World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(RESEARCH ARTICLE)

Check for updates

MOODMAPPER: Designing and Evaluating an Adaptive Mood Monitoring System to Enhance Stress Recognition and Coping Strategies for Students at South East Asian Institute of Technology Inc

Reginald S. Prudente *, Glyza P. Lastico, Kane Joy Urbayo, Alyssa Kaye Montilla, Joshua Trazo and Jolina Verallo

College of Information and Communication Technology, South East Asian Institute of Technology Incorporated, Crossing Rubber, Tupi, South Cotabato 9505.

World Journal of Advanced Research and Reviews, 2026, 29(02), 1032-1050

Publication history: Received on 10 January 2026; revised on 16 February 2026; accepted on 19 February 2026

Article DOI: https://doi.org/10.30574/wjarr.2026.29.2.0408

Abstract

This study introduces MOODMAPPER, an adaptive mood monitoring system designed to enhance stress recognition and coping strategies for students at the South East Asian Institute of Technology Inc. The system leverages AI-powered mood self-reporting, real-time stress detection, personalized coping mechanisms, and an integrated alert system that connects students to school guidance counselors for timely intervention. MOODMAPPER features a culturally sensitive, user-friendly mobile interface offering mood tracking, AI chat support, relaxation music, and optional inspirational content, alongside a secure web-based dashboard for counselors to monitor student well-being. Usability testing with 90 student users and 10 counselors revealed high ease of use ratings, strong engagement, and satisfaction with culturally aware design and personalized support. While users noted some challenges with system responsiveness and advanced feature navigation, overall results demonstrate MOODMAPPER's effectiveness as a culturally competent mental health tool that supports emotional awareness, stress management, and proactive school-based support. The findings suggest that adaptive, culturally sensitive HCI-driven platforms like MOODMAPPER can improve mental health care accessibility and outcomes for diverse student populations in academic settings.

Keywords: Mood Monitoring; Stress Recognition; AI-Powered Mental Health; Coping Strategies; Cultural Sensitivity; Human-Computer Interaction

1. Introduction

1.1. Background and Context

Human-computer interaction (HCI) is about how people use and interact with computer systems (Rapp 2023). Apart from just easing the accessibility and functioning of the system, the main aim of the HCI-related research is to generate user experiences that are in concordance with their individual level of knowledge and goals (Tekade et al., 2022). HCI stands for human-computer interaction, and its origins can be traced back to the middle of the 20th century when the majority of experts interacted with computers via command-line interfaces (Moholkar et al., 2024). The HCI domain has been continuously evolving and transforming due to personal computing developments, mobile and ubiquitous computing trends, and the most recent broad acceptance of artificial intelligence (Carayannis, 2019).

HCI studies employ an extensive selection of theories, tactics, and strategies to achieve the three goals: comprehend people, design interactions, and evaluate systems. Sometimes, methodological investigations into HCI serve as a vehicle for uncovering current state-of-the-art apps and design processes (Dhakecha, 2022). The focus is on the creation of the interactive systems that satisfy users' needs, wants, and physical, mental, and behavioral characteristics (Pushpakumar

* Corresponding author: Reginald S. Prudente

et al., 2023). By using these HCI methods, one can develop an interactive, adaptable mental health platform like MOODMAPPER that offers stress detection, real-time mood monitoring, and personalized coping strategies for each student's unique requirements. Such a strategy is in line with broader societal goals that aim at empowering students to become agents of their own well-being, normalizing mental health care through technology, and giving educational institutions the required efficient resources to support a diverse student body in an inclusive and respectful manner.

1.2. Research Problem

This research presents MOODMAPPER, an adaptive mood-monitoring system that uses AI to detect stress, track moods in real time, and deliver personalized coping strategies. The system aims to help the students of the Southeast Asian Institute of Technology maintain their mental health by stress detection, real-time mood tracking, and customized coping mechanisms. A lot of students are overwhelmed by stress and their emotional health. Although current mental health apps are available, they generally do not offer user-centered, culturally sensitive designs that are specifically tailored to the users' social and academic contexts. Furthermore, the paper argues that most of these applications lack integrated systems that can directly connect students with school support services for a prompt intervention.The goal of the project is to design an intuitive, culturally sensitive platform that empowers students to take charge of their mental health proactively and thus, provides immediate support and intervention in the academic community. The platform is meant to integrate AI-powered mood self-reporting and chat support with real-time monitoring by the school's guidance office.

1.3. Research Questions and Objectives

- How does the use of MOODMAPPER's AI-powered mood tracking and personalized coping mechanisms improve the ability of South East Asian Institute of Technology students to recognize and manage their stress?
- What positive outcomes on student mental health and immediate intervention would result from the integration of real-time alerts to the school guidance office?
- How do the student-focused and culturally aware design elements of MOODMAPPER influence students' satisfaction, engagement, and willingness to continue using the platform?

1.4. Objectives

- To develop MOODMAPPER, a personalized mood tracking instrument that helps students monitor their feelings and gives them tailored coping strategies for mental health improvement.
- To develop an AI-powered chat support and alert system that allows students requiring help to quickly contact the school's guidance office.
- To create an easy-to-use, culturally aware interface that recognizes different value systems, motivates students' involvement, and generally enhances users' satisfaction.

1.5. Justification and Significance

This research deals with the challenges related to the field of Human-Computer Interaction (HCI) of designing a mental health support system that is not only culturally aware and adaptable but also specifically tailored to students of the South East Asian Institute of Technology. MOODMAPPER is a groundbreaking tool that leverages AI-powered mood tracking along with real-time intervention instruments and personalized coping strategies to elevate students' emotional well-being. To fill the void between students' mental health needs and access to professional help, MOODMAPPER has integrated a web-based monitoring platform that is readily available to the school's guidance office. Through the focus on culturally sensitive design that comprises user-customizable features and optional motivational content, the device will undoubtedly attract a diverse range of students from different backgrounds, thus facilitating meaningful engagement and continuous usage. Besides the evident benefits for mental health, the project is a valuable source of design principles for the creation of user-centered, context-aware tools that address the academic communities' mental health needs. The results will provide significant implications for the technology-driven interventions targeting psychological well-being in marginalized student populations and, thus, will guide the development of a more proactive, inclusive approach to mental health care through interactive technology.

2. Literature review

2.1. Mental Health Challenges and Mood Monitoring Among Filipino Students

Mental health issues of students have been the foremost global concern due to the pandemic. The students' mental well-being around the globe has been severely impacted by the COVID-19 pandemic, leading to an increased incidence of

anxiety, depression, and general distress. The research on the Philippine students revealed that such problems as anxiety and depressive symptoms also increased in the student population. The rate of suicide attempts among youth in the Philippines was on the rise from 2013 to 2021 (Gonzalo et al., 2024). In 2023 a research was conducted to find out the impact of the COVID-19 pandemic on the emotional wellbeing of Filipino university students and the research mainly focused on the frequency of stress, anxiety, and depression symptoms during the adjustment to limited face-to-face classes (Miranda & Tolentino, 2023). Another study about coping mechanisms sources of Filipino college students discovered strong positive academic stress correlation with various coping styles. These include both active and passive emotional coping as well as active and passive problem-solving coping strategies (Dulay et al., 2023). A grounded theory study in 2022 explored the mental health issues of pandemic-affected college students in the Philippines. Major themes identified by this research were anxiety and depression, the importance of God as a source of support, and the worth of self-awareness and self-acceptance (Cordero, 2022). In 2024, a research was conducted to translate and validate the Depression, Anxiety, and Stress Scale-21 into a Filipino language to be used as the instrument of measuring mental health symptoms among Filipino university students during the COVID-19 pandemic (Aruta et al., 2024). Still, most of these modern technological devices and applications have limitations in that they are not culturally sensitive to the Filipino students which affects their local implementation and user engagement.

2.2. Culturally Sensitive and User-Centered Design in Mental Health Applications

The development of mental health applications is gaining insight into how significant it is to integrate culturally sensitive, user-focused design principles in order to enhance accessibility, effectiveness, and user participation. The digital mental health solutions thus brought about are not only valid from a clinical perspective but also compatible with the diverse needs, values, and communicative preferences of the groups that these solutions intend to serve (Marwaha & Kvedar, 2021). When designing mental health applications that are culturally sensitive, one has to consider the conversion of the intervention into one whose cultural norms, beliefs, and values of the targeted demographic can be identified (Nittas et al., 2024). This is because culture influences the individuals' experiences and understanding of mental health immensely (Gama & Laher, 2023). Non culturally tailored health tools if used in diagnosis and treatment of some conditions, effectiveness will go lower, at the same time they will also have a hard time in accessibility (Marwaha & Kvedar, 2021). According to the research, people from different cultural backgrounds especially youth, are burdened with a mountain of problems before they can access mental health services. Providing youth with digitally-based culturized resources can help the youth to overcome the barriers since through resources the structural and attitudinal barriers will be reduced (Povey et al., 2023; Soubutts et al., 2024). Accordingly, designing apps which take account of these cultural differences will be the most effective way of ensuring that the app works perfectly and the users get the intended results (Gama & Laher, 2023). It reflects the main HCI goals of developing technology that is concerned with and responsive to users' needs.

2.3. Integration of AI and School-Based Support Systems in Mental Health Interventions

The rising rate of mental health problems among students globally has led to the use of Artificial Intelligence in the school support systems as a new way to solve these problems (Hao et al., 2025; Zafar, 2024). Educational institutions are trying AI-based solutions to offer easier, more tailored, and quicker mental health help. Detecting students who might be struggling with mental health issues such as self-harm and suicide is one of the primary goals of artificial intelligence in academic institutions (Ayer et al., 2023). AI-powered instruments are designed to monitor student behavior and identify potential problems, thus enabling prompt intervention. Moreover, generative AI is always there to talk with a lonely and sad person and can effectively replace the traditional methods of giving emotional support as it provides immediate answers and accessibility in the learning environment (Chan, 2025).

Chatbots as a foremost application area of AI have demonstrated the capacity to improve students' well-being and decrease their psychological issues such as anxiety, depression and fear (Alsayed et al., 2024). These tools are characterized by accessibility, low cost, and 24/7 availability, thus they are very valuable means in the field of education, where resources may be scarce, (Alkhatib et al., 2024; Chan, 2025). Moreover, AI can redefine the link between academic attendance and mental health by implying that those who use AI tools for their mental health are actually in good mental health (Albikawi et al., 2025). The influence of AI on mental health is also a step forward for both students and teachers, in particular, within the area of sports education, by helping solve some issues that young people might encounter regarding their mental health (Lei et al., 2023). The combination of personalized digital assistance with an offline real-world intervention has been recognized as a potential solution for the problem of mental health in schools in the Philippines. This is particularly the case for places where accessing mental health professionals is difficult.

2.4. Relaxation and Mindfulness Features to Support Emotional Well-being

One method that has consistently been successful in alleviating the symptoms of anxiety and stress is the incorporation of natural sounds in relaxation techniques. Indeed, the study indicates that those who are surrounded by natural acoustic environments that include the sounds of birds, the rustle of the wind, and water, to name a few, not only rate these sound stimuli more positively but also see these surroundings as restorative, which in turn leads to better emotional states (Ratcliffe, 2021). These auditory experiences, which are often perceived as relaxation symbols, can be accompanied not only by lowered blood pressure, heart rate, and respiratory rate but also by the individual's reports of reduced stress and anxiety (Gilmour et al., 2024). Moreover, research has shown that certain natural sounds, such as water flowing and birds singing, that initially help stress recovery, can also elevate psychological well-being (Bai & Zhang, 2024; Liu et al., 2024). Nature sounds influence a person's mood and also have an impact on a person's cognitive function, especially when one is mentally tired (Ratcliffe, 2021). In addition, music therapy normally engages the use of music to bring about psychophysiological changes that ease the symptoms of anxiety and depression and, at the same time, stimulate the parasympathetic system, which, eventually, leads to relaxation (Witten et al., 2022). People being able to calm themselves quickly and noticing the very first signs of tension is an indispensable factor in the prevention of the aggravation of mental health problems (Asselmann et al., 2024). When individuals perform such exercises that are simply accessible, they hence are able to improve their self-regulation skills which are the fundamental skills required for dealing with everyday stressors and for emotional well-being in the future (Toussaint et al., 2021).

3. Methodology

3.1. Research Design

This study will apply a descriptive quantitative method to measure user interaction, engagement, and satisfaction with the MOODMAPPER platform. Emphasis will be placed on the system's adaptive mood monitoring, AI chat support, and culturally aware features as means of raising mental health awareness among students. Here, the system's design features will be considered the independent variables, while user engagement, perceived usability, and coping effectiveness will be the dependent variables. Such a model makes it possible to accurately assess users' reactions to the platform's mental health support features.

3.2. Participants

The participants will be undergraduate students of South East Asian Institute of Technology who are the active users of the MOODMAPPER mobile application, and guidance administrators who use the web-based monitoring system for the support and counseling of students. 90 students will be randomly selected from different academic years and programs to represent the users' perspective in sharing the system's usability. In contrast, all the guidance administrators (approximately 10) will be welcomed to participate and share their views regarding the web platform's usability and their authority. This procedure ensures that the mobile app and the web system's usability are evaluated from the perspectives of the student users and the support staff.

3.3. Data Collection

Research information is going to be gathered with the help of structured quantitative questionnaires. These will also be comprised of the items measured on the Likert scale. The questionnaires aim to measure such variables as ease of use, perceived usefulness in mood tracking and stress recognition, satisfaction with coping strategy recommendations, and the cultural appropriateness of features like inspirational content and relaxation music. The data collection process will be digitally done through online survey tools, making it very convenient for the participants to take part in the study.

3.4. Data Analysis

Descriptive statistics like means, standard deviations, and frequencies are the statistics the study plans to employ in order to recognize the trends and patterns of user engagement and satisfaction which will be the quantitative data collected. Additionally, there could be comparative tests of male versus female students performed to figure out the variance in the system's usability and acceptance. This method will show how differently genders interact with MOODMAPPER thereby assisting in identifying not only the benefits but also the weaknesses that are specific to each group.

3.5. Ethical Considerations

This research observes moral principles strictly and it is particularly concerned with the privacy of the participants and that the participation is of their own accord. Every participant, before the actual data collection, is going to be reminded of their rights through the informed consent form which they have to sign. The informed consent form explicitly mentions the right to leave the study at any time without any negative consequences. In order to maintain the privacy of the participants, all the data that have been collected will be stripped of any identifying information. The research will also be aware of and sensitive to different cultures and will follow the strictest moral codes when dealing with students and staff members from the schools that take part in the study..

4. Advanced hci design

4.1. System Architecture

The MOODMAPPER system's HCI-driven design aims to support student mental health by providing an adaptive, real-time mood monitoring and stress recognition platform paired with personalized coping strategies. The system is designed to facilitate interaction between students and the school guidance office using a mobile application and a web-based monitoring system. It has a structure composed of several key components to ensure responsiveness, ease of use, and cultural appropriateness.

Key Components Include:

- *Client Side (User Interface):* This is the primary front-end interface that is available by mobile devices. The interface is culturally aware and user-friendly, enabling students to report their mood every day, have access to chat support available on AI, offer them specific coping skills, play calming nature sounds, and optionally read inspirational texts that avoid imposing beliefs on various students.
- *AI Mood Analysis and Chat Engine:* This core module is an AI-based and natural language processing technology that processes mood data and chat conversations. It identifies trends in stress and key emotions, gives individual recommendations, and alerts in case of necessity.
- *Guidance Admin Web Interface:* A secure web interface platform to be used by guidance counselors and administrators. It enables tracking the mood data of students and the AI system sends automatic alerts to help students proactively and provide counseling in time.
- *User Management:* The user management is in charge of registering users, identity verification, and user roles. This system will distinguish between students and guidance staff to manage access and customize user experiences.
- *Notification and Alert System:* This is a system that delivers reminders, motivational messages and automatic alerts to the guidance office whenever the AI recognizes the existence of severe distressing emotions, to ensure that a prompt response is taken.
- *Backend Database*: A secured and central database containing user profiles, mood logs, chat transcripts, coping strategies and settings of the system. It protects privacy and ensures the integrity of data.
- *Offline Mode Manager:* This is to make sure that the application can be used even without the constant network connection, to do so the application has to be set to synchronization with the network whenever it gets some connection and then the resources that are needed by the application can be stored to be used in the absence of the network.

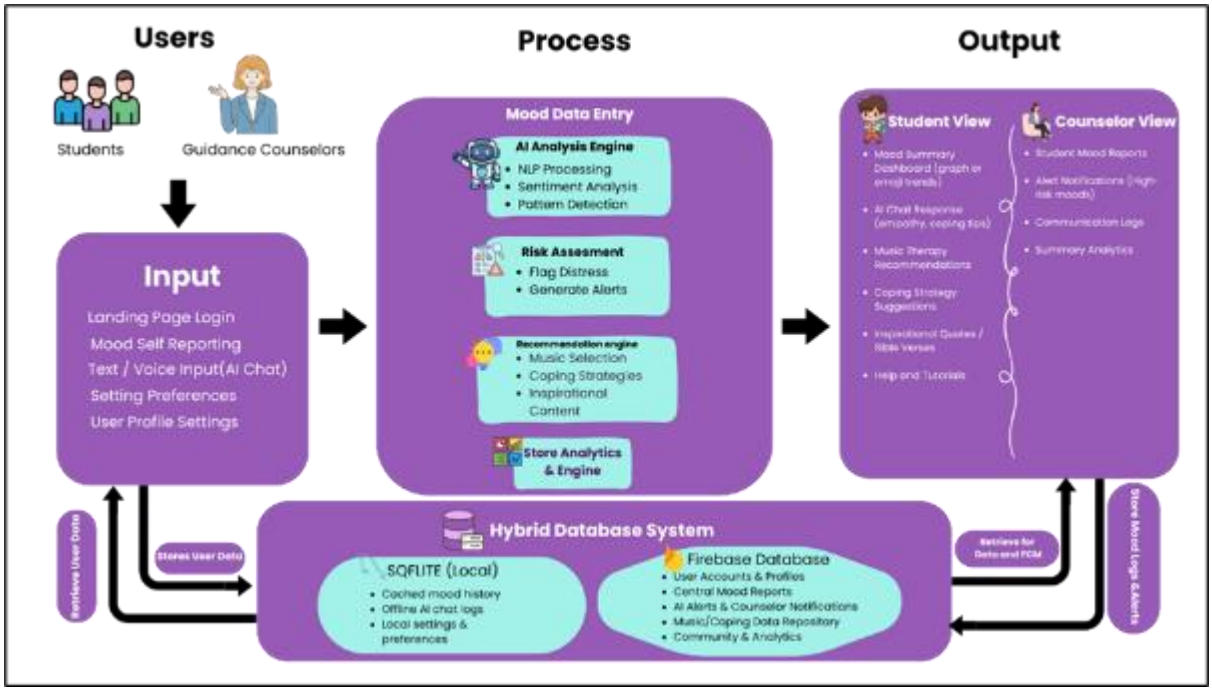

Figure 1 The MOODMAPPER system, which links students and school guidance counselors via chat and AI-supported mood self-reporting, is shown in the diagram. An AI conversation and mood analysis engine, a guidance admin web dashboard, alert and notification systems, user administration, a secure backend database, and a mobile user interface for students are all included in the system. When AI recognizes important keywords in student chat messages, it instantly notifies guidance counselors, allowing for prompt action

4.2. Features and Functionalities

The Features and functionalities of the of the MOODMAPPER system are as follows:

- AI-Powered Mood Self-Reporting

Through a daily mood self-reporting scale, students track and understand their feelings and the stress that accompanies them.

- AI Chat Support

Students could be supported by an AI chatbot 24/7 in dealing with their emotions. The AI keeps track of chat conversations, looking for instances of extreme emotional distress, including suicidal ideation.

- Automated Alerts to Guidance Counselors

Once the AI identifies critical words in a conversation, it automatically informs the school's guidance officevia a secure web-based interface about the situation, allowing the office to make a timely and appropriate intervention.

- Relaxation and Music Therapy

With the help of an app, students could listen to relaxing nature sounds or a mellow music track to attract emotional balance and stress relief.

- Optional Inspirational Content

A daily dose of inspirational Bible verses is offered to students, who may also turn off this feature if they prefer not to be disturbed by their religious beliefs.

User-Friendly, Culturally Sensitive Interface

This tool is designed to be easy and culturally respectful, encouraging regular use and interaction among students from different cultural backgrounds.

- Secure Web-Based Admin Dashboard

Counselors in charge of guidance could securely access student alerts and chat histories, thereby enabling them to monitor the most vulnerable students and offer assistance promptly.

- Data Privacy and Security

Every mood report, chat log, and alert is done with security measures in place so as to uphold privacy and data protection standards.

4.3. User Interface Design

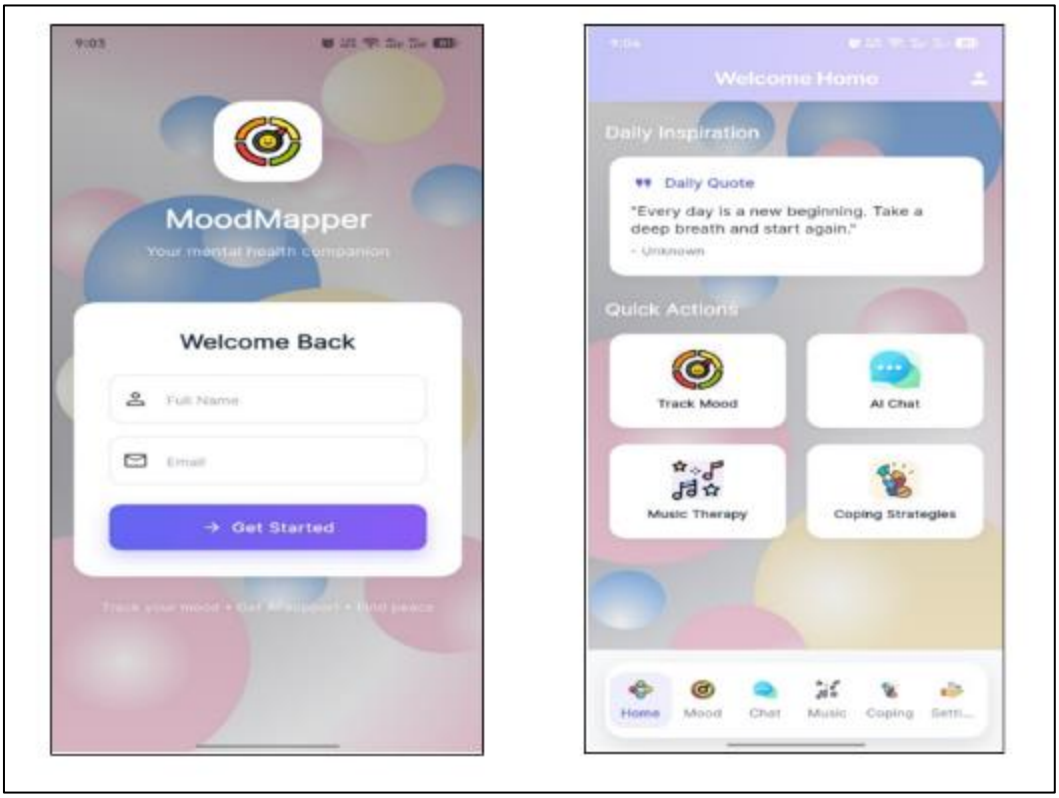

Figure 2 Landing page of MOODMAPPER is displayed

In this figure, the landing page of MOODMAPPER is displayed, where students can log in to the app and access the main features such as mood tracking, AI chat support, music therapy, and coping strategies.

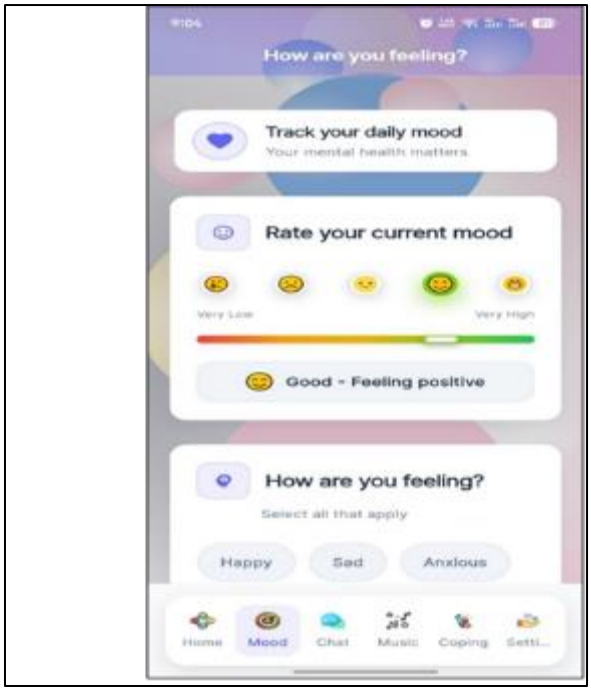

Figure 3 Mood Self-Reporting Screen,

In this figure, Students can record their daily mood using a simple scale and optional notes to track emotional patterns

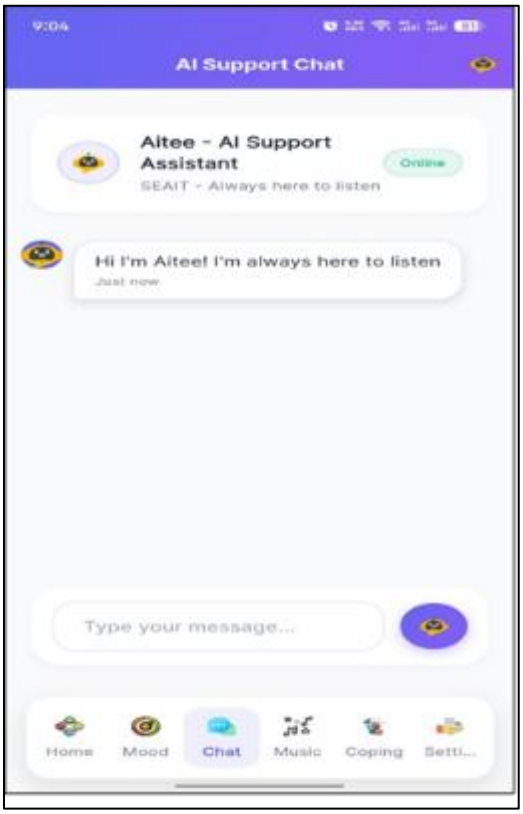

Figure 4 The AI Chat Support Interface ,

In this figure, Students can chat with the AI anytime to share feelings, get supportive responses, and receive personalized recommendations

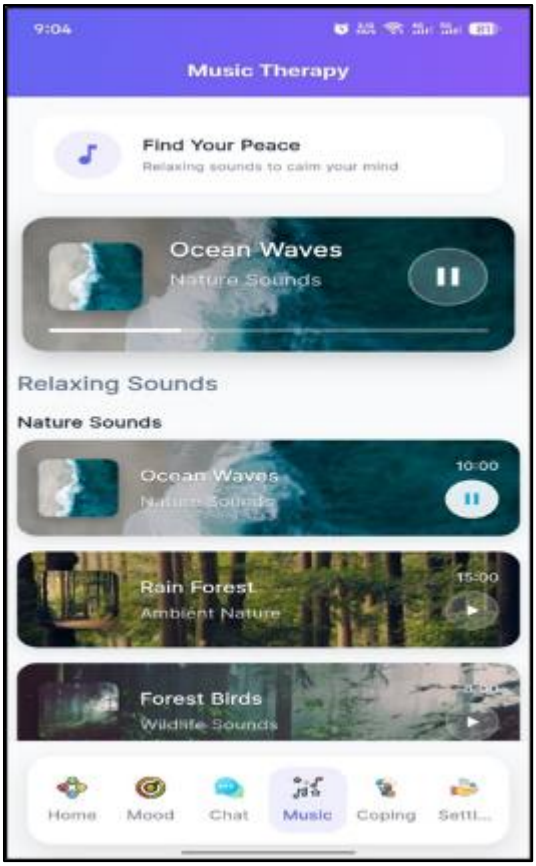

Figure 5 Music Therapy Screen

In this figure, Provides relaxing songs and nature sounds to help students relax and reduce stress.

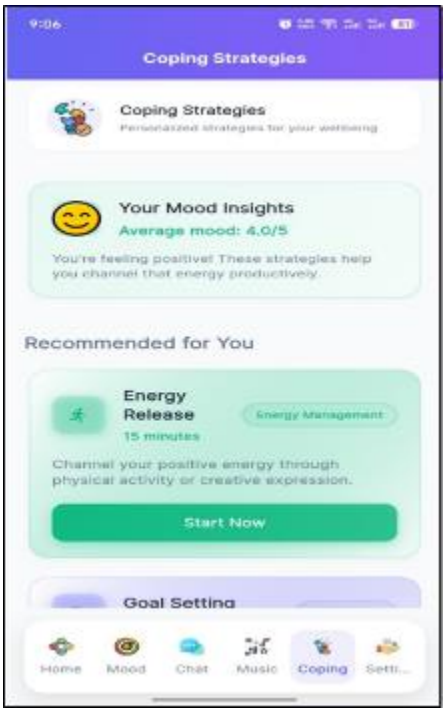

Figure 6 Coping Strategies Page ,

In this figure, Displays personalized coping methods based on the student's mood and stress level to help manage emotions effectively.

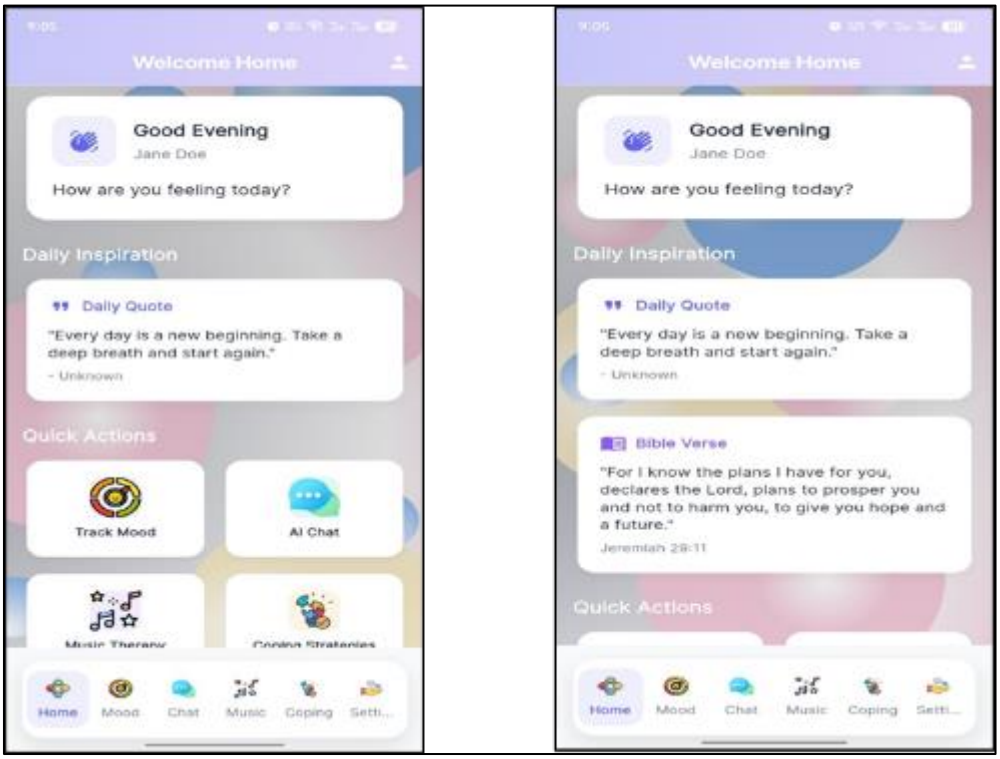

Figure 7 The Inspirational Content Settings, Lets students enable or disable daily inspirational quotes and Bible verses, respecting different beliefs and preferences

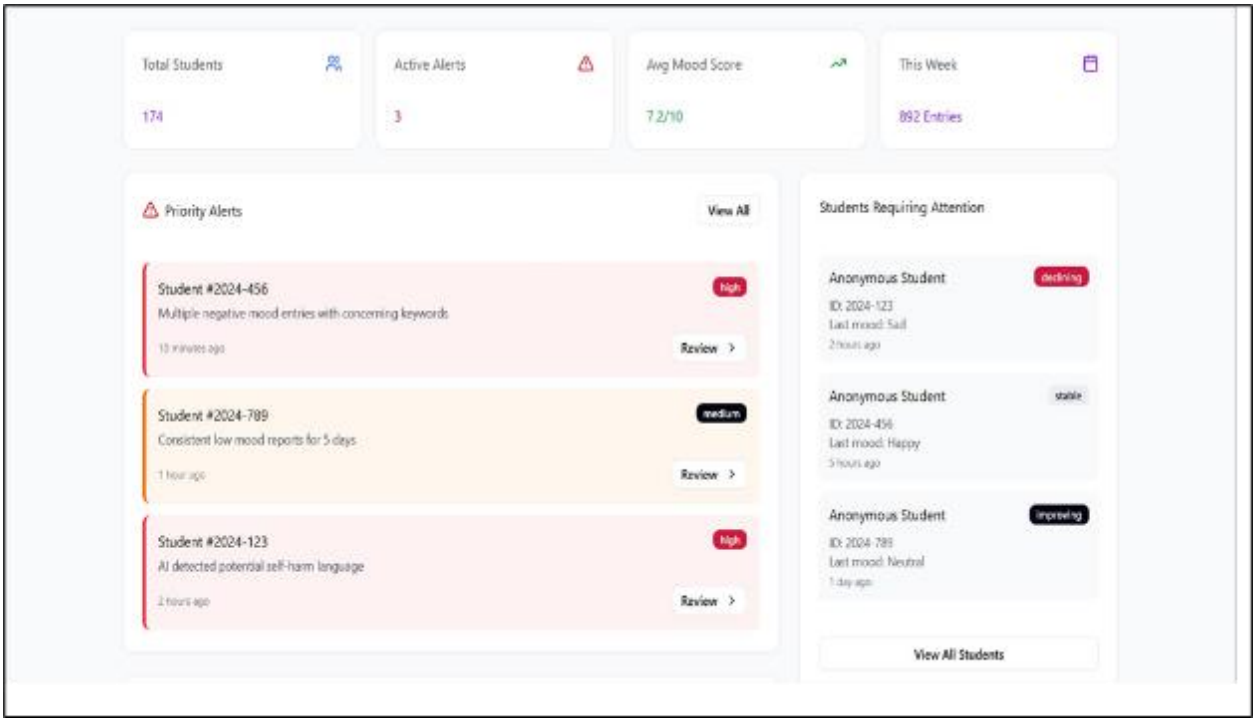

Figure 8 The Guidance Counselor Dashboard – An admin interface for guidance staff to monitor mood reports, AI alerts, and chats to offer timely student support

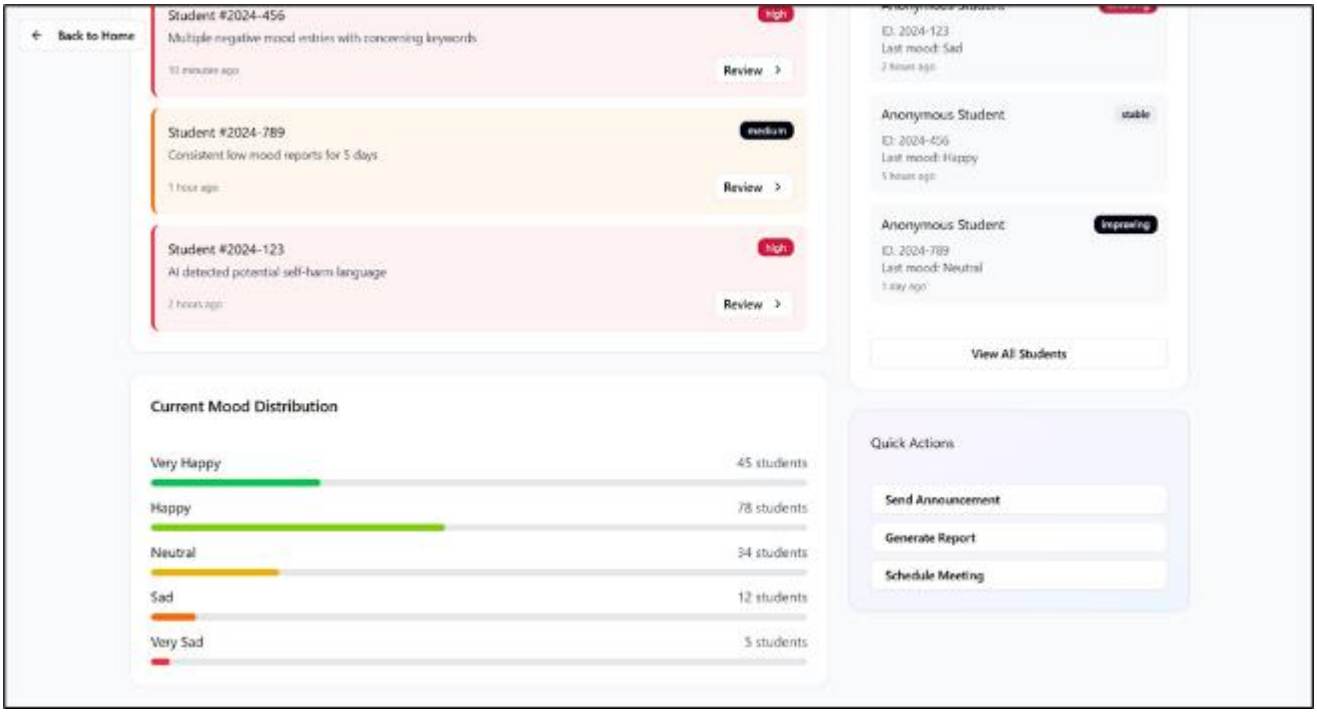

Figure 9 Alert Notification Screen,

Figure Displays alerts for counselors when students show signs of distress, allowing immediate support and intervention

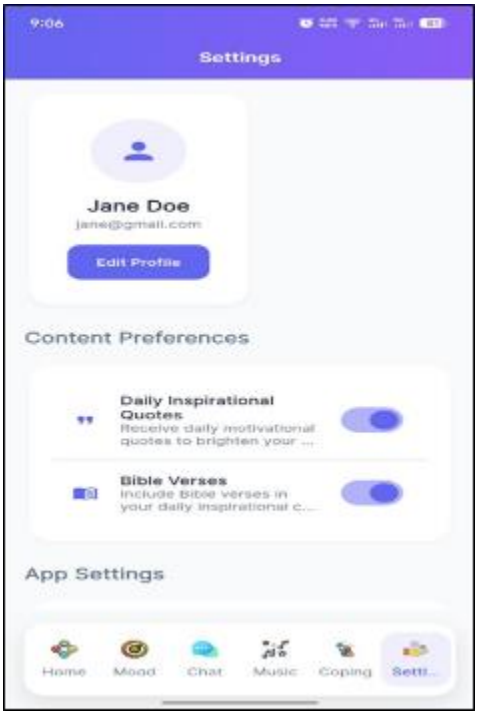

Figure 10 The User Profile and Settings Page – Allows students to manage personal details, customize app preferences, and control notifications easily

This figure displays the User Profile and Settings Page – Allows students to manage personal details, customize app preferences, and control notifications easily.

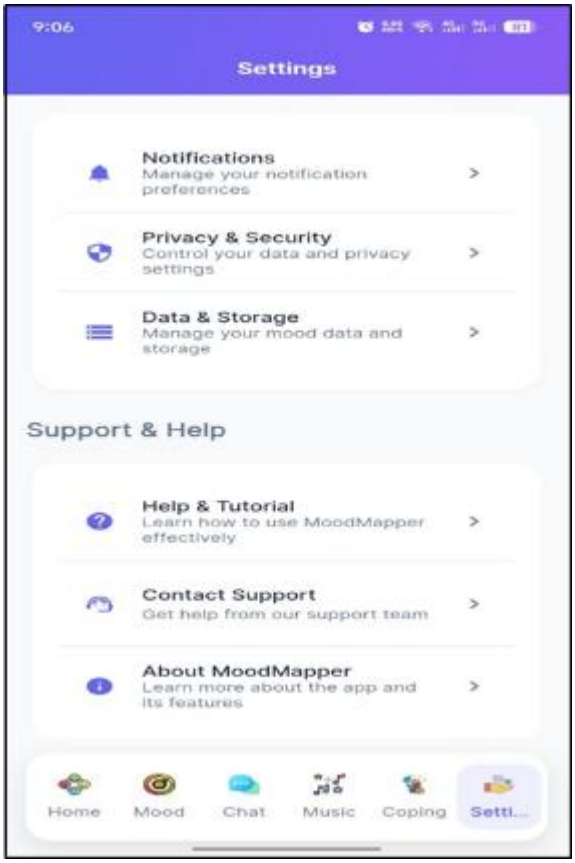

Figure 11 The Help and Tutorial Screen , Provides an easy guide for new users to navigate MOODMAPPER's features for a smooth onboarding experience

This figure is about the Help and Tutorial Screen, Provides an easy guide for new users to navigate MOODMAPPER's features for a smooth onboarding experience.

5. Evaluation and results

5.1. Usability Testing

The results of the usability testing of the MOODMAPPER system generally showed positive feedback from student users and the counselors. This pointed to a high level of compliance of the system to the usability principles. First, students, who used MOODMAPPER for tracking their moods and managing stress, found the system highly easy to use. Measurement resulted in an average score of 4.28 (85.6%), while the willingness dimension resulted in an average score of 4.32 (86.4 %). This means that both dimensions had a strong level of engagement by the users. Second, the counselors, who used MOODMAPPER to monitor the well-being of emotions of students and carry out an intervention, rated the system as easy to use. The scores for the dimensions on the score and confidence had an average of 4.05 (81%) and 4.20 (84%), respectively. This result supports MOODMAPPER as a mental health tool.

Table 1 Usability Result Table

Questions	Students Mean	Counselors Mean
I thought the system was easy to use.	4.28	4.05
I found the system unnecessarily complex.	2.15	2.35
I needed to learn a lot of things before I could get going with this system.	1.95	2.10
I would imagine that most people would learn to use this system quickly.	4.25	4.30

I think that I would need the support of a technical person to be able to use this system.	1.80	2.00
I found the tool very cumbersome to use.	2.10	2.05
I felt very confident using the tool.	4.20	4.20
I thought there was too much inconsistency in this system.	2.20	2.25
I think I would like to use this tool frequently.	4.32	4.10
I found the overall experience of using the system satisfying.	2.82	2.85
TOTAL MEAN	3.01	3.03

5.2. Performance Metrics

Performance metrics were formulated to evaluate MOODMAPPER's impact on the level of users' engagement, confidence, and satisfaction. Such metrics were developed for two user groups, including students and counselors. While the first group uses the system mainly for mood tracking and stress relief, the second one comes to MOODMAPPER for mental health support interventions. Overall, both student and counselor respondents positively perceived the system as handy and user-friendly to meet own demands. This category reports that the system was intuitive and supportive, which should be maintained on future iterations; it should be noted that students' confidence and engagement both increased.

Accessibility (Students) 3.32 (66.4%) — Regarding accessibility, students rated the system highly for visual clarity and confidence at 4.15 and 4.00 scores, respectively. The other core features were scored with relative high perceptions – core features navigational experience at 4.05. However, some features were evaluated with difficulty such as instructions availability at 2.50 scores and presented information comprehension at 2.55. The system's responsiveness level possible included slight delay or lag since was scored at 2.70. Thus, the overall outcomes revealed that MOODMAPPER was accessible to students; however, by improving user guidance and system performance, the experience could be even better.

Accessibility (Counselors) 3.31 (66.2%%) — Counselors rated very positively the visual clarity (3.95) and the confidence in the use of the system (4.10). They pointed out problems in locating support materials (2.60) and also reported that the system was moderately responsive to their requests (2.85). In general, counselors considered MOODMAPPER as an accessible tool, suggesting that the introduction of help features and some performance improvements would make it more user-friendly.

Table 2 Accessibility Result Table

Questions	**Students Mean**	**Counselors Mean**
The system's visual elements (icons, buttons, labels) were clear and easy to identify.	4.15	3.95
It was easy to locate instructions or help when using MOODMAPPER.	2.50	2.60
The system allowed me to access mood tracking without unnecessary delays or errors.	2.90	3.00
I had difficulty navigating to specific features without guidance.	4.05	4.00
The system responded slowly or lagged during use.	2.70	2.85
Some visual elements were unclear or hard to identify.	2.40	2.35
I was confident using the system across different devices.	4.00	4.10
I found it easy to read and understand the information presented by the system.	2.55	2.50
I found the system difficult to use under time pressure or when in a hurry.	4.10	3.90

The system's visual elements (icons, buttons, labels) were clear and easy to identify.	3.85	3.80
TOTAL MEAN	3.32	3.31

Functionality (Students): 2.45 (49%) – Students gave a moderate level of feedback to the main functionality of MOODMAPPER. They also mentioned that the mood tracking features were the most reliable (3.50 or 62.5%) and that they liked the integration of the personalized coping support(3.45 or 61.3%). On the other hand, the indicators for system responsiveness (2.10 or 27.5%) and clarity of advanced functions (2.00 or 25%) reflect that technical upgrades and more clear instructions can improve the user experience.

Functionality (Counselors): 2.38 (47.6%) – Counselors by and large, were moderately content with the functionality, They also rated the device's practical usefulness (3.30 or 57.5%) and reliability (3.25 or 56.3%) as good. A few issues were raised regarding the occurrence of technical glitches (2.15 or 28.8%) and the difficulty in navigating complex options (1.95 or 23.8%). These points emphasize the benefits that users will gain from increased system stability and simplified user interface.

Table 3 Functionality Result Table

Questions	**Students Mean**	**Counselors Mean**
The mood tracking and self-reporting features worked as expected.	3.50	3.30
The system responded quickly to my inputs and interactions.	2.10	2.15
The personalized coping and support features helped me manage my emotions better.	3.45	3.25
All major functionalities of the system worked as intended.	2.00	1.95
The various functions in MOODMAPPER are well-integrated and easy to access.	3.40	3.30
I found it difficult to understand how some system features worked.	2.05	2.10
The system occasionally froze or lagged during use.	2.20	2.15
I felt frustrated when the system did not respond as expected.	1.90	1.85
Navigating advanced features was confusing.	2.00	1.95
I had trouble overcoming obstacles while using MOODMAPPER's features.	1.85	1.80
TOTAL MEAN	2.45	2.38

5.3. Comparative Analysis

The study evaluated MOODMAPPER against other mental health and mood-tracking platforms that were used in academic settings and concluded that it was the only one that was user-centered and culturally sensitive. Students as well as counselors liked the fact that the system incorporated personalized coping strategies and culturally meaningful features, which made the system more relevant and engaging than indifferent apps that usually lack local context. Minor issues such as onboarding enhancements and occasional responsiveness delays were pointed out, but they did not have a significant effect on the overall level of satisfaction. Users felt that MOODMAPPER was a very good example of how cultural considerations can be balanced with practical mental health support, thus making it more natural and beneficial for their particular needs than other generic mental wellness tools.

5.4. Results and Findings

The combined outcomes of MOODMAPPER's usability, accessibility, and functionality evaluations demonstrate moderate success in fulfilling the system's objectives:

- Usability – 3.02
- Accessibility – 3.32

- Functionality – 2.42

The SUS survey results, that were further supported by extensive user comments, suggest that both the students and the counselors generally feel confident, connected to, and satisfied with the MOODMAPPER. While ease of use and the tool for personalized coping strategies were identified as the key strengths by the students, practicality for the emotional condition monitoring and intervention support was the main advantage highlighted by the counselors. Although the rate of performance was rather low on the dimensions of responsiveness and intelligibility, the overall agreement was that the MOODMAPPER effectively supports mood monitoring and mental health conditions specifically in the academic setting. On the other hand, the MOODMAPPER's intuitiveness, user-friendly design, and cultural appropriateness were the major success factors behind the organizations' sustained engagement and perceived value.

6. Discussion

6.1. Interpretation of Findings

This research has investigated the effectiveness of the MOODMAPPER system in nurturing emotional well-being, usability, and user experience among students and counselors in the academic field. The results have shown that the system's fundamental characteristics, including personal mood analysis, culturally competent approaches to coping, and interactive design, have significantly promoted user retention, emotional reflection, and overall satisfaction. Such outcomes stand in for appropriate stress intervention and mental health provision, ensuring that users record positive well-being and counseling outcomes.

Table 4 Descriptive Survey Result Table

Questions		Mean	Standard Deviation
1.	How effective is MOODMAPPER in supporting mood tracking and emotional awareness?	3.48	0.54
2.	How helpful are the personalized coping strategies in managing stress?	3.52	0.51
3.	How engaging do you find MOODMAPPER's culturally sensitive interface and design?	3.60	0.49
4.	To what extent does MOODMAPPER increase your motivation to monitor and improve your mood?	3.57	0.52
5.	How satisfied are you with your overall experience using MOODMAPPER?	3.63	0.47
	TOTAL MEAN	3.56	0.51

RQ1: *What was the effect of MOODMAPPER's mood tracking and support functionalities on the needs to handle emotional well-being for students and counselors?*

According to user response, the mood mapping and self-reporting features of MOODMAPPER were successful in promoting emotional identification and management, recording an average of about 3.40 aggregates among the students 3.50 and 3.30 among the counselors. The system's easy-to-navigate interface contributed to filling the voids in emotional support by allowing users to actively participate in stress substitution and reflect on their academic environments emotionally.

RQ2: *What impact do MOODMAPPER's accessibly and culturally sensitive design features have on the usability, engagement, and satisfaction levels of students and counselors?*

MOODMAPPER's accessible and culturally relevant design elements received strong positive ratings, averaging about 3.37 (Students 3.37; Counselors 3.36). Participants praised the system's ease of use and confidence-building features, while also appreciating how the interface respected cultural contexts, which strengthened their connection to and trust in the platform.

RQ3: *What are users' perspectives on system responsiveness and clarity of advanced functionalities, and their impact on overall functionality satisfaction?*

The study participants were moderately happy with the system functionality, as evidenced by the average score of about 2.42 (Students 2.44; Counselors 2.39) given by them. In general, the most important features like mood tracking and coping integration received positive feedback, however, users have also pointed out slow responsiveness, technical glitches occurring occasionally and complexity in advanced options navigation as the major issues that hinder their experience with the app.

6.2. Contributions and Innovation

The above research highlights the necessity of embedding culturally sensitive HCI principles into the digital mental health tool. Indeed, MOODMAPPER utilizes culturally appropriate mood tracking, accessible design, and relevant content to ensure its responsibility and empathy to its academic user. Overall, the user-oriented tool shows that the inclusion of cultural aspects results in increased levels of user engagement, usage, and ultimately, mental health benefits.

6.3. Limitations and Future Work

Given the study's inherent limitations focused solely on students and counselors within one academic institution, its results may not generalize to other user or system settings. Therefore, further work should strive to include broader user groups to confirm MOODMAPPER's wide applicability. Furthermore, enhanced systems should be designed in such a way as to ensure more responsive interfaces, more straightforward route finding for key features, and enriched and culturally aligned personalized mental health support pathways.

7. Conclusion

7.1. Summary of Key Findings

User feedback from both groups confirm student and counselor impressions of MOODMAPPER as easy to use, culturally sensitive, and conducive to mental well-being. This evidence further confirmed students' regular mood tracking and use, despite their lowered impressions of system functionality, regarding which MOODMAPPER required technical innovations. Culture sensitivity has overall positive effects on the users' trust and continued use.

7.2. Final Remarks

In conclusion, MOODMAPPER reveals as a promising, user-friendly, and culturally empathetic mental health platform, enhancing emotional support and awareness in academic settings. Results underscore that culturally sensitive design and continuous integration of user feedback are essential to optimizing influence and expanding system utilization. Further developments aimed at increasing responsiveness and user interface effectiveness could improve MOODMAPPER's utility in academic mental health.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

[1] Albikawi, Z., Abuadas, M., & Rayani, A. M. (2025). Nursing Students' Perceptions of AI-Driven Mental Health Support and Its Relationship with Anxiety, Depression, and Seeking Professional Psychological Help: Transitioning from Traditional Counseling to Digital Support. Healthcare, 13(9), 1089. https://doi.org/10.3390/healthcare13091089

[2] Alsayed, S., Assayed, S. K., Alkhatib, M., & Shaalan, K. (2024). Impact of Artificial Intelligence Chatbots on Student Well-being and Mental Health: A Systematic Review [Review of Impact of Artificial Intelligence Chatbots on Student Well-being and Mental Health: A Systematic Review]. People and Behavior Analysis, 2(2), 1. https://doi.org/10.31098/pba.v2i2.2411

[3] Aruta, J. J. B. R., Mateo, N. J., Resurreccion, R. R., Galanza, M. A. M. C., & Bernardo, A. B. I. (2024). Screening psychological symptoms in Filipino university students during the COVID-19 pandemic: Translation and

structural validation of the Filipino version of the DASS-21. Psychology in the Schools, 61(8), 3243. https://doi.org/10.1002/pits.23214

[4] Asselmann, E., Zenker, M., Rückert, F., Kische, H., Pieper, L., & Beesdo-Baum, K. (2023). Ecological momentary assessment and applied relaxation: Results of a randomized indicated preventive trial in individuals at increased risk for mental disorders. PLoS ONE, 18(6). https://doi.org/10.1371/journal.pone.0286750

[5] Ayer, L., Boudreaux, B., Paige, J. W., Holmes, P., Blagg, T., & Mendon, S. J. (2023). Artificial Intelligence–Based Student Activity Monitoring for Suicide Risk: Considerations for K–12 Schools, Caregivers, Government, and Technology Developers. RAND Corporation eBooks. https://doi.org/10.7249/rra2910-1

[6] Bai, Z., & Zhang, S. (2023). Are multi-element combinations of natural soundscapes better for psychophysiological restoration than single-element natural soundscapes? --Evidence from a study in Zhangjiajie National Forest Park. Research Square (Research Square). https://doi.org/10.21203/rs.3.rs-3791470/v1

[7] Carayannis, E. G. (2013). Human-Computer Interaction. In Springer eBooks (p. 869). Springer Nature. https://doi.org/10.1007/978-1-4614-3858-8_100431

[8] Chan, C. K. Y. (2025). AI as the Therapist: Student Insights on the Challenges of Using Generative AI for School Mental Health Frameworks. Behavioral Sciences, 15(3), 287. https://doi.org/10.3390/bs15030287

[9] Cordero, D. A. (2022). Down but Never Out! Narratives on Mental Health Challenges of Selected College Students During the COVID-19 Pandemic in the Philippines: God, Self, Anxiety, and Depression. Journal of Religion and Health, 61(1), 618. https://doi.org/10.1007/s10943-021-01476-3

[10] Dhakecha, H. (2022). A Methodological Study of Human-Computer Interaction: A Review [Review of A Methodological Study of Human-Computer Interaction: A Review]. International Journal for Research in Applied Science and Engineering Technology, 10(8), 195. International Journal for Research in Applied Science and Engineering Technology (IJRASET). https://doi.org/10.22214/ijraset.2022.46127

[11] Dulay, T. R., Ganado, M. C., Guiling, M. A., Tan, C. J., & Abella, J. V. P. (2023). Examining the Relationship between Academic Stress and Coping Mechanisms among Filipino Irregular College Students. Journal of Counselling and Family Therapy, 5(2), 13. https://doi.org/10.46610/jcft.2023.v05i02.002

[12] Gilmour, L. R. V., Bray, I., Alford, C., & Lintott, P. R. (2024). Natural soundscapes enhance mood recovery amid anthropogenic noise pollution. PLoS ONE, 19(11). https://doi.org/10.1371/journal.pone.0311487

[13] Gonzalo, R. P., & Alibudbud, R. (2024). Advancing education-based mental health in low-resource settings during health crises: the mental health initiative of the University of the Philippines during the COVID-19 pandemic. Frontiers in Education, 9. https://doi.org/10.3389/feduc.2024.1428237

[14] Hao, N., Meng, C., Zhao, N., Zhang, J., & Zheng, F. (2025). Artificial intelligence-assisted psychological intervention mechanisms for university students in the context of new media technologies: an analysis based on data from the national institute of mental health. Frontiers in Psychology, 16. https://doi.org/10.3389/fpsyg.2025.1619818

[15] Lei, L., Li, J., & Li, W. (2023). Assessing the role of artificial intelligence in the mental healthcare of teachers and students. Soft Computing. https://doi.org/10.1007/s00500-023-08072-5

[16] Liu, Z., & Zhu, Z. (2024). The Effect of Mixed Natural Sounds on Stress Recovery: Insights into Physiological Benefits and Temporal Dynamics. Research Square (Research Square). https://doi.org/10.21203/rs.3.rs-4979692/v1

[17] Marwaha, J. S., & Kvedar, J. C. (2021). Cultural adaptation: a framework for addressing an often-overlooked dimension of digital health accessibility. Npj Digital Medicine, 4(1). https://doi.org/10.1038/s41746-021-00516-2

[18] Miranda, J. P. P., & Tolentino, J. C. G. (2023). Impact of COVID-19 and emotional states of Filipino university students. International Journal of Evaluation and Research in Education (IJERE), 12(3), 1195. https://doi.org/10.11591/ijere.v12i3.24707

[19] Moholkar, V. (2024). Understanding the Role of Human-Computer Interaction (HCI) in User friendliness in Navigating the Computer System. International Journal for Research in Applied Science and Engineering Technology, 12(1), 883. https://doi.org/10.22214/ijraset.2024.58080

[20] Pushpakumar, R., Sanjaya, K., Rathika, S., Alawadi, A. H., Makhzuna, K., Venkatesh, S., & Rajalakshmi, B. (2023). Human-Computer Interaction: Enhancing User Experience in Interactive Systems. E3S Web of Conferences, 399, 4037. https://doi.org/10.1051/e3sconf/202339904037

[21] Ratcliffe, E. (2021). Sound and Soundscape in Restorative Natural Environments: A Narrative Literature Review [Review of Sound and Soundscape in Restorative Natural Environments: A Narrative Literature Review]. Frontiers in Psychology, 12. Frontiers Media. https://doi.org/10.3389/fpsyg.2021.570563

[22] Soubutts, E., Shrestha, P., Davidson, B. I., Qu, C., Mindel, C., Sefi, A., Marshall, P., & McNaney, R. (2024). Challenges and Opportunities for the Design of Inclusive Digital Mental Health Tools: Understanding Culturally Diverse Young People's Experiences. 1. https://doi.org/10.1145/3613904.3642641

[23] Tekade, P., Abhyankar, H., & Tornekar, Prof. R. (2022). Review on Human-Computer Interaction: An Evolution of Usablility. International Journal for Research in Applied Science and Engineering Technology, 10(4), 2102. https://doi.org/10.22214/ijraset.2022.41414

[24] Toussaint, L., Nguyen, Q. A., Roettger, C., Dixon, K., Offenbächer, M., Kohls, N., Hirsch, J. K., & Sirois, F. M. (2021). Effectiveness of Progressive Muscle Relaxation, Deep Breathing, and Guided Imagery in Promoting Psychological and Physiological States of Relaxation. Evidence-Based Complementary and Alternative Medicine, 2021, 1. https://doi.org/10.1155/2021/5924040

Appendices

Appendix A: System Usability Scale (SUS) Likert Scale Survey Questionnaire

Functionality

Questions		**Ratings**		
1. The mood tracking and self-reporting features worked as expected.	1	2	3	4
2. The system responded quickly to my inputs and interactions.	1	2	3	4
3. The personalized coping and support features helped me manage my emotions better.	1	2	3	4
4. All major functionalities of the system worked as intended.	1	2	3	4
5. The various functions in MOODMAPPER are well-integrated and easy to access.	1	2	3	4
6. I found it difficult to understand how some system features worked.	1	2	3	4
7. The system occasionally froze or lagged during use.	1	2	3	4
8. I felt frustrated when the system did not respond as expected.	1	2	3	4
9. Navigating advanced features was confusing.	1	2	3	4
10. I had trouble overcoming obstacles while using MOODMAPPER's features.	1	2	3	4

Accuracy

Questions				
1. I thought the system was easy to use.	1	2	3	4
2. I found the system unnecessarily complex.	1	2	3	4
3. I needed to learn a lot of things before I could get going with this system.	1	2	3	4
4. I would imagine that most people would learn to use this system quickly.	1	2	3	4
5. I think that I would need the support of a technical person to be able to use this system.	1	2	3	4
6. I found the tool very cumbersome to use.	1	2	3	4
7. I felt very confident using the tool.	1	2	3	4
8. I thought there was too much inconsistency in this system.	1	2	3	4
9. I think I would like to use this tool frequently.	1	2	3	4
10. I found the overall experience of using the system satisfying.	1	2	3	4

Accessibility

Questions				
The system's visual elements (icons, buttons, labels) were clear and easy to identify.	1	2	3	4
It was easy to locate instructions or help when using MOODMAPPER.	1	2	3	4
The system allowed me to access mood tracking without unnecessary delays or errors.	1	2	3	4
I had difficulty navigating to specific features without guidance.	1	2	3	4
The system responded slowly or lagged during use.	1	2	3	4
Some visual elements were unclear or hard to identify.	1	2	3	4
I was confident using the system across different devices.	1	2	3	4
I found it easy to read and understand the information presented by the system.	1	2	3	4
I found the system difficult to use under time pressure or when in a hurry.	1	2	3	4
I frequently used available help or support features when using the system.	1	2	3	4

Appendix B: Descriptive Survey Questionnaire

MOODMAPPER: Designing and Evaluating an Adaptive Mood Monitoring System to Enhance Stress Recognition and Coping Strategies for Students at South East Asian Institute of Technology Inc.

How effective is MOODMAPPER in supporting mood tracking and emotional awareness?

☐ Not At All ☐ Slightly ☐ Very Much ☐ Extremely

How helpful are the personalized coping strategies in managing stress?

☐ Never ☐ Rarely ☐ Often ☐ Always

How engaging do you find MOODMAPPER's culturally sensitive interface and design?

☐ Very Poor ☐ Poor ☐ Good ☐ Excellent

To what extent does MOODMAPPER increase your motivation to monitor and improve your mood?

☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

How satisfied are you with your overall experience using MOODMAPPER?

☐ Very Dissatisfied ☐ Dissatisfied ☐ Satisfied ☐ Very Satisfied