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DESIGNING FOR EMOTIONAL WELL-BEING: A KANSEI-BASED APPROACH TO DEVELOPING A MENTAL HEALTH APP FOR UNIVERSITY STUDENTS

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ABSTRACT

University students experience increasing mental health difficulties because of academic load, emotional shifts, and limited access to personalised wellness resources. This paper presents MoodBloom, a mobile mental health application designed with Kansei Engineering (KE), a methodology that converts feelings into specific design specifications. The study used a three-stage Kansei process — Kansei Research, Kansei Analysis, and Product Design — to integrate functional demands with emotional design components. During early development, a formative evaluation was conducted to understand expert perceptions of functional usability of the Moodbloom prototype through task-based testing. The summative evaluation used a high-fidelity prototype with 35 university students to validate the application's emotional effectiveness and assess the presence and strength of each Kansei element in the user experience. The study identified seven Kansei elements—calm, supportive, reassured, peaceful, comforted, joyous, and connected—and applied them as evaluation criteria. Results demonstrated that MoodBloom's design effectively produced a digital space that is not only useful in a functional sense but also emotionally calming and resonant. The evaluation confirmed that all seven Kansei elements were consistently present and effectively expressed in the app's design. The research shows the need for emotionally sensitive design in preventive mental health aids. It provides a framework for future development in higher education settings, despite being restricted to a non-clinical student population.

Keywords: Emotional Design, Kansei Engineering, Mental Health App, Mindfulness, University Students.

INTRODUCTION

University years mark a significant change in the lives of young adults, as many move away from home and begin living alone for the first time. This crucial time is marked by a range of emotions, including excitement, fear, and doubt. Many university students have great hopes for a lively campus life, but they are also unsure about their ability to overcome potential obstacles in their academic and social lives. According to earlier research, university students experience far higher levels of stress, anxiety, and depression during the critical period between youth and adulthood than they do at any other point in their lives (Beiter et al., 2015; Hou et al., 2024). According to Richardson et al. (2024), the transition to university is a complex process that shifts young people's networks from reliance on their families to greater independence. This shift exposes students to a range of stressors, which, when combined with feelings of loneliness, can contribute to anxiety and depression (Richardson et al., 2024). Their general well-being, interpersonal relationships, and academic achievement may all suffer because of these difficulties.

Existing mental health apps, while offering functional features such as reminders, progress tracking, and task management, often fail to address users' emotional needs effectively. Survey data reveals that 64.7 per cent of respondents found existing apps unhelpful, 58.8 per cent felt disconnected from the apps, and 58.8 per cent stopped using them due to time constraints and limited perceived value. Along with design elements that convey calmness and positivity, consumers also expressed a strong need for features that foster motivation, offer insights into individual emotional patterns, and create a sense of connection and support. The disconnect between emotional engagement and functioning underscores the need for a mental health app designed specifically for university students. By employing Kansei Engineering to meet both functional and emotional objectives, MoodBloom aims to transform students' emotional reactions into meaningful design elements. For students' well-being, this will offer a more engaging, motivating, and emotionally impactful solution.

The Japanese design methodology known as Kansei Design is centred on comprehending and incorporating users' emotional responses into product development. Kansei Design guarantees that goods not only fulfil their intended functions but also emotionally connect with people by attending to both functional and emotional needs. In applications related to mental health, where emotional connection and usability are essential for promoting well-being, this dual approach is especially significant. Despite its potential, the use of Kansei Design to address the practical and emotional needs of university students is underexplored, leaving room for inventive development.

The main objectives of MoodBloom, a mental health application designed for university **students**, are multifaceted and centred around both functional and emotional user needs. First, the project aims to determine the functional demands of university students, with a focus on the features and capabilities they consider vital in a mental health app. By identifying design components that elicit positive emotional responses, the study also seeks to investigate students' emotional needs. This is accomplished through Kansei Engineering, a methodology that converts users' emotional responses into specific design specifications. The development of the MoodBloom app, which carefully combines functionality with emotional design elements from the Kansei framework, is the third goal under this methodology. To evaluate the emotional resonance of the app, seven Kansei word elements were identified and used as key indicators in a summative evaluation conducted after user interaction.

This paper focuses on the design, development, and evaluation of MoodBloom, a mental wellness app created specifically for university students. The project explores both functional and emotional user needs

to support mental well-being, rather than addressing clinical mental health treatment. The research incorporates a user-centred design approach and is grounded in Kansei Engineering to integrate emotional design elements into the app.

LITERATURE REVIEW

The literature review provides an in-depth understanding of the research context, starting with a comprehensive introduction to academic stress among university students, mental health support, and Kansei Engineering. This section then systematically examines existing research on these topics, shedding light on the mental well-being challenges faced by university students. In addition, it examines existing gaps and limitations in current knowledge, thereby justifying the present study. This structured approach in the literature review establishes a strong foundation for the study by ensuring that research objectives are well-informed and connected to the established body of knowledge in the field.

Academic Stress Among University Students

Public health is becoming increasingly concerned about university students' poor mental health. Students shift from late adolescence to emerging adulthood during the university years, and mental health problems are more likely to manifest during this period (Auerbach et al., 2016; McGrath et al., 2023). According to epidemiological research, between 12 and 50 per cent of university students fit the criteria for one or more common mental illnesses (Hunt & Eisenberg, 2009). Increased stress, anxiety, and depression have been linked to life transitions, according to research (Beiter et al., 2015; J. Wang et al., 2019). Numerous negative consequences are associated with these diseases, including poor work outcomes (Porru et al., 2021), relationship problems (Tosevski et al., 2010), and decreased academic attainment and increased dropout (Alonso et al., 2018; Auerbach et al., 2016; Bruffaerts et al., 2017). These long-term adverse outcomes may be mediated by mental health issues that arise during the university years, as these years are the peak period for the start of a broad spectrum of mental disorders (Ibrahim et al., 2013).

In the Malaysian context, research in this area has increased over the past decade. However, most research in Malaysia has been conducted at public universities. Shamsuddin et al. (2013) carried out a study to assess the prevalence of depression, anxiety and stress to identify their correlation among university students. Stress inevitably plays a significant role in human mortality and morbidity in developed nations worldwide; Malaysia is no exception. According to Quick et al. (2004), stress is a significant factor in the severity of suffering, which leads to a variety of human illnesses. Furthermore, the National Health and Morbidity Survey (NHMS) (2011) found that mental health issues were present in 20.0% of Malaysians overall. The overall prevalence of mental health issues is still regarded as high, while not appearing to have increased significantly from the NHMS 2006 (19.4% in 2006) (Ministry of Health Malaysia, 2011).

Emotional Design in Multimedia Products

Emotional design in multimedia is a relatively new approach, with studies regarding emotional design in their “infancy” (Mayer & Estrella, 2014). Besides, most studies on emotional design compared multimedia materials that used a multidimensional operationalisation of emotional design (i.e., the use of colour, anthropomorphism, and baby-face bias together) with neutral design. Emotional design focuses on creating meaningful user experiences by triggering positive emotional responses through visual, auditory, and interactive elements. Tractinsky et al. (2000) and Wolfson and Case (2000) noted that different design characteristics of multimedia elements, such as layout, colour, and sound, produced positive emotions. Typically, emotions can be broadly defined as negative and positive (Zhang & Lee, 2009). Emotional

design goes beyond functionality by building emotional connections between users and digital products through aesthetic appeal, brand consistency, and personalisation.

Don Norman's Three Levels of Emotional Design explains how users emotionally interact with products on three distinct levels: Visceral, Behavioural, and Reflective. Visceral emotions are immediate, instinctive reactions based on a product's appearance. In digital design, this includes visually pleasing interfaces, soothing colour schemes, and appealing animations that create a positive first impression. Behavioural emotions focus on the product's usability and functionality. Users form positive emotional responses when they find an app easy to navigate and intuitive to use. For example, well-organised menus and interactive features that align with familiar design patterns improve user satisfaction and engagement. Finally, Reflective emotions arise when users reflect on their overall experience with the product, shaping long-term emotional bonds. This reflective process helps users form lasting associations with a product based on past positive experiences. In the context of mental health apps, personalised feedback and progress tracking can foster a sense of achievement and emotional support.

Kansei Engineering

"Kansei" is a Japanese term referring to psychological feelings about aspects of product design (Matsubara & Nagamachi, 1997; Nagamachi, 1995). One of the co-authors established Kansei engineering at Hiroshima University, a user-oriented approach to product design (Ishihara et al., 1995; Nagamachi, 1995, 2002a). Kansei engineering was thus developed as a practical, consumer-oriented approach for translating customers' kansei (feelings) into product design elements (Ishihara et al., 1995; Nagamachi, 1995). The academic and industrial sectors in Japan have found success using Kansei design methodologies. Their level of recognition and development outside Japan is insignificant compared to that within the country. The design of physical products, including automobile interiors (Nagamachi, 1995), phones (Yang et al., 1999), cameras (Yang, 2011), housing (Llinares & Page, 2011), beverage bottles (Luo et al., 2012), mobile phones (Yang & Chang, 2012), athletic shoes (Shieh & Yeh, 2013), and notebooks (Huang et al., 2014), has been the focus of earlier research using Kansei engineering. However, its adoption in the context of digital products, particularly in the mental health domain, is still relatively limited.

Kansei also refers to the five senses (i.e. vision, hearing, smell, taste and skin sensation). Harada (1998) further described Kansei as a higher mental, therefore implicit, function of the brain. Kansei begins with gathering the related sensory impressions, such as feelings, emotions, and intuition. These are collected through the means of the five senses. When the senses are stimulated, they trigger psychological cognition through perception, judgment, and memory. In the scenario of going into unknown territory, vision, smell, taste, and the resulting cognition would form a judgment on whether it is "a friendly environment", and if it is or feels "safe". The Kansei advances from cognition, which is based on contributing sensations. In that sense, the English word most correctly corresponding to Kansei might be Jean Piaget's 'Schema', defining the style or attitude of receiving senses. Nagamachi's research has similar nuances. Don Norman's Emotional Design (2004) also shares similar attributes with Kansei.

Mindfulness and Mental Health Apps

Mindfulness is increasingly viewed as a practice that can be developed through both formal meditation (e.g., focused attention, awareness of breath, emotions, or thoughts) and informal practices (e.g., open monitoring and cultivating awareness in daily activities). In higher education, digital health tools, including mobile mindfulness apps, are seeing growing uptake among students, driven by rising mental health needs and constraints on traditional support services (Jembai et al., 2022; Vaz et al., 2024). However, despite positive attitudes, many students report low or inconsistent use of such apps and face barriers to sustained

adoption (Melcher et al., 2022). Local studies in Malaysia find that academic stress correlates negatively with mindfulness and self-regulation among undergraduates, suggesting a gap between the mental health challenges experienced and the effective use of digital or mindfulness interventions (Ramli et al., 2018). Moreover, a quasi-experimental study found that a single-session online acceptance and commitment therapy (ACT)- based mindfulness intervention delivered during the COVID-19 lockdown significantly reduced psychological distress among Malaysian university students, but only over a short period, and with issues around longer-term use (Pang et al., 2023). These findings highlight an uneven evidence base: while mindfulness apps are promising, issues like short-term effects, low engagement, usability, and tailoring to student contexts and needs remain underexplored. Hence, underscores the need for design approaches that blend user-centred design with emotional (Kansei) analysis to support students' emotional well-being better.

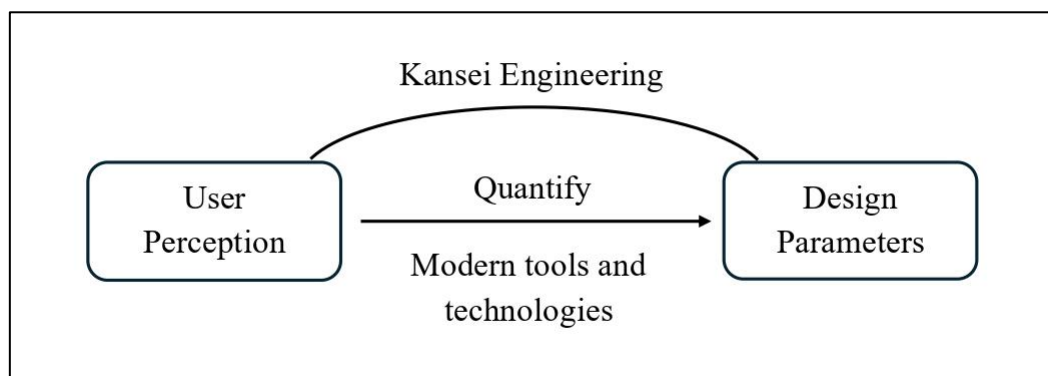
While mindfulness apps show promise, their effectiveness remains uncertain, underscoring the need to understand user experiences better. This is supported by the needs analysis survey ($n = 41$) conducted in the present research, which revealed several reasons why university students discontinue using such apps. The most common factor, reported by 64.7% of respondents, was the lack of perceived usefulness, indicating that many apps fail to deliver meaningful support or noticeable emotional improvements. Additionally, 58.8% of students reported feeling emotionally disconnected from the apps they had tried, citing limited personalisation and a lack of empathetic features that made the experience feel mechanical. A further 58.8% cited a lack of time, underscoring the importance of designing time-efficient features such as quick mood check-ins, short guided practices, and simplified navigation. Together, these findings highlight the significant need for mindfulness apps that are not only functionally effective but also emotionally engaging and adaptable to the realities of student life.

METHODOLOGY

The research methodology for this study primarily adopted Kansei Engineering, a structured method for translating users' emotional responses into product design elements. This methodology is well-suited for creating a mental health app that resonates emotionally with university students while meeting their functional needs. The Kansei Engineering methodology comprises three stages: Kansei Research, Kansei Analysis, and Product Design, ensuring that both emotional and functional aspects are addressed throughout app development.

Figure 1

The Kansei Engineering of the Product Design Process



Kansei Research

The first stage of Kansei Engineering was collecting users' emotional responses and preferences regarding mental health applications. To investigate both functional and emotional demands, a two-week online survey via Google Forms was administered to students from various universities, including Universiti Utara Malaysia, Monash University, the University of Reading, and UTAR. The survey collected multi-factor data, including students' mental health status, app usage patterns, and ideal features. Forty responses were gathered, and the sample size was determined using accepted usability testing protocols that balance practical limitations and statistical dependability (Budiou & Moran, 2021). A sample size of 40 is ideal for concluding a representative sample of the target population, as it provides a relatively small margin of error while maintaining a high degree of confidence. Forty respondents align to generate trustworthy and valuable results, even while smaller sample sizes, such as 20-30 respondents, might be sufficient for exploratory studies with a higher tolerance for error (Budiou & Moran, 2021). These findings made up the emotional design of MoodBloom, ensuring that the final prototype integrates both practical functions and emotional resonance.

Additionally, the present research involved voluntary participation in a survey focusing on students' general emotional needs and user preferences for app design. No sensitive or clinical data were collected, and the study posed minimal risk to participants. In line with university policy for coursework projects, formal institutional ethical approval was not required. Informed consent was obtained from all participants, and data were collected anonymously.

Desired features included feedback on mood, access to peer support, and progress tracking. Emotional needs focused on how the app should make users feel while using it. Students expressed a preference for a calming and supportive design that evokes feelings of comfort, positivity, and motivation. Emotional design elements such as a calming colour palette, soothing animations, and relaxing soundscapes were highlighted. These elements are essential for creating an emotionally supportive digital environment, encouraging consistent app use and fostering a positive mental health experience.

Kansei Analysis

In this stage, the survey data were analysed systematically using descriptive statistics, including frequency counts, averages, and percentages, to identify patterns in students' functional and emotional preferences. Functional needs involved identifying features students found essential for managing their mental health. Features that students found helpful for stress management, such as progress tracking, access to peer support, and mood feedback, were among the functional demands identified in the survey. These features were seen as practical tools that could help students manage stress, track emotional progress, and maintain healthy mental routines. Emotional needs focused on how the app should make users feel while using it. Key emotional design elements highlighted were soothing colour palette, gentle animations, and relaxing soundscapes. These elements are essential for creating an emotionally supportive digital environment, encouraging consistent app use and fostering a positive mental health experience. These demands were divided into two primary design dimensions using data clustering: functional needs, which improve usability, and emotional needs, which support emotional well-being. This analysis provided an organised framework for the app's design process.

In addition to the quantitative results, the seven Kansei emotional elements — calm, supportive, reassured, peaceful, comforted, joyous, and connected — were derived from thematic coding of open-ended responses and emotion-related checklist items in the needs analysis survey. When asked how they would like to feel while using a mental health app, respondents commonly used emotive phrases like "relaxed," "safe," "not alone," "encouraged," and "motivated." Using an inductive coding method, these recurrent

keywords were categorised according to their shared emotional meaning and semantic similarity. Seven unique emotional themes surfaced from this cluster. These themes were combined to create the final Kansei components, which represent the fundamental emotional objectives that informed MoodBloom's design. Figure 2 below illustrates how theme coding was used to group the raw emotional keywords from the survey responses into seven Kansei emotional elements.

Figure 2

Thematic Grouping of Raw Emotional Keywords into Kansei Elements

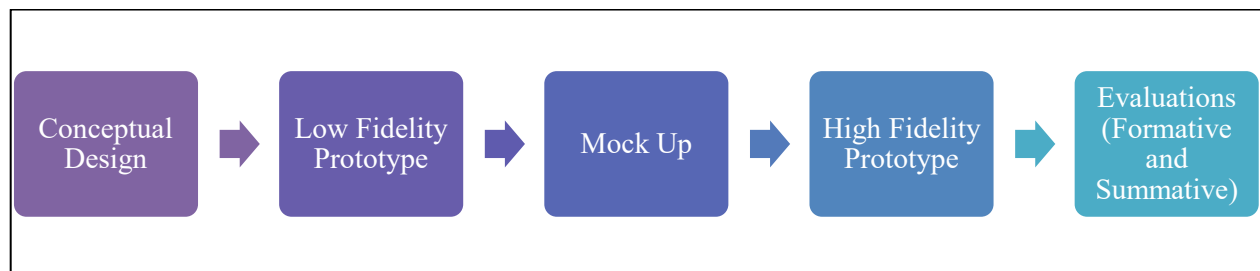
Calm	Supportive	Reassured	Peaceful	Comforted	Positive	Connected
• Relaxed • Soothing • Not anxious	• Encouraged • Motivated • Supported	• Safe • Non-judgemental • Affirming	• Gentle • Soft	• Warm • Cared for • Emotionally safe	• Hopeful • Inspired	• Not alone • Shared experience • Understood

Product Design

Insights from Kansei Analysis and Research were converted into concrete design solutions at this stage. The phase centred on integrating functional features and emotive design aspects into a cohesive user experience. Conceptual design development is the first step, where emotional insights were translated into design concepts. To reflect the topic, mood boards, colour schemes, typography, and iconography were created during the conceptual development phase of the design process. Once the initial concepts are developed, the next stage is to build app prototypes. These prototypes range from low-fidelity wireframes to interactive mock-ups that simulate the user experience. Low-fidelity wireframes are used for prototyping before moving on to high-fidelity interactive mock-ups. This stage is crucial for visualising the user interactions and ensuring that the emotional elements identified earlier are effectively integrated into the app's design. Key elements, including mood check-in, progress tracking (Bloom Calendar), peer support network (Bloom network), daily self-care (Bloom Garden), and calming soundscapes (Bloom Melodies), were integrated into these prototypes. To encourage emotional engagement, emotional design components were incorporated, including gentle animations and inspiring messages with a positive tone.

Figure 3

The Design Process of MoodBloom



The Interface Design of the Proposed Software System

Figure 4 (a) displays the User Interface (UI) and User Experience (UX) of the user when accessing the application's home page. The entire application was designed with soft, pastel tones and gentle visual

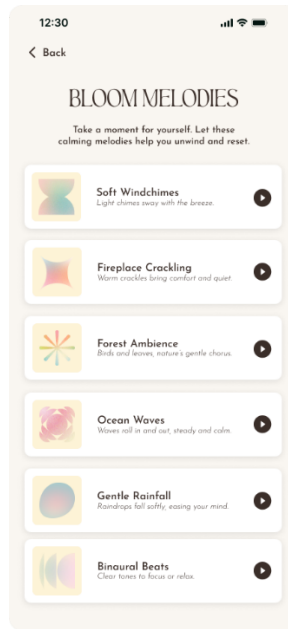
transitions, all of which contribute to feelings of calm, peacefulness, and comfort. Figure 4(b) shows the Bloom Melodies interface, which offers a curated set of ambient soundscapes designed to relax the user. This auditory feature enhances the feelings of calmness, positivity and comfort, especially for users experiencing stress or anxiety.

Figure 4

(a) MoodBloom's Homepage



(b) MoodBloom's Bloom Melodies Page



The Mood Check-In interface is shown in Figure 5(a), where users can select their emotional state from a set of emotive icons, each representing a different mood. It encourages Kansei elements like comfort, peace, and support while strengthening the user's connection to their own emotional patterns and fostering inner validation without passing judgment. The Bloom Garden, a reflective space where users grow a virtual plant through emotional self-care activities like Mood Check-In, Journaling, and Community Engagement, is shown in Figure 5(b). The visual feedback of the plant blooming reinforced a sense of emotional progress, evoking feelings of comfort, support, and connection, while also encouraging positivity as users visually tracked their advancement.

Figure 5

(a) MoodBloom's Mood Check-In Page (b) MoodBloom's Bloom Garden Page

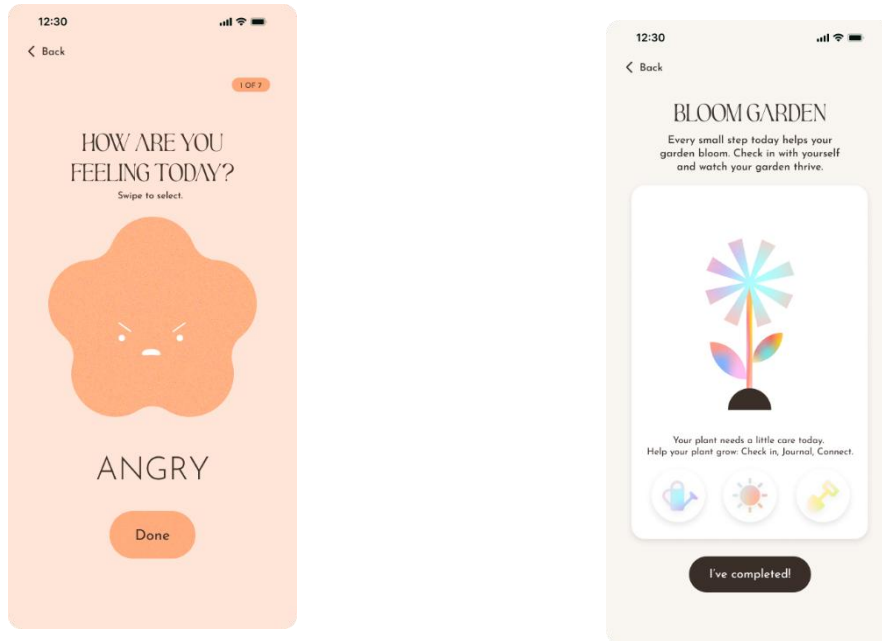
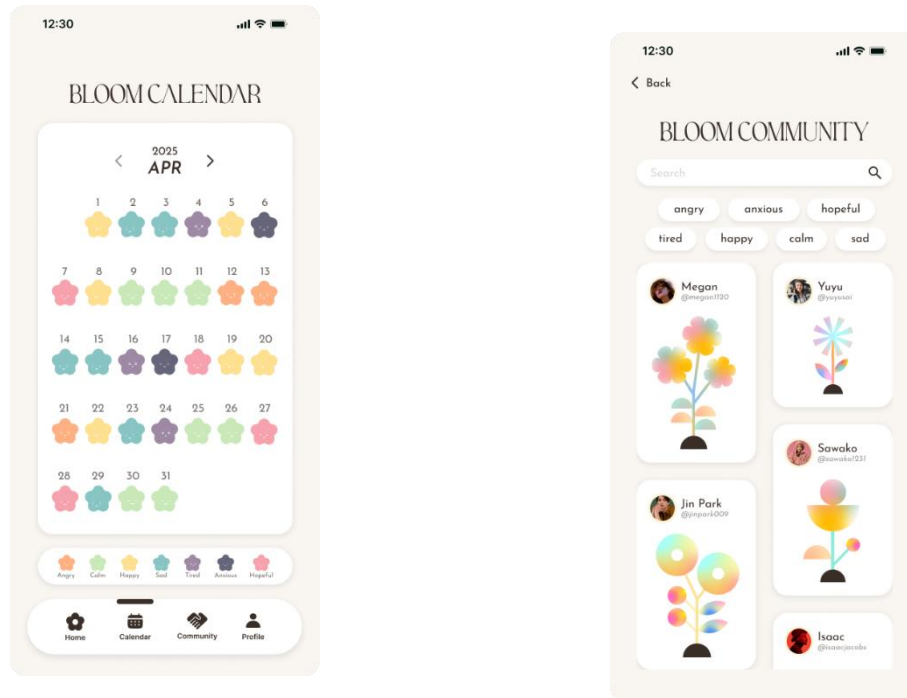


Figure 6(a) presents the Bloom Calendar, a visual mood-insight tool that helps users reflect on their emotional patterns over time. Each day of the calendar is shown with a colour-coded emoticon that reflects the user's recorded mood. This function offers a pleasant, non-intrusive way to identify behavioural trends and celebrate personal development, thereby promoting the Kansei aspects of calm, reassurance, and positivity. The calendar promotes more thoughtful emotional management and self-awareness by allowing users to view past emotions and track emotional swings. Figure 6(b) shows the Bloom Community interface, a social support space designed to foster emotional connection and mutual encouragement among users. Posts regarding a user's thoughts, emotional journey, or Bloom Garden growth can be shared. This feature is essential for evoking the Kansei qualities of comfort, support, and connection, as it provides a safe environment for sharing experiences and encouraging one another. Peer posts provide users a sense of community and less isolation, which is beneficial for university students managing emotional stress.

Figure 6

(a) MoodBloom's Bloom Calendar Page (b) MoodBloom's Bloom Community Page



The design was evaluated using both formative and summative methods. The formative evaluation presents a comprehensive exploration of MoodBloom's early-stage design, focusing on its core functionalities, user interface, emotional tone, and areas for improvement. This evaluation plays a critical role in identifying the application's current strengths and uncovering opportunities to refine its usability and emotional resonance. Expert evaluations and qualitative usability testing, such as task-based assessments and post-task interviews, were part of the formative evaluation process. Task-based usability testing phase involves having experts interact with the MoodBloom high-fidelity prototype by performing a set of predefined tasks that reflect typical user activities, such as logging a mood, listening to a calming soundscape, completing daily self-care activities in the Bloom Garden, and viewing mood insights on the Bloom Calendar. The goal is to observe how intuitive and accessible the application is in supporting student mental health and well-being, and further uncover potential usability challenges, interface confusion, emotional responses to the design and interactions.

Immediately after completing each task, experts participate in a brief interview to reflect on their experience. These post-task interviews are designed to capture deeper insights that may not emerge during the task itself. Questions like "Was it easy to find and complete this task?", "Does this element feel calming and engaging?", "Was it clear what you needed to do to help the plant grow?" and "Did you encounter any confusing layouts or buttons?" were asked to explore emotional resonance of the tasks, perceptions of the design and content, and suggestions for improvement. This phase is crucial for assessing both functional usability and emotional design effectiveness, drawing on Kansei Engineering principles to evaluate how the interface influences user feelings and psychological comfort.

A multimedia expert, a content expert, and a potential end user are among the experts involved. The multimedia expert focused on improving MoodBloom's visual hierarchy, user flow clarity, accessibility, and onboarding strategy. Their insights were grounded in HCI principles to ensure that users can interact with the app intuitively, efficiently, and with emotional resonance. This expert provided input on the app's

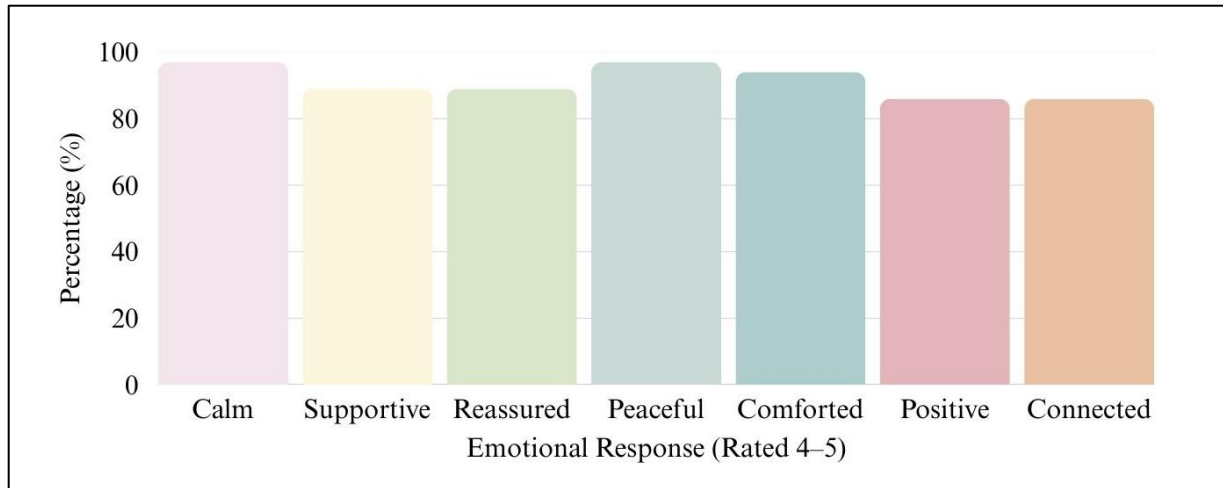
visual hierarchy, user flow, mood-driven aesthetics, and first-time user guidance, ensuring the design evokes the proper Kansei-based emotional responses and visual clarity. As for the content expert, a professional with a background in psychology and mental health education evaluated Moodbloom through the lens of emotional safety, psychological inclusivity, and cognitive engagement. The expert focused on ensuring that affirmations, emotional tone, and supportive interactions align with principles of emotional well-being, trauma-informed design, and positive psychology. They also assessed whether the app could provide a sense of calm, support, and emotional validation for university students. Last but not least, the potential end user is a law student aged 23 who has prior experience using mental health apps. She represented the app's target demographic and provided feedback based on her practical expectations and emotional responses. Her insights focused on the app's ease of use, emotional tone, visual design, and calming effectiveness, offering a user-informed perspective grounded in her personal experience with mental health apps.

The purpose of the summative assessment was to evaluate MoodBloom's overall usability and emotional impact in promoting mental wellness among university students and confirm the presence and strength of each Kansei element in the user experience, and identify any remaining gaps or refinements needed to ensure the app provides a holistic, emotionally supportive, and functional experience for students before full implementation. A total of 35 undergraduate students, aged 20 to 24, from diverse academic backgrounds, participated in this phase. These participants were chosen to represent the core user base of MoodBloom, which consists of young adults enrolled in university who might be prone to mood swings, stress and anxiety. A structured questionnaire, intended to measure emotional responses and satisfaction with the app's emotional design and functionality, was used after user testing as part of the approach. This approach provided valuable insight into how the final version of MoodBloom performed in real-world use and whether it successfully delivered its intended emotional and functional outcomes.

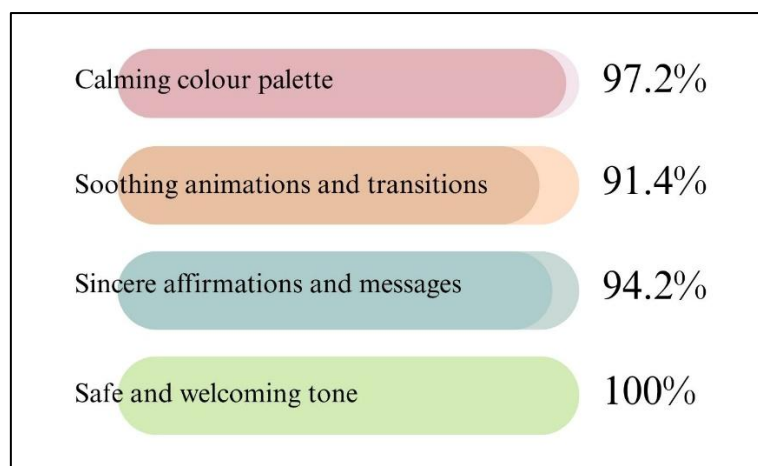
EVALUATION AND RESULTS

The summative evaluation aimed to assess MoodBloom's overall usability and emotional impact in supporting the mental well-being of university students. A total of 35 undergraduate students, aged 20 to 24, from diverse academic backgrounds, participated in this phase. A structured questionnaire, intended to measure emotional responses and satisfaction with the app's emotional design and functionality, was used after user testing as part of the approach. The questionnaire was divided into four sections, each focusing on a different aspect of the user's emotional experience. Seven bipolar word combinations, each linked to a Kansei element, were used in Section 1 to ask participants to assess their emotional response. Section 2 evaluated how well affirmations, colour, and transitions complemented the app's emotional tone. Section 3 focused on emotional engagement and key interactions, including mood logging, receiving feedback, and using features such as the Bloom Garden and Calendar. In Section 4, users were asked both multiple-choice and open-ended questions about their overall impressions, changes, and emotional tone after using the app.

The summative evaluation results for MoodBloom provided quantitative insights into participants' experiences. Figure 7 (Section 1) illustrates the percentage of participants who rated each emotional response as 4 or 5 on the scale. 27 of 35 participants rated a 5 (strongly calm), showing the app was widely perceived as calming. 30 of 35 selected 5 for peaceful, making peaceful the most strongly experienced emotion. Other Kansei elements, such as supportive, reassured, comforted, positive, and connected, also received high scores, with most users rating 4 or 5. These results show that Moodbloom accomplishes its emotional design objectives. The app works exceptionally well at fostering vital emotions for mental well-being, such as calm, peace, and comfort.

Figure 7*Section 1: Emotional Impact*

Section 2 (Figure 8) findings show that MoodBloom's emotional design elements are well received. The calming colour palette was highly rated, with 97.2% agreeing it helped them feel more focused and at ease, supporting the Kansei principle that visual tone can influence mood. Soothing animations and transitions also received positive feedback, with 91.4% agreeing, suggesting their gentle motion contributes to emotional relaxation. Users responded positively to the app's sincere affirmations, noting that the encouraging language helped foster a sense of emotional safety. Most notably, all participants (100%) agreed that the overall tone felt safe and welcoming, with 71.4% strongly agreeing, highlighting the app's success in establishing trust and comfort through design.

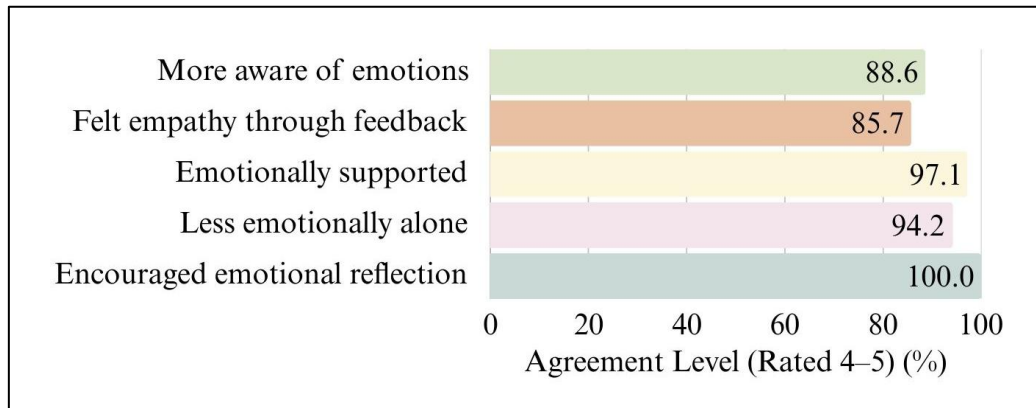
Figure 8*Section 2: Emotional Design Elements*

The usefulness of Moodbloom in promoting emotional contact and functionality is highlighted in Section 3 (Figure 9). With 34.3 per cent agreeing and 54.3 per cent strongly agreeing that mood journaling encouraged self-reflection, a vast majority (88.6%) reported feeling more emotionally aware. 85.7 per cent of users reported feeling empathetic in their feedback following mood check-ins, suggesting that the design effectively communicated understanding. The app's capacity to offer comfort and psychological safety was

demonstrated by the fact that 97.1 per cent of users reported feeling supported. Furthermore, 100% of respondents agreed that the app promoted emotional introspection. These findings support Moodbloom's ability to use interactive emotional characteristics to promote empathy, connection, and contemplation.

Figure 9

Section 3: Emotional Functionality and Interaction



The open-ended question in Section 4 (overall emotional experience and reflections) uncovered valuable insights as participants shared their feedback. The qualitative data yielded several key themes that emerged from the analysis, which are as follows:

1. **Emotional Calm and Relaxation:** Many users described feeling calm, peaceful, and emotionally grounded after using the app. The colour palette, gentle interface, and ambient music were frequently mentioned as contributing to a soothing experience.
2. **Connection and Emotional Support:** Several participants highlighted how features like the community sharing function and affirmations helped them feel connected, encouraged, and emotionally supported.
3. **Visual Aesthetics and Design Appeal:** The app's colour scheme, graphics, fonts, and overall visual coherence were all frequently complimented by users. The design was characterised as delicate, minimalist, cloudy, adorable, and emotionally impactful.
4. **Self-Awareness and Reflection:** The Bloom Calendar and Mood Check-In features were seen as valuable resources for encouraging users to stop, think, and acknowledge their feelings, often in a nonjudgmental manner.
5. **Engagement and Enjoyment through Features:** The soundscape, mood tracking, and plant growth elements were characterised as enjoyable, fulfilling, and meaningful. Users reported having fun exploring new elements, interacting with music, and watching their virtual tree grow.
6. **Suggestions for Improvement:** Although the majority of the feedback was excellent, a few participants made suggestions for improvements to increase the app's usability and personalisation. These included enhancing the onboarding process with more precise, multi-step instructions and enabling users to examine all emotion options simultaneously rather than swiping. To provide a more engaging and customised experience, several people also asked for visual components that could be customised, such as selecting different flower shapes.

As a result, MoodBloom was found to be highly effective in supporting students' emotional well-being through its thoughtfully designed interface and features. The summative evaluation demonstrated that the app successfully created a safe, calming, and engaging environment for users to reflect on and manage their emotions. Numerous participants reported greater self-awareness, emotional clarity, and connection in response to the app's visual aesthetics, affirmations, mood tracking, community sharing, and soothing audio. Importantly, all seven Kansei elements — calm, supportive, reassured, peaceful, comforted, joyous, and connected — were perceived as present and functioning throughout the app, as reflected in both quantitative ratings and open-ended feedback. These emotional qualities were effectively conveyed through the app's colour palette, gentle animations, affirming messages, mood-based interactions, and social features. In summary, MoodBloom not only meets its intended purpose of promoting emotional wellness but also demonstrates strong potential as a meaningful mental health support tool for university students. In conclusion, MoodBloom not only achieves its goal of fostering emotional wellness but also shows great promise as a helpful tool for university students seeking mental health care. Future emotionally sensitive digital interventions could benefit significantly from a Kansei-informed design methodology.

CONCLUSION

In this paper, the design and development of a Kansei-based mental health application to support the emotional well-being of university students has been discussed. The app successfully translated users' emotional expectations into tangible design solutions through a structured Kansei engineering methodology that incorporates both functional and emotional needs, with the seven Kansei elements gathered. The methodology encompassed a need analysis in the Kansei Research stage, Kansei element identification in the Kansei Analysis stage, prototype design, and evaluations in the Product Design stage. Findings from the summative evaluation revealed that the app successfully evoked the targeted emotional responses—calm, support, reassurance, peace, comfort, positivity, and connection —across all user interactions. Users noted high levels of emotional safety, engagement, and contentment with visual, auditory, and social features. These findings highlight how effectively emotional design can be incorporated into digital wellness resources and demonstrate how emotionally resonant apps can help students become more self-aware and mentally resilient. MoodBloom presents a promising direction for future mental health and emotional well-being interventions that emphasise empathy, personalisation and meaningful user experience. Future research could investigate broader adoption and explore feature scalability to extend its impact across diverse educational settings.

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