainer to encourage engagement in activities, and notifications with motivational messages and activity reminders (CF=7%, a=36/504).

Emergencies

Participants expressed a desire to either talk to someone immediately or receive guidance from the platform, but they also wanted the option to act independently or support a friend in need. In emergency situations, they emphasized the importance of quickly accessing help (CF=1%, a=3/504). Additionally, they suggested the ability to notify the platform if another user appeared to require urgent care.

Community participation

Participants suggested adding blogs and forums (CF=12%, a=60/504) moderated by health professionals for safety. They wanted to discuss MH and shared interests like soccer or movies, emphasizing that interaction with others could foster support, bonding, and mood improvement.

Chatbot

Participants suggested including artificial intelligence (AI) (CF=1%, a=6/504) in the platform to provide care during afterhours or weekends, offering general advice or linking users to specialized resources. They noted that chatbots could also benefit introverted users who may find it difficult to share their concerns.

Interoperability with local services

Participants recommended integrating the platform with local services (CF=2%, a=12/504), either by referring users to specialized city services or incorporating it into existing programs offered by private and public organizations.

Research and public health surveillance

Participants, particularly MH and allied health professionals, highlighted the research and public health value of a MH platform (CF=1%, a=3/504). They suggested using data from continuous monitoring for epidemiological purposes to improve care for YP and integrating it into health surveillance systems.

User interface

User interface refers to the visual presentation of content and functionalities. Participants stated the platform should be visually appealing, engaging, and responsive, using inclusive language. Lay terms were preferred over clinical jargon. Customization and interactivity were essential characteristics to be considered across all platform functionalities.

The most important aspect for end-users was an eye-catching, aesthetically pleasing appearance. Participants consistently mentioned using images, cartoons, and icons, but emphasized the platform should not appear childish.

Privacy and data management

Regarding data management, participants preferred clear, concise information about how their data would be used, favoring simple language over lengthy, jargon-filled documents, while still adhering to privacy standards. Concerns were raised about obtaining consent for children under 14, who cannot legally provide consent in Colombia. While some younger participants were open to

involving their legal guardians, most preferred to engage independently without parental authorization. Additionally, most parents expressed a desire to access their children's data:

“If she were to use the platform, I would want to know absolutely everything—the good, the risky, the threatening, the happy—everything”

-Parent from a CDW

They acknowledged that children may be hesitant to share their concerns if parents had access to the data, and although most would allow them to use the platform, for some, it could be a sign of poor or declining MH. Some parents indicated they would like to use the platform too, which showcases the multiple ways in which they wished to be involved:

“Each child is a different world, everyone has their own way of thinking, and not everything in life is complete. I believe that both children and us as parents have our flaws or gaps. When looking at the platform, I think it would be great to use it to explore those gaps or the things we sometimes don’t understand about them or wish we could know”.

- Parent from a CDW

Development

Functionality

Reliable information

To expand access to Spanish-language psychoeducation resources, we integrated our platform with Mental Punto de Apoyo [29], the largest repository of mental health materials in the region. This integration allows users to explore a wide range of resources, including videos, pamphlets, and podcasts on mental health topics, along with practical techniques to enhance wellbeing (e.g., meditation).

On our platform, these resources are presented with their title and image. When users click on an image, they are redirected to the Mental Punto de Apoyo website for full access. The repository is regularly updated, ensuring users have access to the latest information.

Additionally, registered users benefit from tailored recommendations based on periodic survey results and can track a chronological record of all suggested resources, strengthening the connection between both platforms and enhancing the user experience.

Registration

We developed a registration feature that allows users to either create an account or continue anonymously. Anonymous users can access general mental health resources but must provide basic demographic details and accept the terms of use. Registered users, however, gain access to additional features on their homepage, including an SOS button, a customizable wellbeing plan, and avatar selection.

During development, parents and caregivers expressed interest in having their own profiles to better support their children. However, this feature was not included in the MVP.

Virtual care

To provide access to virtual care, we integrated the platform with Mentas Colectivas, a free online

program providing counseling and support for individuals aged 14 and older. Accessible at [30], it offers a safe space where users can seek guidance on emotional wellbeing, sexuality, and family planning. Users can connect with a team of students, professionals, and volunteers through their preferred digital contact method—telephone call, web-based chat, or web-based call. Appointments can be scheduled within 72 hours, with up to five follow-up sessions available as needed. For emotional wellbeing counseling, support is provided directly through the platform, including follow-up sessions. Users requiring urgent assistance outside of service hours are redirected to emergency services. For sexuality and family planning counseling, users are seamlessly transferred to a designated website using their platform credentials, with unlimited follow-up sessions available if needed [31].

Screening tests and continuous monitoring of mental health areas

A mental health screening and continuous monitoring feature (“track as you go” functionality) was developed based on key concerns identified by CDW participants (see Figure 1 and Table 1). First-time users, whether anonymous or registered, complete an initial screener using the Kessler 6 [32] survey to assess concerns and distress levels, receiving tailored feedback and psychoeducation through automated algorithms. Registered users can access the continuous monitoring function, selecting from 13 areas (stress, loneliness, wellbeing, emotions, physical activity, sleep, subjective health status, self-esteem, relationships, eating, alcohol and substance use, bullying and sexual and reproductive health) to track their progress. Surveys can be scheduled daily, weekly, or bi-weekly, with a maximum of two available at a time to encourage mindful participation. Registered users also gain access to visual progress charts, including line graphs, gauges, and calendars, with options to filter results by date, view them alongside resource histories, and export them as PDFs.

Gamification

During knowledge translation sessions, we recognized the importance of gamification in enhancing user engagement. However, due to the complexity of developing video games and incentive systems, we focused on implementing avatars as a first step. Users can choose from a set of predefined avatars and update them at any time, allowing for a degree of personalization. While this feature lays the foundation for a more interactive experience, future iterations may explore additional gamification elements to further enhance user motivation and engagement.

Social media and advertising

Recognizing the importance of outreach, we developed a social media campaign featuring ads with cartoons to promote the platform and attract users (see Figure 2). While awareness campaigns and influencer collaborations can further enhance visibility, they were not included at this stage. This initial approach allows us to gauge user engagement and refine strategies for future promotional efforts.

From wellbeing nudges to wellbeing plan

To encourage young people to engage in mental health-promoting activities, we aimed to incorporate wellbeing nudges throughout the platform. Some of these nudges were successfully integrated into the monitoring graphs, providing gentle prompts to encourage reflection and engagement. However, expanding nudges across the entire platform proved challenging.

As an alternative, we developed the Wellbeing Plan, a structured tool inspired by safety plans. It helps users identify uplifting activities, supportive people, and emotional warning signs. Users can personalize their plan with open-text responses and are encouraged to practice beneficial activities when facing challenges. The platform also provides examples of warning signs, such as weight loss or insomnia, ensuring accessibility at all times.

Given development constraints, we prioritized the Wellbeing Plan as the core feature for the MVP, with the potential for further integration of nudges and additional tools in future iterations.

Emergencies

To respond to this need, we designed the telecounseling feature to allow participants to speak with someone immediately from Monday to Friday 7 AM to 7 PM. During off-hours, the button provided continuous access to emergency local services information (e.g., gender-based violence, suicide-related Colombian helplines), ensuring support was always available. Given that the platform is web-based, automatic dialing could not be integrated.

Deferred functionalities

The remaining functionalities were not developed for this MVP due to resource constraints and implementation complexities. Community participation was deprioritized to ensure platform sustainability and focus on essential features like virtual care, as moderation and content creation require dedicated budgets and personnel. AI functionalities were also not included due to technical challenges and safety concerns, as current large language models in Spanish require significant refinements to ensure reliability and user safety. Interoperability with local services was set aside due to the complexity of institutional agreements, data management, and privacy concerns. Lastly, while research and public health surveillance were recognized as valuable, they fell outside the MVP's scope, as they require advanced data management, administrative agreements, and rigorous validation for public health use. Future developments may reassess the feasibility of these features to enhance user experience and support services.

User journey

The user journey (see Figure 2) begins by attracting potential users through targeted advertisements on social media. When users click on an ad, they are redirected to the platform's landing page, where they find general information about the platform, mental health, and wellbeing. From there, they can choose to log in or create an account for full access or continue anonymously with limited functionality. If they opt to register, they are guided through a straightforward sign-up process where they provide informed consent, accept the platform's terms and conditions, and acknowledge Habeas Data regulations for data protection.

After completing registration, users take a screening test designed to assess their mental health concerns. Once they finish the test, they immediately receive feedback on their results and are invited to explore targeted and specialized resources based on their responses. They can also start monitoring their mental health through the "track as you go" feature, which allows them to select areas of interest and continuously track them over time. Based on their tracking results, further specialized algorithms provide tailored recommendations and psychoeducational resources. Users can also request an online counseling session if needed.

Registered users can access additional features on their home page, including the SOS button, a customizable wellbeing plan, and avatar selection. As users continue engaging with the platform, they receive increasingly personalized information, whether by tracking additional areas or adjusting their preferences over time. This ensures that the platform evolves with their needs, offering continuous and adaptive support for their mental wellbeing.

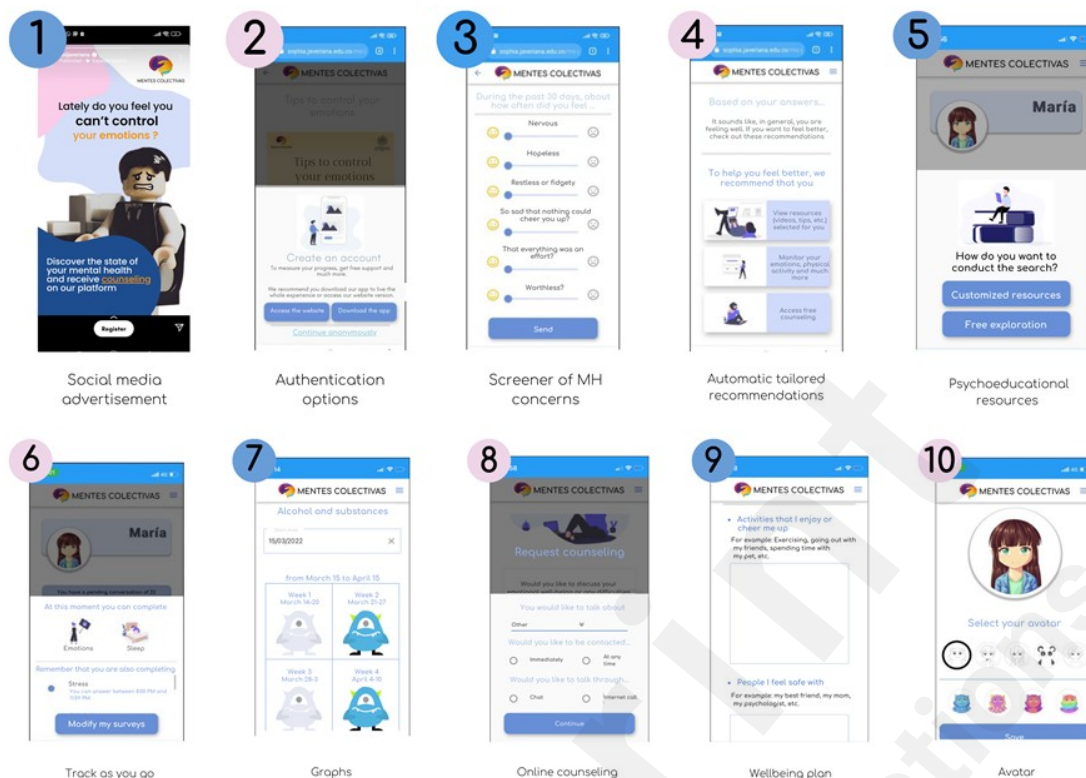


Figure 2. User journey of the platform

Note. Platform screenshots were translated from Spanish to English for clarity. App-version of the platform is currently under development.

Usability results

36 individuals participated in usability sessions for the alpha prototype (n=16/36), and the beta prototype (n=20/36).

Task completion results

In alpha tests, the median task completion time was 43 seconds (IQR=41), with a median score of 1.00 (IQR=0) on the SEQ scale, showing minimal difficulty in performing tasks. The beta tests showed similar results, with a median completion time of 28 seconds (IQR=32) and a score of 1.00 (IQR=1.00) (Table 2). The track-as-you-go surveys generally showed favorable results with short completion times, except for the physical activity test, which had the longest time and highest difficulty. Accessing resources, returning to profiles, and requesting telecounseling increased completion time without impacting the experience (Table 3).

Table 2. Completion times and SEQ scores for tasks conducted in alpha and beta user testing sessions.

Task	Alpha test		Beta test	
	Median ^a completion time in seconds (n ^b , IQR)	Median score (n, IQR)	Median completion time in seconds (n, IQR)	Median SEQ score (n, IQR)
Creating an account	67.50 (16, 43)	1.00 (20, 0)	61.50 (20, 39)	1.00 (20, 0)
Filling the screener of concerns	43.00 (16, 17)	1.00 (15, 1)	34.00 (20, 14)	2.00 (20, 2)

Accessing MH resources	21.00 (16, 55)	1.00 (14, 0)	59.50 (20, 48)	1.00 (20, 0)
Going to My Profile	5.00 (14, 10)	1.00 (11, 0)	6.00 (19, 8)	1.50 (18, 2)
Requesting an online counseling session	44.00 (13, 34)	1.00 (13, 1)	76.00 (19, 37)	1.00 (18, 0)

^aMedian values are used considering the small samples to provide a more accurate representation of central tendency.

^bThe number of participants who performed the task or responded to the SEQ is presented for each task as time restrictions or platform malfunctioning impeded all participants to complete all activities.

Table 3. Completion times and SEQ scores for tasks conducted only in beta user testing sessions

Task	Median ^a completion time in seconds (n, IQR)	Median SEQ score (n, IQR)
Filling the sociodemographic survey	11.00 (5)	1.00 (20, 0)
MH monitoring ^b		
Stress	23.00 (20, 12)	1.00 (20, 0)
Loneliness	16.00 (20, 11)	1.00 (20, 1)
Wellbeing	37.50 (20, 21)	1.00 (19, 1)
Emotions	47.00 (20, 31)	1.00 (20, 1)
Physical activity	51.50 (20, 31)	3.00 (20, 4)
Sleep	18.50 (20, 9)	1.00 (20, 1)
Subjective health status	16.00 (18, 6)	1.00 (18, 0)
Self-esteem	26.50 (20, 17)	1.00 (20, 2)
Relationships	30.00 (20, 19)	1.00 (20, 1)
Eating	27.00 (20, 15)	1.00 (20, 0)
Alcohol and substance use	35.00 (20, 12)	1.00 (20, 0)
Bullying	10.50 (20, 6)	1.00 (20, 0)
Filling the wellbeing plan	102.00 (13, 63)	2.00 (13, 1)
Using the SOS button	15.50 (14, 17)	1.00 (14, 0)

^aMedian values are used considering the small samples to provide a more accurate representation of central tendency.

^bDuring beta sessions, all MH monitoring surveys that the platform offered were tested. An additional test (sexual and reproductive health) was developed after beta sessions had concluded, and thus is not included in this table.

The beta prototype had a SUS median score of 85.0 (IQR=12.5), indicating acceptable usability. Nearly all participants (18/20) found the monitoring surveys easy to use. Most (14/20) found the Avatar functionality visually appealing, though some (7/20) suggested more customization options. The SOS feature was considered useful by all (14/20), with participants suggesting it be made more visible.

Improvements between the alpha and beta build mostly included corrections to the back-end of the platform to solve bugs and reduce malfunctioning. Front-end improvements were limited to changes in the wording of instructions, feedback from test results, headings or descriptions.

Reliable information

Participants (13/16) from alpha user testing sessions found the topics of the tips useful and relevant. Also, they (12/16) liked the images and tips design and described them as striking and pleasant. Two participants believed the tips were generic or random, one of them found the design boring. In beta sessions, participants (16/20) expressed their satisfaction with tips and their content. However, the majority of them (16/20) suggested design changes, including color and images updates, and adding more information to the tips by providing links to additional resources. Tips were not accepted by three participants who did not find them useful, suggested changes to the text and more detailed explanations.

Registration

Most of the participants from alpha testing sessions (14/16) found the account creation process easy. Only one participant was confused by the registration process. In terms of registration options, five participants favored the web version, five preferred the app version, two opted for the anonymous route, while the rest did not express any preferences. The majority (14/16) understood the socio-demographic questions, and more than half (11/16) found the images and questions design aesthetically pleasing. The others suggested making changes, especially regarding the gender question and the text description of the platform. Moreover, three participants thought that the survey should collect information about their motive for consultation. The platform's description was changed based on feedback, motive for consultation was not included due to the platform's focus on promotion and prevention, and no changes were made to the gender questions due to limitations in illustrations availability.

In beta sessions, 9 out of 20 preferred logging in to the platform through the web, and 6 out of 20 chose to access the platform anonymously. All participants (20/20) found the survey easy and clear, and considered the gender question to be acceptable, inclusive, and non-invasive. They made some recommendations related to including more questions or additional answer options.

Virtual care

In alpha user testing sessions, all participants (13/13) were able to easily access the feature. They valued its shortness and simplicity but suggested adding more MH topics in the request form. One participant stated that requesting a session involved too many steps. Due to parametrization issues, no topics were added to the request form. In beta user testing sessions, almost all interviewees (18/19) liked the online counseling functionality for its usefulness and flexibility.

Screening tests and continuous monitoring of mental health areas

In alpha user testing, 10/16 participants found the screener test easy but suggested adding instructions and more intermediate options. Most (11/16) understood the recommended functionalities, though 4/16 had trouble with the monitoring feature. Most (12/16) had no issues completing surveys or sharing information but suggested improving the design, adding options to the emotions survey, and making the surveys list more prominent. For the beta build, instructions were revised, but intermediate options were excluded to preserve consistency with the original scales. The appearance of the feature on the main profile was also revised, changing the wording of the title to increase clarity.

In beta sessions, nearly all participants (18/20) liked the screener of concerns, finding it easy, useful, and interactive. They suggested changes to the visibility of the scale, such as making the slider larger, making the answer options visible or adding instructions (13/20). More than half of the interviewees (12/20) understood the three recommendations given after the test, with the monitoring feature recommendation being the least understood (7/20). Nearly all of the participants (18/20) found most surveys easy to use, and feedback was positive overall. The most difficult survey was Physical Activity (6/20), where participants had trouble making estimates in minutes. They suggested to change the survey to ask about hours; however, due to restrictions to parametrize tests, it was not possible to accommodate this request. Participants also recommended including more targeted resources and additional answer options for the Emotions, Bullying, and Self-esteem surveys, among others. To comply with these recommendations, changes would have to be made to algorithms, which requires investments in time and resources. Thus, this recommendation will be considered for further developments. Graphs were also tested in beta sessions, where the calendar type with icons was the most accepted. Participants suggested changes to the icons for most of the graphs, especially the wellbeing graph (12/20), followed by the loneliness graph (10/20).

Gamification

To prioritize other functionalities, the avatar selection feature was only tested in beta sessions. Most of the participants (14/18) found it visually appealing. Some of them (7/18) suggested more options, such as color customization and adding more avatar types. One participant did not like the anime style.

Integration with social media and advertising

Alpha user testing participants (9/16) suggested changes in the image and colors to make the advertising more striking and more related to the MH topic. Among the options, the most liked one used cartoons (12/20) instead of pictures. This ad was used in beta sessions where slightly more than half of participants (13/20) found it appealing.

Wellbeing nudges

The wellbeing plan was tested in beta sessions. Participants liked the tool and found it useful and easy to manage. They suggested adding examples of signs of distress or default options to choose from.

Emergencies

The SOS feature was only tested in beta sessions, where all participants (14/14) found it useful. They valued the variety of helplines and contact options and suggested making it more visible in the main profile.

Testing

Although the platform was designed for YP, feedback from CDW indicated interest from support individuals, such as parents, caregivers or health professionals, who expressed a desire to explore the platform before their children or patient used it. In response, we decided to collect demographic information from all users, specifying their role or profile. During the naturalistic trial, no age restrictions were imposed, allowing us to analyze data from all users, including adults, as part of the platform evaluation.

A total of 452 individuals entered the platform. Due to technical difficulties (and hence incomplete information), 17 records were excluded from the analysis. There were three registration peaks, the first in November 2022, the second in March 2023, and the third in June 2023. The platform reached 26 of the country's 32 departments, most of the users were from Bogotá (44.3%, n=139/314), Cundinamarca (8%, n=25/314), Boyacá (7.3%, n=23/314), Antioquia (n=15) (4.8%, n=15/314). During the observed period, 435 individuals used the platform, with 314 users registering and 121 using it anonymously. The majority of anonymous users were female (74%, n=89/121) as well as identified to be a young person (26%, n=31/121). Importantly more than half (61%, n=74/121) presented some degree of emotional distress according to the K6 scale (24%, n=29/121 mild, 27% n=33/121 moderate, 10% n=12/121 severe distress) [32].

In relation to those who registered, the median age was 33.6 years (IQR = 23) and most of them (74%, n=232/314) were female. About the role in the platform, 31% (n=66/314) were young individuals, 27% carers (n=84/314), 22% educators (n=69/314) and 21% (n=65/314) were health

professionals. Most users (63.7%, $n=200/314$) presented some degree of emotional distress (22%, $n=68/314$ mild, 22% $n=70/314$ moderate, 20% $n=62/314$ severe distress).

To evaluate the relationship between the level of distress and the selected role, a Chi-Square Test of Independence was executed. In the registered group, the relationship was statistically significant ($\chi^2=37.86$, $df = 9$, $P<.001$), and observed frequencies revealed that young individuals have more severe, moderate and mild levels of distress, while health professionals appear more frequently with low levels of distress. Additionally, an effect size was calculated using Cramer's V, which was found to be .20. While this effect size is statistically significant, it is small in magnitude. In the group of anonymous users, the relationship was statistically significant ($\chi^2=17.043$, $df = 9$, $P=.048$) and Cramer's V test showed a weak effect (.22). The observed frequencies show that YP have more severe levels of distress, carers and young people have more moderate levels of distress, carers and educators have more mild levels of distress, and health professionals have more frequent low levels of distress.

Regarding user engagement, 81% ($n=255/314$) of individuals use the platform for just one day, 9% ($n=28/314$) use it for 15 days, 3% ($n=8/314$) use it for one month, and 7% ($n=23/314$) use it for over a month up to one year. Among the functionalities, the screening test (100%, $n=314/314$) was the most used as it was mandatory, followed by track as you go (38%, $n=118/314$), telecounselling request (32%, $n=102/314$), wellbeing plan (10%, $n=32/314$), SOS button (5%, $n=15/314$), and finally avatar (4%, $n=14/314$). A Chi Square Test of independence was executed between the level of distress and platform's usage. The relationship was statistically significant ($\chi^2=24.54$ $df = 12$, $P=.017$), the effect size was calculated using Cramer's V, which was found to be .16, which means a weak size effect. The observed frequencies indicated that people who only used the platform on the day of registration were more likely to report no discomfort in the emotional distress screening. In addition, severe discomfort was the most common outcome for people who used the platform during their first month of registration. People who used the platform for two months or between 3 and 6 months most often experienced moderate discomfort. On the other hand, those who used the platform for over six months had higher scores in severe and mild discomfort.

Among the 118 individuals that used the tracking component, the most frequently used survey was the emotion tracker (27%, $n=32/118$), followed by sleep (21%, $n=25/118$), stress (17%, $n=21/118$) and physical activity (8.4%, $n=10/118$). The rest of surveys [loneliness feeling ($n=6/118$), wellbeing levels ($n=6/118$), self-esteem evaluation ($n=5/118$), risk of eating disorders ($n=4/118$), health perception ($n=3/118$), sexual health ($n=3/118$), relationships ($n=2/118$) and bullying ($n=1/118$)] represent less than 5% usage. Additionally, only a minority of participants opted to continuously monitor any of these areas, with 47% ($n=15/32$) tracking their emotions, 44% ($n=11/25$) tracking sleep, 24% ($n=5/21$) tracking stress and 20% ($n=2/10$) tracking physical activity beyond the initial usage.

Concerning the baseline (first time) responses, neutral emotion was the most reported with 40% ($n=13/32$), followed by sadness 22% ($n=7/32$), fear 19% ($n=6/32$), anger 13% ($n=4/32$) and joy 6.2% ($n=2/32$). In terms of sleep quality, 96% ($n=24/25$) of the users who answered it reported sleep problems. With respect to the perceived stress, 71% ($n=15/21$) of participants experienced high levels, 24% ($n=5/21$) had some degree of stress and 4.7% ($n=1/21$) had low stress. In relation to physical activity, participants reported spending a median of 10 minutes (IQR= 29.25) doing moderate activity per day, with just 20% of users ($n=2/10$) doing it for more than 60 minutes daily. About sitting time, the median was 210 minutes (IQR= 225).

Of the 102 participants who requested telecounseling, only 26% ($n=27/102$) had a complete counseling session. Regarding the reasons for consulting, the most frequent problem was anxiety, reported by 67% ($n=18/27$) of participants, followed by sadness at 11% ($n=3/27$) and everyday problems 11% ($n=3/27$). In terms of the form of communication, the platform offered 5 types: Immediate chat, chat later, immediate internet call, internet call later, video call and traditional phone call. Chat later and immediate call options were the main forms chosen by users with 48% ($n=13/27$) and 33% ($n=9/27$), respectively. Moreover, the immediate chat option and internet call me later option were less popular among participants with only 19% ($n=5/27$) and 15% ($n=4/27$). Finally, video 3.7% ($n=1/27$) were the least used. During the counseling session just 1 individual (3.7%) reported self-harm and suicide plans which required referral to emergency services.

Discussion

This study aimed to co-design, develop, and test a MH platform tailored for youth in Bogotá, Colombia. Using a rigorous R&D cycle, we actively engaged a diverse sample, ensuring representation across different ages, socioeconomic backgrounds, and marginalized or hard-to-reach populations. Findings revealed strong interest in a youth-focused MH platform that prioritized a visually appealing, user-friendly interface, clear privacy protections, and a range of essential features. These included registration, access to reliable information, virtual care options, MH screening and continuous monitoring, gamification, social media integration, personalized wellbeing plans, emergency support, connections to local services, chatbot interaction, and support for research and public health surveillance. Through knowledge translation sessions, we refined these insights into a platform with 11 key features, including social media integration, registration, MH screening tools, psychoeducational resources, automated recommendations, real-time MH tracking across 13 areas, follow-up graphs, telecounseling integration, customizable wellbeing nudges, an emergency button, and gamification components. Usability testing confirmed high functionality and acceptance, and a naturalistic trial further evaluated real-world engagement and usage patterns. This extensive participatory approach not only ensured that the platform was contextually relevant and user-driven but also demonstrated its acceptability, usability, and potential impact in supporting youth MH.

A notable aspect of our research is the extensive engagement of end-users throughout the co-design process, with a sample size of $n=146$. Existing literature indicates that most studies employing participatory methodologies in the development of MH DHTs are conducted in high-income countries and often involve relatively small sample sizes (<50 participants). In Latin America, a unique instance of co-design was conducted in Colombia, featuring culturally adapted approaches [24]. Despite the inclusive methodology, men and other genders represented less than 30% of the sample. This level of participation aligns with research showing that men tend to seek less MH support [33] and engage less in research [34]. This disparity highlights a research gap in understanding the engagement of men and gender-diverse individuals in MH initiatives, which may also impact their adoption and use of DHTs [16]. Future work is needed to address this gap and ensure these technologies are truly inclusive and accessible to all [16, 35].

Moreover, the ample sample size of this study allowed for the inclusion of individuals who may act as gatekeepers in young people's MH help-seeking journeys, offering valuable insights into how their involvement can support youth. Additionally, the study captured a broad spectrum of perspectives, including diverse and sometimes conflicting opinions—not only regarding design preferences but also in the roles and expectations of caregivers versus YP. These conflicting perspectives highlight a fundamental tension in designing DHTs: balancing the autonomy and

preferences of young users with the concerns and involvement of caregivers. However, this diversity of opinions enriches the research process by prompting critical discussions and leading to more adaptable, inclusive, and responsive solutions. Future work should further explore these tensions and develop strategies to ensure that DHTs effectively support both young users and their caregivers while respecting youth autonomy and privacy [36].

This paper provides a comprehensive description of the participatory processes, enriching the literature as many studies do not provide comprehensive details, thus limiting the reader's understanding of the methodologies employed and the extent of user involvement [37]. Our study sought to provide detailed information of the participation of end-users at every stage of the development process, including design, feedback provision, knowledge translation, decision-making, and testing. These results highlight the need for end-users to be at the center of the design and implementation process, rather than just being mere consultants [22, 23]. In the same line the process achieved to meaningfully involve young people and PWLE in these processes avoiding tokenistic approaches and fostering genuine participation [38].

In terms of usage, engagement is a significant challenge in the eHealth field, with research consistently showing high attrition and low engagement rates [11]. For example, studies indicate that retention rates for mental wellbeing apps are as low as 3.9% after 15 days and 3.3% after 30 days [39]. In our study, we observed a particularly striking trend on the first day of use, with only 19% of users continuing to engage with the platform after the first day. Understanding and improving the first-day experience is crucial for enhancing overall retention and ensuring users continue to benefit from the platform. In our study, participants with higher levels of distress demonstrated a tendency to use the platform for extended periods, aligning with existing evidence [40]. This suggests that the platform may be particularly well-suited for individuals already engaged in the MH care process. Engagement remains a key area for future research and development to address the substantial drop-off after initial use. While our rates of users engaged for longer periods were better than those reported in previous research, possibly due to our thorough co-design process tailored to users' needs and preferences, achieving long-term engagement requires sustained efforts and innovative strategies to keep users motivated and invested over time. Some alternatives were highlighted by our participants which referred to integration with local services (in-person or virtual), which are already available in the country and are known to communities. This synergistic approach could provide more customized follow-ups for service users, while expanding the platform's reach to communities outside of social media, creating a blended approach to engagement. However, integration represents a challenge as it requires coordinated responses, as well as administrative, and data protection agreements.

Our study aimed to contribute to reducing the significant delay in seeking help for MH problems, which averages over 10 years [6] from the first symptom to professional contact. By implementing our platform, we provide a potential tool to facilitate earlier access to support, addressing the urgent need for more accessible and timely MH interventions. Internet-based interventions have shown promise in this regard, offering a cost-effective alternative to traditional care [16]. A meta-analysis indicated that these interventions are marginally more effective than usual care in terms of quality-adjusted life years gained, have similar prices and have a net benefit of \$255 (95% CI \$91 to \$419; $P=.002$) [41]. Further, research has shown that targeted prevention efforts are generally more cost-effective than universal approaches in the youth population [42]. Specifically, interventions that are deployed in community settings (e.g. schools or workplaces) and coupled with specific interventions (e.g. psychotherapy) have proven highly cost-effective for preventing mental disorders in children and adolescents [42].

Our findings support the need for re-thinking services and care pathways as two thirds of the users (both anonymous and registered) show some level of emotional distress. Young users exhibited higher distress levels, with a notable relationship between distress levels and user roles ($\chi^2=37.86$, $df = 9$, $P<.001$) as demonstrated in the results section. These insights emphasize the potential of our platform to identify individuals in need of immediate support. By integrating such technologies with traditional MH services, we can enhance early detection and intervention, ultimately improving MH outcomes. Our findings advocate for the continued innovation, development and implementation of DHT to detect early signs of distress and integrate these tools with conventional care systems to better support young people and those at risk early in the course of illness.

Limitations

In academia, it is difficult to compete with commercial DHT that offer highly intuitive and engaging user experiences, even though their content often lacks solid evidence-based support [43, 44]. A significant limitation of our study is the absence of collaboration with industry partners, which could provide valuable resources and expertise in user-centered design and technology development at commercial standards. Partnerships that leverage industry expertise could result in more usable and high-fidelity technologies [44] whilst also facilitate improved data collection methods, such as the use of phone sensors or wearable devices, to enhance data accuracy and enable more timely notifications advancing to precision medicine [45]. Furthermore, partnerships with industry could help address the critical challenges of innovation sustainability and scalability. Moving forward, it is essential to combine rigorous evidence-based methods with the engaging design features typical of commercial products, along with the advantages provided by industry collaboration, to develop effective, sustainable, and scalable digital health interventions.

Implementation in the Colombian context

Although participants reported good acceptability of the platform, there are several barriers to its implementation in the Colombian context. A key issue is the discrepancy between young people's needs and legal requirements. Colombian regulations mandate parental consent for access to most health services [46]. While some young people were willing to involve their guardians, most preferred using the platform independently. Parents, while desiring access to their children's information, recognized this might deter openness. To address this, an anonymous browsing option was created, requiring registration only for specialized functions like receiving targeted information or telecounselling.

The co-design process was conducted in Bogotá, which, though diverse, may not represent all populations. Further adaptations are needed to tailor the platform to the MH needs of different Colombian communities, including minorities.

Conclusion

In conclusion, this study successfully co-designed and tested a MH platform tailored for youth in Bogotá, Colombia, to promote help-seeking behaviors for MH issues. Engaging a diverse sample of 146 participants from various backgrounds, the platform addressed the preferences of users across different ages and socioeconomic statuses, demonstrating high acceptability and usability. Unlike many studies with smaller sample sizes, our inclusive methodology underscored the importance of involving end-users throughout the development process. However, engagement remains a challenge, with only 19% of users continuing to engage with the platform after the first day. Future work must

enhance the initial user experience and consider differences in age, sex, region, and socioeconomic background to improve long-term engagement.

Despite the promising results, a significant limitation was the lack of collaboration with industry partners, which could provide valuable resources and expertise in user-centered design and technology development. Partnerships could improve data collection methods, address challenges of sustainability and scalability, and integrate rigorous evidence-based methods with engaging design features. While the platform was well-received, implementing it in the Colombian context presents challenges, such as legal requirements for parental consent, which can deter young people from seeking help. Further research and adaptations are needed to tailor the platform to the unique characteristics and MH needs of diverse Colombian communities, ensuring it effectively supports early detection and intervention.

Acknowledgements

Conceptualization LOP, Data collection MS, DLSR, AM, Data curation, MS, DLSR, AM, AB, Formal analysis LOP, MS, DLSR, AM, Methodology LOP. Writing-original draft LOP, DLSR, AM, MS, AB, LG. Writing-review and editing JO, IH, MS, AP, JP, MV, LG. All authors have read and agreed to the published version of the manuscript. AP and JP lead the platform development. The authors would like to thank to Fondation Botnar for their kind funding.

Conflicts of interest

Author JO is both Head of Systems Modelling & Simulation, and Co-Director of the Mental Wealth Initiative at the University of Sydney's Brain and Mind Centre. She is also Managing Director of Computer Simulation & Advanced Research Technologies (CSART) and acts as Advisor to the Brain Capital Alliance. IBH is the Co-Director, Health and Policy at the Brain and Mind Centre (BMC) University of Sydney. The BMC operates an early-intervention youth services at Camperdown under contract to Headspace. He is the Chief Scientific Advisor to, and a 3.2% equity shareholder in, InnoWell Pty Ltd, which aims to transform MH services through the use of innovative technologies.

No more conflicts are declared by authors.

Data Sharing

The authors had unrestricted access to all study data and bear responsibility for upholding data integrity and ensuring the accuracy of data analysis.

Abbreviations

A: Annotations
AI: Artificial Intelligence
DHTs: Digital Health Tools
LMIC: Low-And-Middle-Income Country
MH: Mental Health
MVP: Minimum Viable Product
PD: Participatory Design
PWLE: People With Lived Experience
R&D: Research and Development
SEQ: Single Ease Question
SUS: System Usability Scale
WHO: World Health Organization
YP: Young People

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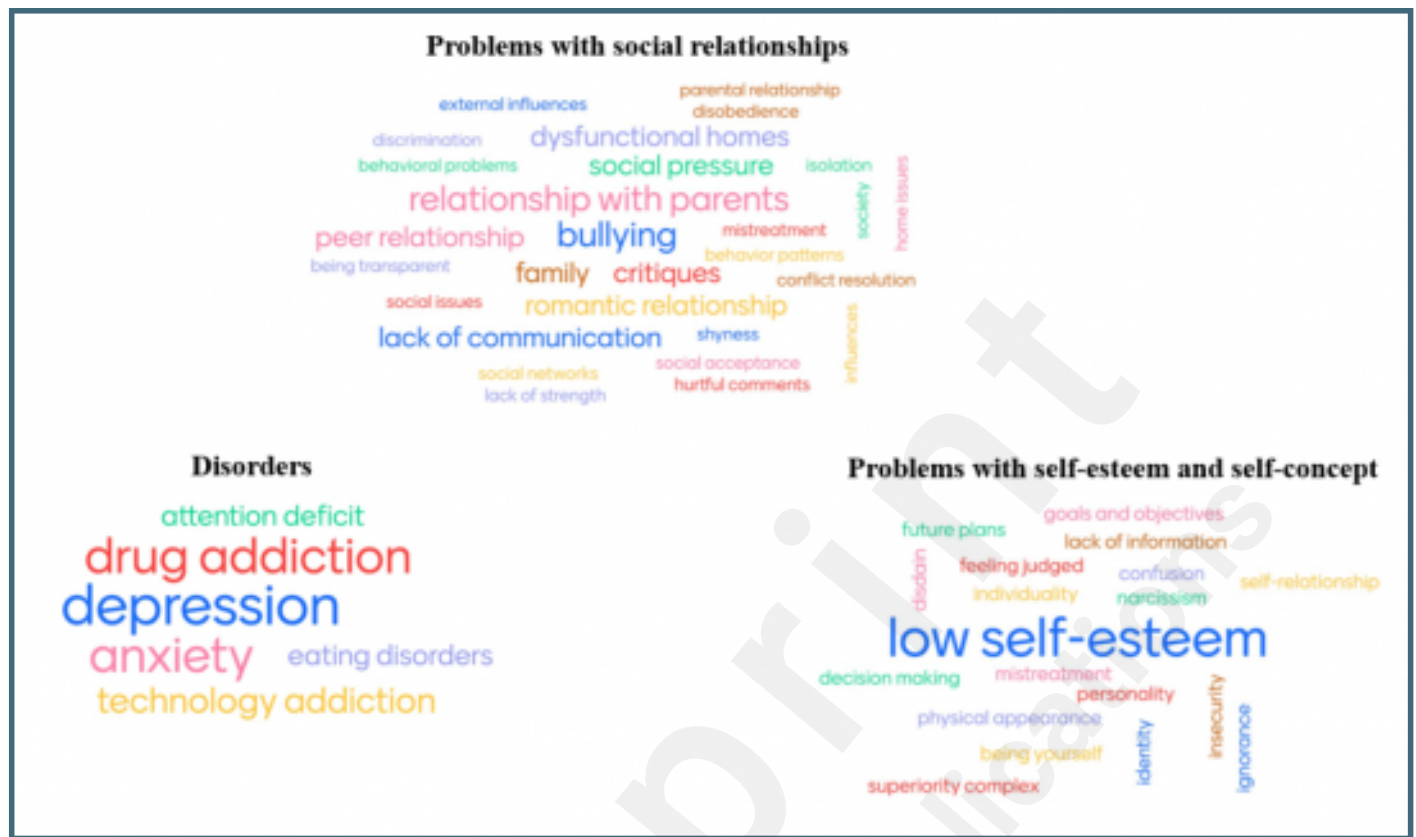
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Supplementary Files

Figures

Word clouds for the first 3 categories with the highest frequency of mentions.



User Journey of the platform.

