

Sambodhan: Addressing Stigma and Accessibility Through a Youth-Centered Digital Mental Health Solution

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ABSTRACT

In the context of growing global mental health challenges, particularly among youth in low-resource settings, digital interventions offer a promising path to improved access and support. However, most existing platforms are designed for Western audiences and rely on clinical language and frameworks that often fail to resonate with diverse cultural contexts like Nepal. This study presents the design and development of Sambodhan, a web-based mental health support platform tailored to Nepali youth. Grounded in human-centered design principles, Sambodhan emphasizes simplicity, emotional sensitivity, and culturally appropriate features such as anonymous journaling, mood tracking, counselor chat, and storytelling. The platform was developed using standard web technologies (HTML, CSS, JavaScript, PHP, MySQL) and tested in a local server environment. Preliminary user feedback from alpha testing suggests that the platform's non-clinical approach and relatable content foster comfort, engagement, and self-reflection. The study highlights the potential of culturally responsive digital tools in bridging mental health care gaps in underserved regions while identifying key challenges related to scalability, privacy, and digital literacy.

Keywords: *Digital mental health, human-centered design, Nepali youth, web-based intervention, mental health literacy, cultural adaptation, stigma reduction*

INTRODUCTION

In recent years, mental health has emerged as a critical public health concern all over the world, surpassing the boundaries of geography, age, and status [1]. The World Health Organization [2] projects that one in every eight individuals worldwide suffers from a mental disorder. Mental health remains stigmatized, not well understood, and under-treated, particularly in low- and middle-income nations. Like most other such nations, Nepal is also experiencing low mental health facilities, shortages of trained professionals, firm social taboos preventing individuals from seeking assistance, and insufficient government spending on mental health facilities [3]. With the development of technology, cellular phones, the internet, and social media are offering individuals new avenues to access mental health care more easily.

Virtual mental health care has worked towards enhancing treatment access in resource-limited settings through helping reduce barriers such as stigma and professional gaps. Digital interventions not only enhance accessibility but also enable mental health services to reach a larger population at a lower cost compared to traditional face-to-face care [4]. While mental health care through the internet has increased, conditions like the digital divide and low digital literacy keep most of the vulnerable population from access on equal terms. Socioeconomic

disparity exacerbates them, inhibiting the delivery of online treatments and prohibiting equivalent mental health care [5].

To address these challenges, this study introduces Sambodhan, a culturally responsive and people-focused web-based mental health and well-being platform tailored to the needs of Nepali youth. The platform's design is informed by cultural requirements identified in the literature, including the use of non-clinical, everyday language; incorporation of culturally familiar emotional categories; and prioritization of privacy and anonymity to reduce stigma. Simplicity of navigation and clear visual cues address varying levels of digital literacy, while content rooted in local narratives fosters relatability and trust. Core features include anonymous experience sharing, mood tracking, a culturally grounded guidebook for parents and teachers, and access to local mental health resources. Each module is intentionally designed to support emotional introspection, encourage help-seeking behavior, and ensure accessibility in low-bandwidth environments. By embedding these cultural considerations into both content and interface design, Sambodhan seeks to create a safe, stigma-free digital space that aligns with the lived realities of young people in Nepal.

LITERATURE REVIEW

Digital mental health platforms have grown rapidly in recent years, expanding access and raising awareness worldwide. Various global platforms, including BetterHelp [6], TalkSpace [7], and Wysa [8], offer online therapy with licensed human therapists as well as AI-powered mental wellness coaching [9]. However, these platforms often rely heavily on clinical terminologies and frameworks, which can discourage individuals seeking informal support rather than formal medical diagnosis. Moreover, many Western platforms operate within culturally specific frameworks that may not fully resonate with users in low- and middle-income countries such as Nepal [10].

In the socio-cultural context of Nepal, designing digital mental health interventions requires addressing several unique cultural needs to ensure adoption and sustained engagement. First, the use of non-clinical and familiar language is critical, as widespread stigma and limited exposure to psychiatric terminology can prevent individuals from seeking help. Second, strong privacy and anonymity protections are essential in a society where disclosure of mental health concerns can lead to social judgment or discrimination. Third, platforms must accommodate varying levels of digital literacy by incorporating intuitive navigation, clear visual cues, and minimal text complexity. Emotional categories should be communicated using culturally grounded metaphors, idioms, and relatable terminology that resonate with Nepali youth. Additionally, content should reflect local narratives, values, and daily realities to strengthen emotional connection and trust.

Given the central role of family and community in decision-making within Nepali society, digital mental health interventions that thoughtfully involve parents, teachers, and trusted community members may further enhance effectiveness. Finally, infrastructural challenges, such as inconsistent internet connectivity, require optimization for low-bandwidth environments and trust-building through collaboration with local institutions and culturally competent counselors.

Several platforms in Nepal have begun to address mental health needs with cultural relevance. For instance, Manobhavana provides personality and behavioral assessments along with coaching [11]. Mankaa Kura is a low-cost, mobile-optimized counseling platform known for its simplicity and user-friendly design [12]. The Antarmen app [13], though once promising, currently faces app compatibility issues that limit its accessibility on many modern Android

devices, reducing its relevance in the current digital ecosystem. Similarly, Ma Chhu Ni, a chatbot developed through UNICEF-supported efforts, focuses on adolescent mental health by providing basic psychoeducation and professional referrals [14].

While online mental health platforms have increased accessibility, most assume that users are ready to engage in formal therapy. This excludes individuals who are uncertain or simply wish to explore their emotional wellbeing without a clinical diagnosis. Many platforms prioritize appointment scheduling and evaluation but lack mechanisms for softer, ongoing emotional support such as mood tracking or anonymous sharing.

In Nepal, where stigma, limited emotional vocabulary, and digital divides persist, these models often fail to effectively reach their intended audience [3]. The challenge goes beyond access; it involves creating platforms that are culturally and emotionally relevant. Many young people need support that feels safe, familiar, and non-clinical.

In light of these limitations, Sambodhan was conceived through a Human-Centered Design (HCD) process that prioritizes emotional and cultural fit beyond mere usability. HCD is known to improve trust, engagement, and contextual relevance by focusing on user needs and emotional alignment [15]. Unlike many global platforms that rely heavily on clinical language and frameworks, Sambodhan employs culturally familiar expressions to lower stigma and create a safe, non-clinical environment. Likewise, while many local platforms focus primarily on counseling or psychoeducation, Sambodhan integrates multiple easy-access engagement features including mood tracking, anonymous experience sharing, culturally grounded parent-teacher guides, stress-relief resources, local helpline access, and optional counseling chats all within a unified interface. This combination of cultural adaptability, emotional support, and multi-modal engagement enables Sambodhan to foster reflection, connection, and growth among Nepali youth on their own terms.

Table 1. Comparision of Digital Mental Health Platform relevant to Sambodhan

Platform	Origin / Scope	Key Features	Limitations / Gaps	Sambodhan's Unique Advantage
TalkSpace	International (USA)	Licensed therapist sessions online	Heavy clinical terminology, Western-centric frameworks, less cultural fit for Nepal	Uses culturally familiar expressions and non-clinical tone to reduce stigma
BetterHelp	International (USA)	Professional online therapy, video/audio sessions	Expensive, clinical tone, assumes readiness for formal therapy	Low-threshold entry with anonymous journaling and mood tracking before therapy
Wysa	International (India)	AI chatbot for mental wellness, guided exercises	AI-driven but still uses structured clinical models; less local cultural adaptation	Human-Centered Design with cultural grounding and localized emotional categories
Manobhava na	Nepal	Personality/behavioral assessments, coaching, counseling	More formal coaching approach; less emphasis on emotional self-expression	Encourages open, stigma-free expression via anonymous sharing and storytelling
Mankaa Kura	Nepal	Low-cost mobile counseling platform, simple interface	Primarily counseling-focused; lacks multi-modal engagement	Combines counseling with tools for prevention, education, and self-reflection
Antarman	Nepal	App-based mental health resources	App compatibility issues, limited access on newer devices	Web-based and lightweight, ensuring accessibility across devices
Ma Chhu Ni	Nepal	UNICEF-supported chatbot for adolescent mental health	Basic psychoeducation, limited interactive tools	Offers richer engagement: mood check-ins, stress tools, inspiring stories

METHODOLOGY

This section presents the systematic approach followed during the development of the proposed Sambodhan. Each phase was designed to address specific aspects of the problem space and to ensure that the final platform is relevant, functional, and user-friendly.

The methodology began with identifying core issues related to mental health accessibility and engagement. This was followed by an extensive literature review to understand existing

platforms and gaps. The conceptualization of the platform was then carried out with careful planning based on Human-Centered Design (HCD) principles. Core features were developed iteratively, and internal testing and refinement cycles were conducted to improve system performance and usability. The key phases of the methodology are summarized in Fig. 1 and step-by-step breakdown of these phases is detailed in the following subsections.

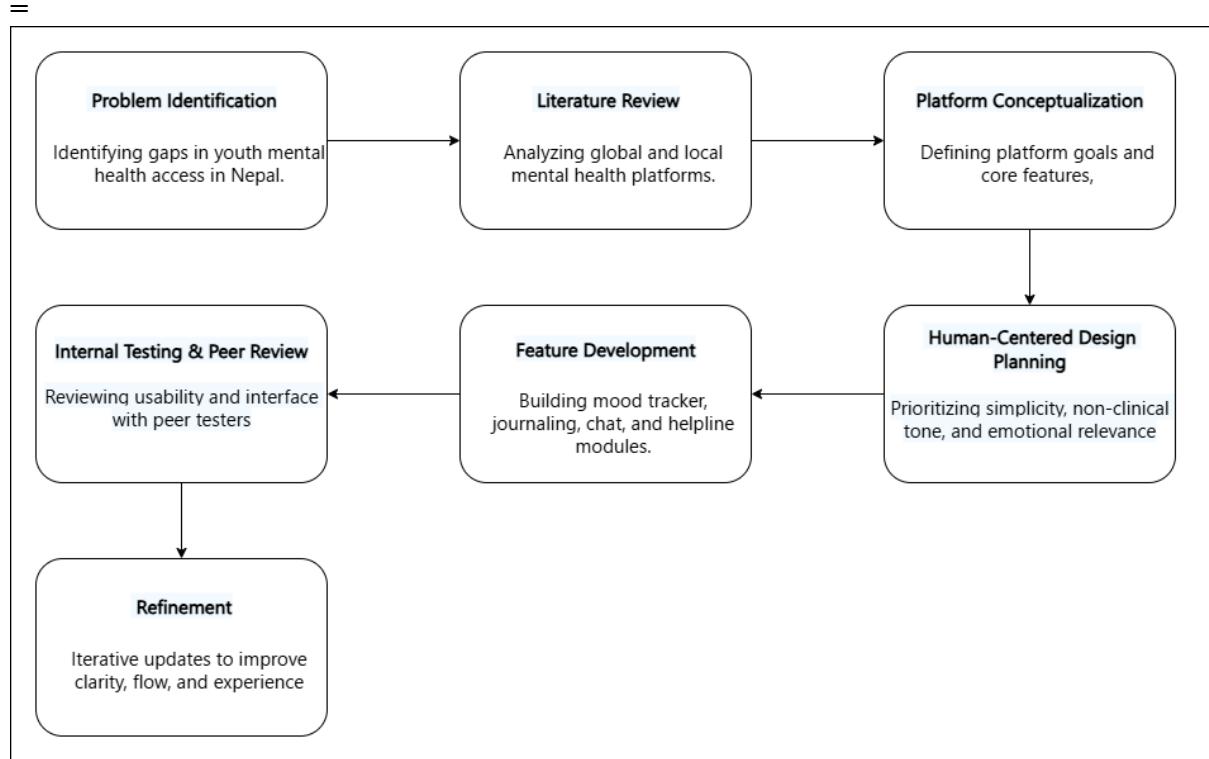


Figure 1: Overview of the methodological process used in Sambodhan's development

Problem Identification

The study began by identifying key challenges faced by youth in Nepal regarding mental health access. High levels of stigma, limited availability of mental health professionals, and lack of culturally adapted tools contribute to a significant gap in support [3]. These issues are further intensified by low emotional literacy and digital barriers.

Literature Review

A review of existing global and local digital mental health platforms was conducted to understand current approaches and their limitations. While international platforms like BetterHelp [6], Talkspace [7], and Wysa [8] offer professional therapy services, they rely on clinical frameworks and language, which may not resonate with users who may be unfamiliar with clinical frameworks or whose cultural context discourages formal mental health engagement. Local platforms such as Mankaa Kura [12], Manobhavana [11], Antarman [13] and chatbot like Ma Chhu Ni [14] provide more contextual relevance but often face usability limitations or narrow feature scopes.

Platform Conceptualization

Based on the identified gaps, a preliminary concept was developed to design a digital mental health platform tailored to the Nepali youth context. The platform was intended to be culturally resonant, non-clinical in tone, and emotionally supportive, with low entry barriers for users unsure about seeking formal therapy.

Human-Centered Design (HCD) Planning

To ensure the solution aligned with user expectations, a Human-Centered Design (HCD) approach was adopted [15]. This methodology focuses on understanding user needs, emotional comfort, and context-specific challenges during the design phase. It prioritizes empathy, iterative feedback, and inclusive design choices to build a trustworthy and engaging user experience.

Feature Development

Based on the conceptual framework and the principles of Human-Centered Design, the core functionalities of the platform were developed with a focus on accessibility, emotional resonance, and cultural relevance. Each feature is designed to provide a supportive digital experience for Nepali youth navigating emotional challenges, without requiring prior clinical knowledge or formal diagnoses.

Figure 2 illustrates the feature architecture of the platform, highlighting the modular design and its key components.

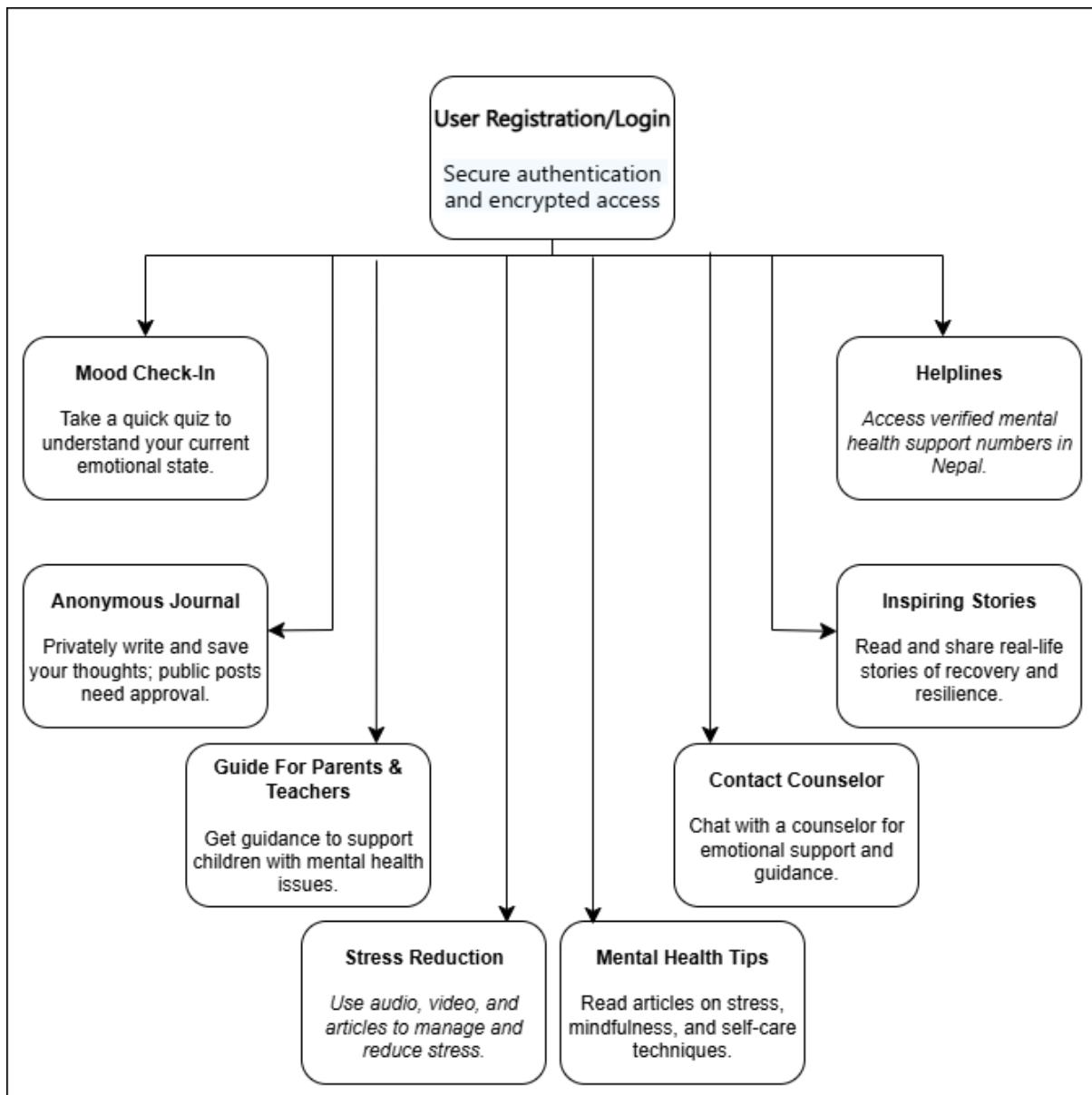


Figure 2: Feature Module of Sambodhan

The following core features were implemented:

- **Mood Check-In:** Allows users to log and track their emotional states through a brief quiz incorporating visual cues and relatable emotional categories.
- **Anonymous Journal:** Enables users to anonymously share their thoughts and experiences. All submissions are reviewed and approved by administrators to ensure safety and appropriateness.
- **Parent–Teacher Guide:** Provides simplified guidelines for parents and teachers on identifying early signs of mental distress in children and adolescents, along with recommended approaches for support and referral.
- **Stress Reduction Tools:** Offers multimedia resources such as audio clips and videos designed to help users manage stress and enhance emotional well-being.
- **Helpline Directory:** Lists verified contact information of mental health organizations and support centers to facilitate timely access to professional assistance.

- Counselor Chat Interface: Enables users to communicate with trained counselors through a secure, text-based chat feature.
- Inspiring Stories: Features real-life accounts from individuals who have navigated mental health challenges, aimed at promoting hope and reducing stigma.
- Mental Health Tips: Provides curated articles on topics such as self-care, stress management, and mental health awareness to support continuous learning and introspection.

Key System Interfaces

To illustrate the platform's design and user experience, key screenshots of Sambodhan are provided below:

Home Page Interface: Offers a simple and clear menu, allowing users to select from core features such as mood check-in, anonymous story posting, counseling chat, and resources. The straightforward design supports easy navigation even for users with limited digital literacy. . Figure 3 below illustrates the user interface of home page of Sambodhan.

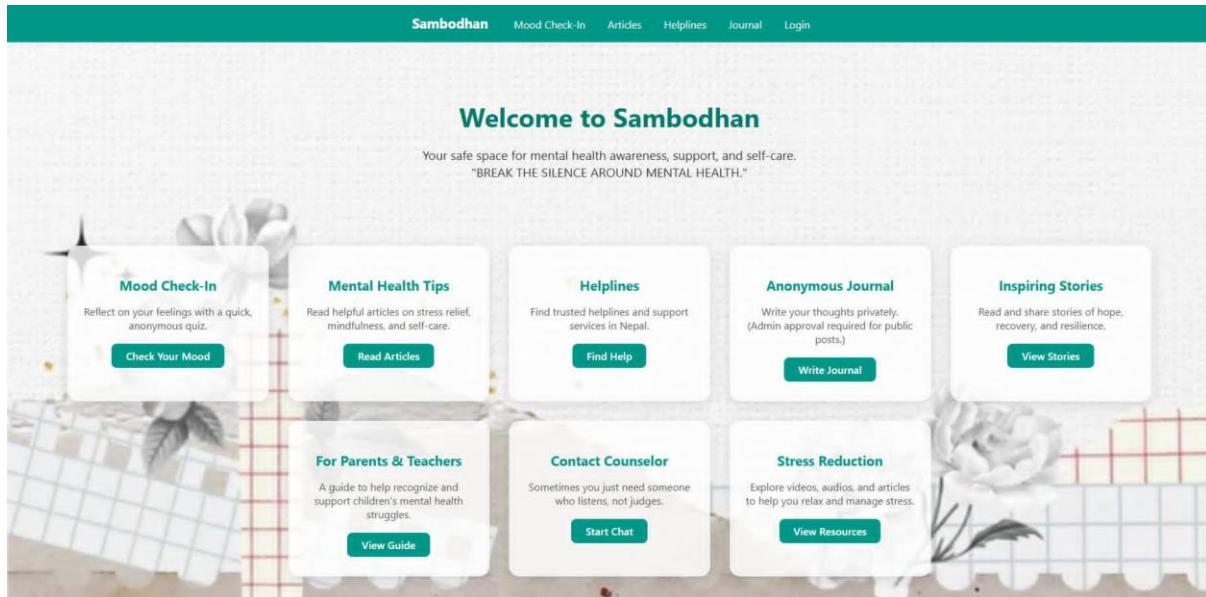


Figure 3: Home Page of Sambodhan

Mood Check-In Feature: Enables users to log their emotional states through a brief questionnaire with culturally relevant visual cues and simple language. This low-barrier emotional tracking supports regular self-reflection without clinical jargon. Figure 4 below illustrate the user interface of mood check-in feature of Sambodhan

🧠 Mental Health & Mood Quiz

Take a moment to check in with yourself

Instructions

Choose the option that best describes how you've been feeling lately. Be honest with yourself - this helps you understand your current mental state.

1. How do you feel when you wake up in the morning?

😊 Refreshed and ready for the day

😐 Neither good nor bad

😴 Tired or unmotivated

2. How has your appetite been recently?

🍽️ Normal or good appetite

🥺 Not much change

🍬 Lost or no interest in food

Figure 4: Mood Check-in Feature of Sambodhan

Anonymous Story Posting: Allows users to share personal experiences anonymously through a moderated journal interface. This creates a safe, stigma-free environment encouraging open emotional expression. Figure 5 below illustrates the user interface for anonymous story posting feature of Sambodhan.

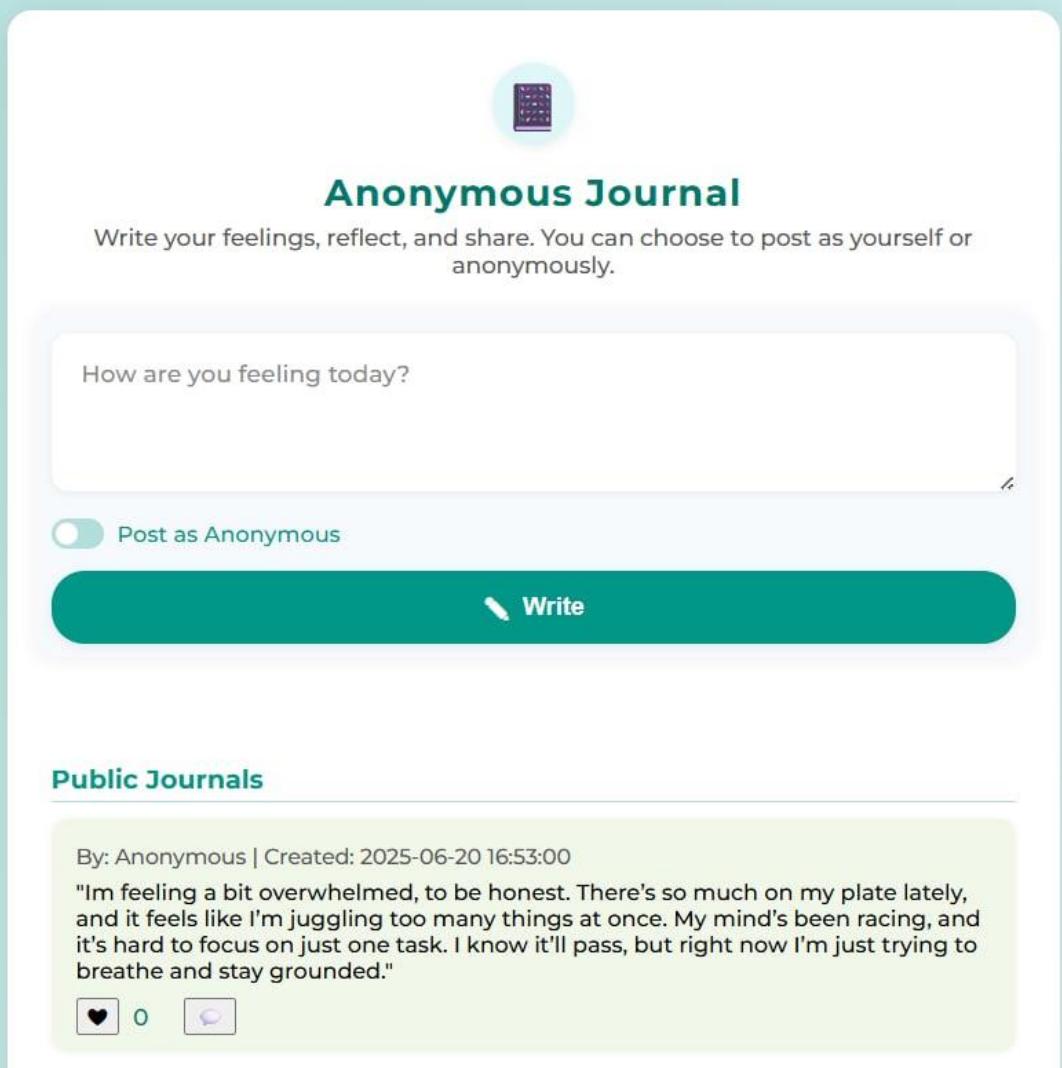


Figure 5: Anonymous Story Posting Feature of Sambodhan

Each interface was designed with Human-Centered Design principles to ensure cultural fit, emotional resonance, and accessibility for Nepali youth.

Technical Implementation

Sambodhan was developed as a web application using widely adopted web technologies, including HTML, CSS, and JavaScript for the frontend, with PHP and MySQL managing backend operations and data storage. The platform was built within a condensed development timeline, enabling the delivery of a robust Minimum Viable Product (MVP) that integrates multiple mental health engagement tools. Its modular design facilitates ease of maintenance and scalability for future enhancements. Essential security practices, such as input validation and session management, were implemented to safeguard user data. This initial version demonstrates high potential for further technical development and expanded functionality to better serve Nepali youth.

Internal Testing and Peer Review

Once the platform's core features were developed, internal testing was conducted to assess basic functionality, navigation flow, and content appropriateness. Preliminary usability checks were performed within the development team to ensure each module operated as intended.

Subsequently, a small-scale peer review was carried out involving a group of college students. The platform was deployed in a controlled environment where participants were guided through the platform and encouraged to freely explore the features. Feedback was collected through structured observation and informal discussions focused on emotional tone, ease of use, relatability of terms, and interface clarity.

The peer review phase provided valuable user-centric insights into how the platform was perceived in terms of safety, comfort, and cultural fit.

Refinement

Based on the feedback gathered during the testing and review phase, several refinements were made to improve both functionality and user experience. Mood categories were reworded to enhance emotional relatability, navigation buttons were simplified for better flow, and redundant content was removed to reduce cognitive overload.

Further adjustments were made to visual elements such as color schemes, and spacing to make the platform more calming and intuitive. Minor layout changes were also implemented to ensure compatibility with commonly used browsers.

These iterative refinements helped align the platform more closely with its intended purpose: to provide a culturally sensitive, emotionally supportive, and technically reliable digital mental health tool for Nepali youth.

RESULTS

The Sambodhan platform, developed as a stigma-sensitive digital tool for mental health, addresses critical gaps in support systems for the Nepalese population. The features offered by the platform are designed with intention to reduce stigma and encourage users to research emotional health in a safe and accessible way.

User feedback from internal alpha testing demonstrated that the platform is intuitive and emotionally supportive. Testers particularly valued the simple interface and the use of non-clinical language, which contributed to a reassuring and comfortable experience.

The anonymous storytelling feature and counselor text facility were identified as the most impactful, providing users with a judgment-free space for self-expression. Additionally, the mood tracker received positive evaluations for enabling users to easily monitor their emotional states.

However, limitations include restricted accessibility due to the current prototype's scope and the need for optimization to improve usability on mobile devices.

Table 2: Usability Evaluation Result for Platform's Features

Feature	Average Usability Score (1–5)	Users Rating (%)	Task Completion Rate (%)
Overall Interface	4.5	90%	95%
Non-Clinical Language	4.7	93%	—
Mood Tracker	4.3	90%	90%
Anonymous Story Sharing	4.6	88%	88%
Counselor Chat Interface	4.2	85%	85%

DISCUSSION AND CONCLUSION

Early piloting and development of Sambodhan show strong potential to fill a significant gap in Nepal's digital mental health landscape. Unlike existing international platforms, which often lack cultural sensitivity and rely heavily on clinical or technical language, and Nepali platforms that primarily focus on crisis response with limited attention to prevention and emotional expression, Sambodhan emphasizes empathy, prevention, and openness tailored specifically for Nepali users.

This approach aligns with international literature highlighting the importance of anonymity, culturally sensitive design, and non-clinical framing—especially where stigma and limited mental health resources are major barriers [3]. Early tester feedback suggests that Sambodhan is on the right track, creating a space perceived as inclusive, nurturing, and safe.

However, the platform remains in its alpha phase and requires further development. Key future priorities include:

- Migrating to cloud hosting for easier and more reliable access,
- Enhancing mobile responsiveness and developing a dedicated mobile app to improve accessibility,
- Conducting pilot trials with a broader and more representative user base,
- Incorporating Artificial Intelligence and Machine Learning technologies to personalize user experiences. Potential AI/ML enhancements include intelligent mood tracking and emotional state analysis, AI-powered chatbots for empathetic real-time support, predictive analytics to identify users at risk, and adaptive content recommendations tailored to individual needs.

Ethical considerations have been central from the outset, with measures such as password encryption and administrator-vetted content ensuring user safety and compliance with ethical guidelines outlined in prior digital health research [17].

Overall, Sambodhan represents an important first step toward a more inclusive, emotionally intelligent, and culturally responsive mental health intervention. With continued development,

extensive field testing, and collaboration with stakeholders, mental health professionals, and educators, the platform has the potential to significantly contribute to reshaping mental health support within Nepal's local context.

REFERENCES

- [1] Moitra M, Owens S, Hailemariam M, Wilson K S, Mensa-Kwao A, Gonese G, et al., "Global mental health: Where we are and where we are going," *Current Psychiatry Reports*, vol. 25, no. 7, pp. 301–311, Jul. 2023. <https://doi.org/10.1007/s11920-023-01426-8>
- [2] World Health Organization, *World Mental Health Report: Transforming Mental Health for All*. Geneva, Switzerland: World Health Organization, 2022. <https://www.who.int/publications/i/item/9789240049338>
- [3] Chase L E, Sapkota R P, Crafa D, & Kirmayer L J, "Culture and mental health in Nepal: An interdisciplinary scoping review," *Global Mental Health*, vol. 5, p. e36, 2018. <https://doi.org/10.1017/gmh.2018.27>
- [4] Naslund J A, Aschbrenner K A, Araya R, Marsch L A, Unützer J, Patel V, et al., "Digital technology for treating and preventing mental disorders in low-income and middle-income countries: A narrative review of the literature," *The Lancet Psychiatry*, vol. 4, no. 6, pp. 486–500, Jun. 2017. [https://doi.org/10.1016/S2215-0366\(17\)30096-2](https://doi.org/10.1016/S2215-0366(17)30096-2)
- [5] Robinson E, Sutin A R, Daly M, & Jones A, "A systematic review and meta-analysis of longitudinal cohort studies comparing mental health before versus during the COVID-19 pandemic in 2020," *Journal of Affective Disorders*, vol. 296, pp. 567–576, Oct. 2021. doi: 10.1016/j.jad.2021.09.098.
- [6] BetterHelp, *BetterHelp: Professional therapy with a licensed therapist*. Teladoc Health, 2025. Available: <https://www.betterhelp.com/>.
- [7] Talkspace, *Talkspace: Online therapy and psychiatry*. Talkspace, Inc., 2025. Available: <https://www.talkspace.com/>.
- [8] Touchkin eServices Pvt. Ltd., *Wysa: Mental Wellbeing AI*, version 3.8.3, Mobile app, Google Play Store, 2025. Available: <https://play.google.com/store/apps/details?id=bot.touchkin>.
- [9] Iwaya L H, Babar M A, Rashid A, & Wijayarathna C, "On the privacy of mental health apps: An empirical investigation and its implications for app development," *Empirical Software Engineering*, vol. 28, no. 1, 2023. doi: 10.1007/s10664-022-10236-0.
- [10] Pacini A & Shrestha P, "Editorial Perspective: Adapting western psychological interventions for children and adolescents in LMICs: lessons from Nepal," *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, vol. 65, no. 1, pp. 116–119, 2024. doi: 10.1111/jcpp.13885.
- [11] Manobhavana, *Manobhavana: Counselling, psychotherapy, and wellbeing service*. People Development Lab Pvt. Ltd. Available: <https://www.manobhavana.com/>. [Accessed: Jul. 9, 2025].

- [12] Mankaa Kura, *Mankaa Kura: Online mental health counseling in Nepal*. People Development Lab Pvt. Ltd. Available: <https://mankaakura.com>.
- [13] KOSHISH – Centre for Mental Health and Counselling Nepal, *Antarman* [Mobile app]. Google Play Store, 2022. Available: https://play.google.com/store/apps/details?id=com.diverse_patterns.koshish_app.
- [14] UNICEF Nepal, *Ma Chhu Ni: A safe space for adolescent mental health support* [Chatbot]. UNICEF Nepal, Jul. 9, 2023. Available: <https://www.unicef.org/nepal/ne/machhuni>.
- [15] Duffy A, Christie G, & Moreno S, "The challenges toward real-world implementation of digital health design approaches: Narrative review," *JMIR Human Factors*, vol. 9, no. 3, p. e35693, 2022. doi: 10.2196/35693.
- [16] Chaulagain A, Kunwar A, Watts S, Guerrero A P, & Skokauskas N, "Child and adolescent mental health problems in Nepal: A scoping review," *International Journal of Mental Health Systems*, vol. 13, pp. 1–8, 2019. doi: 10.1186/s13033-019-0310-y.
- [17] Horn R, Simkhada P, Teijlingen E, & Green S, "Ethical issues in digital health research: A scoping review," *Journal of Medical Ethics*, vol. 48. no. 10, pp. 673-680, 2022