

Name: Jhanvi Chaudhary

Student Number: 2430968

Module Name and Code: Population Health
and Digital Health Promotion (LCHS7009)

Lecturer Name: Dr Ping Wu

Overview: Jhanvi

Part 1: Iqdad

Part 2: Jhanvi Chauhan

Part 3: Sawon Farazi

Part 4: Krina

Group presentation (Group 1)

CALM : EASING STUDENT ANXIETY



CONTENTS

 01 Who and Why

 02 Policy and Stakes

 03 Core Techniques

 04 Digital Advantage

 05 Next Steps

 06 Live Demo

01

Who and Why



Target Age group (20-25 years)

University students aged 20–25 are highly digitally fluent, often preferring mobile tools for managing wellbeing .Their comfort with technology makes digital interventions a natural fit .

Balancing Pressures

This age group faces overlapping academic, financial, and social demands that increase vulnerability to anxiety .

Formative Stage

Young adults are still developing core coping strategies, making early intervention valuable for preventing chronic stress patterns.

Why This Group Feels the Strain



01

Overlapping Stressors

Coursework pressure, financial concerns, sleep problems, and career uncertainty contribute to elevated cortisol and reduced concentration (Bewick et al., 2010).



02

Escalating Consequences

Unmanaged student stress can lead to declining academic performance, poor wellbeing, and increased dropout risk (Hunt and Eisenberg, 2010).



UK Student Anxiety Snapshot



01

Severe Anxiety

One in four students report severe anxiety (Auerbach et al., 2018).



02

Performance Anxiety

Performance anxiety affects 77% of university students



03

Dropout Increase

Mental-health-related dropout has increased by 210% since 2010.



04

Benchmarking

These statistics provide a benchmark for evaluating intervention outcomes.

02

Policy and Stakes



NHS and NICE Back Digital Aid

NHS Long Term Plan

The NHS Long Term Plan prioritizes early support for young adults, endorsing digital mental-health solutions (NHS England, 2019).



NICE Guidelines

NICE guidelines recommend digital CBT and evidence-based self-help tools for anxiety management (NICE, 2020).





Cost of Ignoring Student Anxiety



01

Academic Decline

Unaddressed anxiety disrupts concentration and academic motivation .

02

Health Consequences

Common effects include disturbed sleep, fatigue, and heightened risk of depression .

03

Long-term Impact

Persistent anxiety increases the likelihood of withdrawing from university and affects future career stability.



03

Core Techniques



Breath and Mindfulness

Breathing Benefits

Slow breathing activates the parasympathetic nervous system and reduces cortisol.



Mindfulness Impact

Brief mindfulness sessions lower rumination and anxiety while improving focus.



Practical Accessibility

These techniques require no equipment and can be incorporated into daily routines.





Track, Reflect, Reframe

Mood Tracking

Mood-tracking supports emotional awareness and helps identify triggers (NHS,2019).

Journaling

Journaling encourages cognitive reframing and supports healthier emotional processing.





04

Digital Advantage

► Why Students Choose App Support



[This Photo](#) by Unknown Author is licensed under [CC BY-SA-NC](#)

Privacy

Digital platforms reduce stigma and maintain privacy.

Accessibility

Apps provide flexible, 24/7 access.

Habit Formation

Push notifications support habit formation.

Data Tracking

Apps enable long-term data tracking and insights



Inside Calm Features

Feature Overview

Calm includes mood tracking, guided meditation, breathing exercises, reminders, and secure journaling .





Evidence of Real-World Impact



Systematic Reviews

Systematic reviews show digital anxiety interventions reduce symptoms by 30–45% (Davies, Morriss and Glazebrook, 2022).



Retention Rates

Students demonstrate higher retention rates when using digital tools compared to traditional therapy.

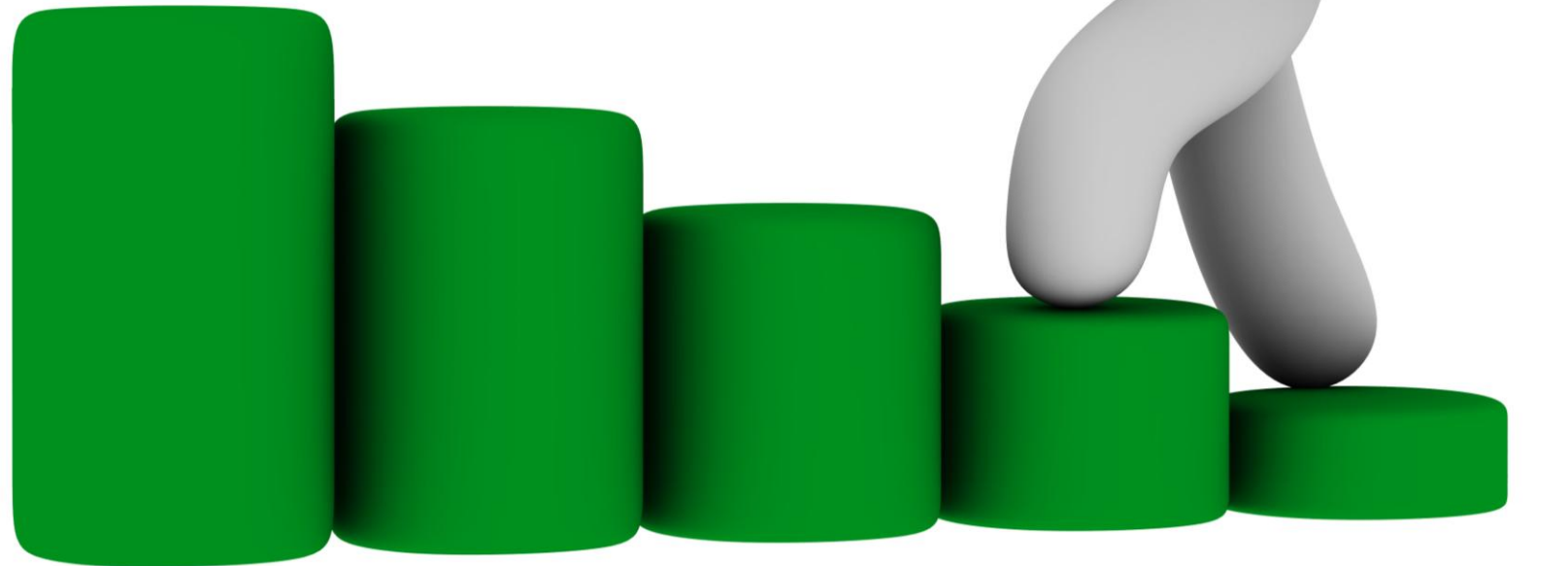


Long-term Benefits

Long-term use improves emotion regulation over academic terms (Firth et al., 2017).

05

Next Steps





Pilot Rollout Plan on Campus

Recruitment

Recruiting 200 volunteers across faculties ensures diverse representation.

Integration

Integrating SSO and onboarding workshops supports smooth adoption.





Sustain and Scale Beyond Pilot

Partnerships

Partnerships with the Student Union and NHS improve sustainability.

Data Sharing

Anonymised data supports continuous improvement .

01

02

03

04

Embedding

Embedding app referrals in tutor pathways enhances uptake.

Ambassador Program

Peer ambassadors promote wider use .



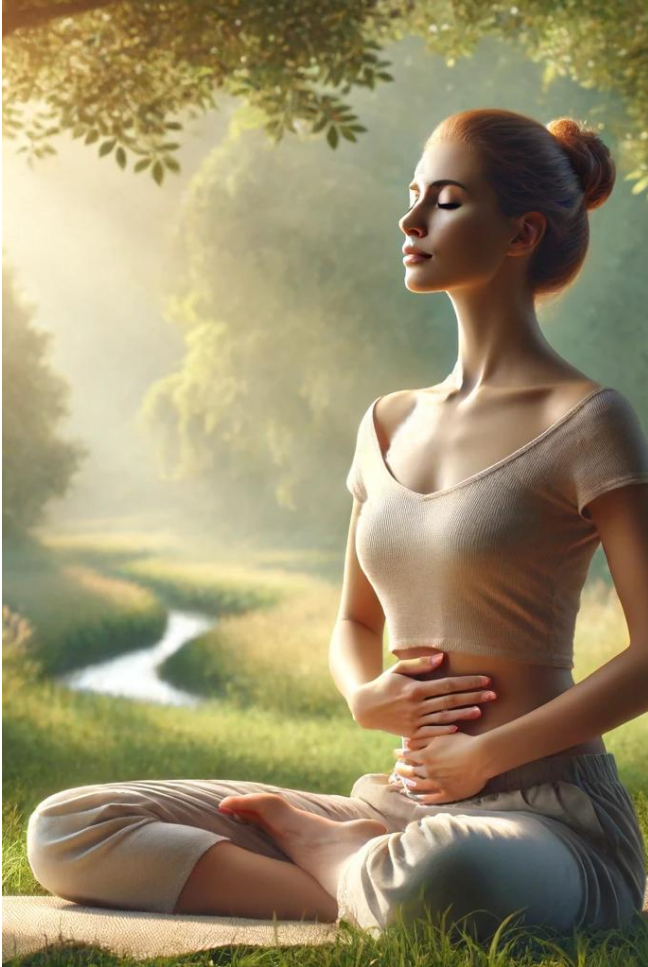
06

Live Demo





Guided Breathing Experience



Real-time Feedback

Short, paced-breathing sessions provide immediate physiological calm

Narrative Guidance

Narrative guidance enhances engagement and learning

Micro-sessions

Micro-sessions fit naturally between lectures or exams .



Mindful Check-In and Mood Log

Immediate Logging

Students record their present mood and stress level in the app, witnessing instant data capture and trend graphing

Habit Formation

This quick logging reinforces self-awareness, shows how emotions fluctuate, and models the minimal-effort habit for longitudinal insights



Iqdad Ali (2428690)

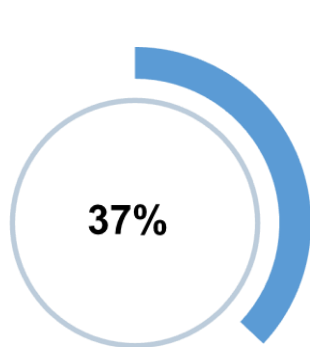
**Digital Anxiety & Stress
Reduction for University
Students Using the
Calm App**



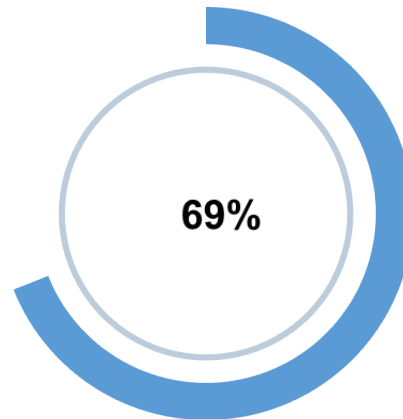


Scale of the Problem - National Statistics

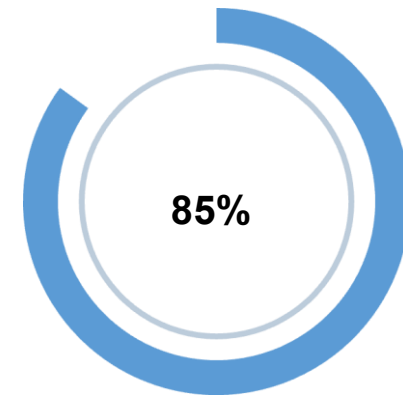
University students aged 20-25 in the UK face mounting mental health challenges. Recent studies reveal:



Experience moderate-to-severe anxiety or depression symptoms
Higher than the general population
(Cogan et al., 2024).



Report anxiety affecting academic participation
But less than half disclose this to university services (Oxford CBT, 2024).



Impacted by exam stress
Exacerbated post-COVID-19 pandemic
(Student Minds, 2025).

These statistics highlight the pressing mental health crisis faced by students in higher education.

National Guidelines & Target Group Justification

National guidelines and strategies emphasize digital mental health support:



NHS Long Term Plan

Prioritizes digital tools to enhance accessibility and responsiveness in mental health care for students (NHS Confederation, 2023).

University Mental Health Charter

Promotes institution-wide mindfulness and resilience programs tailored to students aged 20-25, addressing transition and academic stresses (Student Minds, 2025).

Office for Students

Mandates evidence-based interventions for student mental health, with a focus on this vulnerable cohort (Office for Students, 2024).

The target group faces unique challenges such as financial pressures and social isolation, justifying this intervention focus.

Consequences of Not Addressing the Concern

- Untreated student anxiety leads to severe academic dropout (rates 3x higher), substance misuse, and rising suicide numbers across UK HEIs (Cogan et al., 2024).
- Chronic stress causes neurobiological changes (brain atrophy), immune suppression, and +30% CVD risk in young adults (Mayo Clinic, 2025).
- Inaction creates £2.5bn annual NHS burden from untreated student mental health, exacerbating health inequalities despite lower suicide rates than peers but rising absolute deaths (Cogan et al., 2024).

Academic Impact

Dropout rates 3x higher with untreated anxiety

Health Consequences

Brain atrophy, immune suppression, +30% CVD risk

Economic Burden

£2.5bn annual NHS cost from untreated conditions



Source: Google

Chosen Intervention - Calm App Description

The Calm app is a digital mental health promotion intervention designed specifically for university students aged 20-25:

- Provides mindfulness meditation, breathing exercises, and soothing sleep stories via mobile devices (Lew et al., 2025).
- Includes daily, brief (10-minute) guided sessions tailored to managing academic stressors.
- Demonstrated efficacy in reducing Perceived Stress Scale scores from 20 to 15 after 30 days of use (Huberty et al., 2019).
- Improves sleep quality by 16%, critical for overall mental health (Huberty et al., 2019)
- Accessible 24/7, addressing common barriers such as stigma and time constraints (NHS Confederation, 2023).

This intervention supports self-efficacy and personal resilience among students.



Source: Google

Why Calm App? Evidence & Rationale

Iqdad Ali (2428690)

Calm app is justified by robust evidence and practical benefits:

Achieves moderate-to-large improvements in mindfulness and self-compassion with effect sizes ranging 0.59 to 1.24, sustained at follow-up (Huberty et al., 2019)

Aligns with NHS digital mental health priorities and university strategies emphasizing scalable, self-guided tools (Huberty et al., 2022)

High user satisfaction: 86% of students recommend the app despite varying engagement levels (Lew et al., 2025)

Demonstrates originality through integration of digital health promotion theories such as COM-B behaviour change framework (Michie, Van Stralen and West, 2011)

Cost-effective compared to traditional counselling (£0 basic version, reducing NHS therapy waiting burdens) (Lee and Jung, 2018)



Source: Google

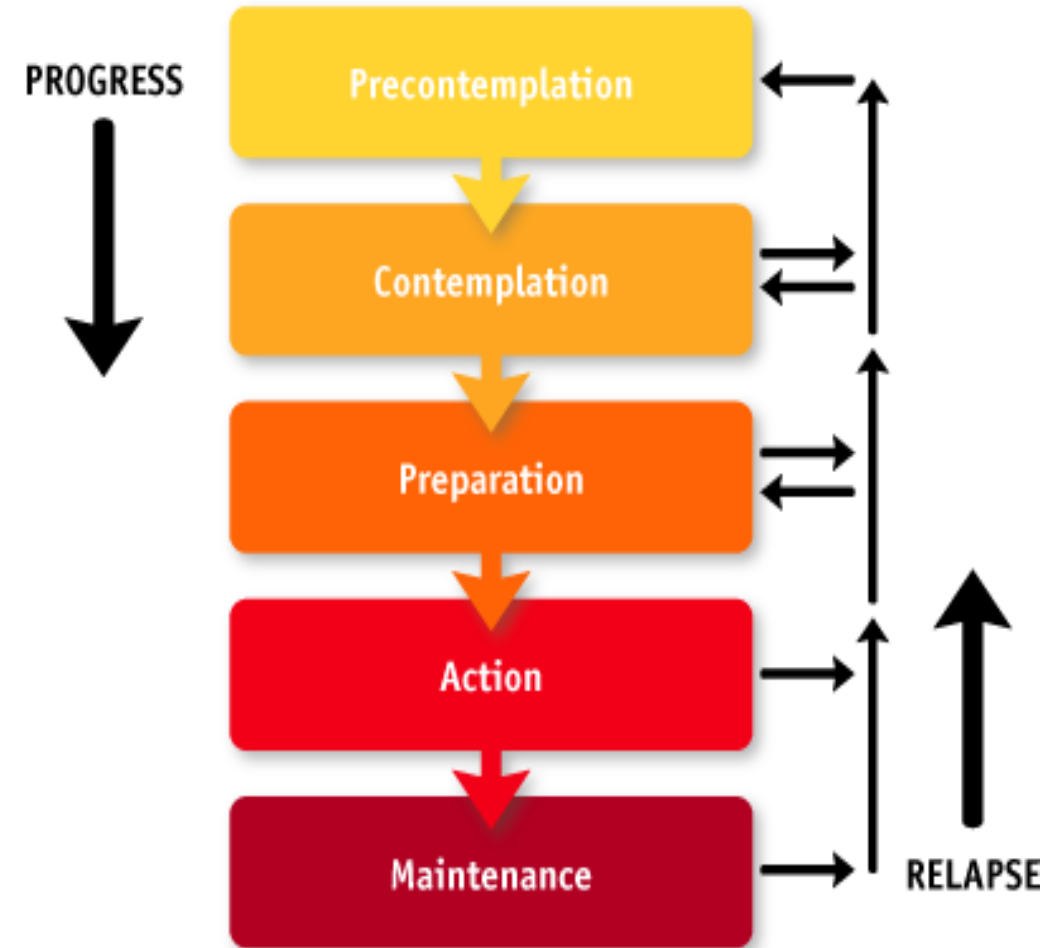
Jhanvi Chauhan : Part 2

APPLICATION



The Transtheoretical Model (TTM)

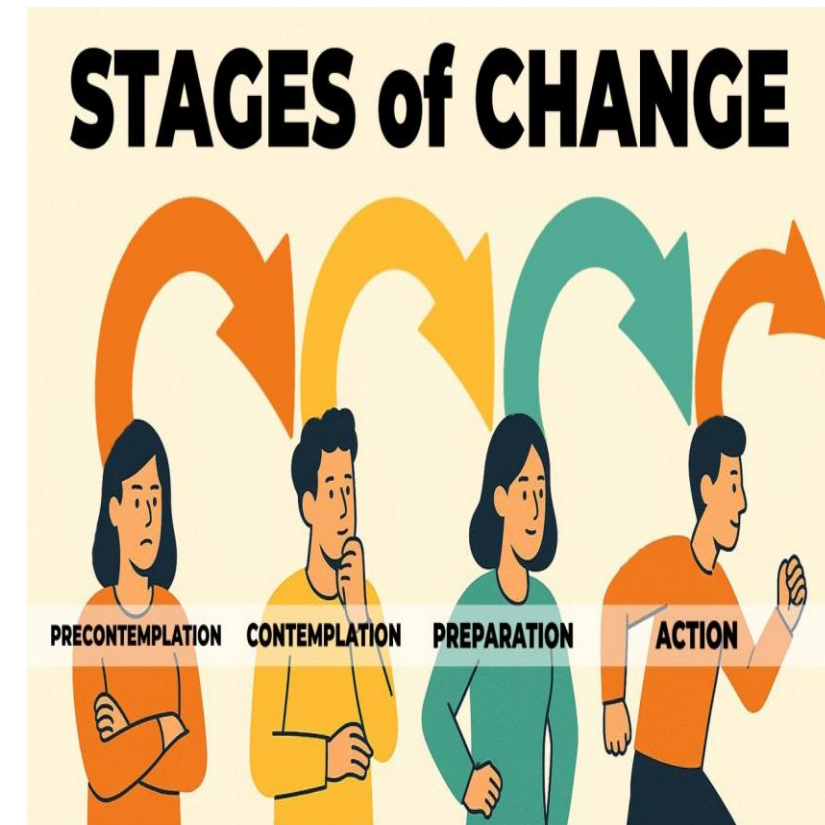
- The TTM describes how individuals gradually progress through different stages of behaviour change rather than changing all at once (Prochaska, 2019).
- It emphasises readiness and motivation, helping users adopt and maintain healthier habits such as using the Calm app to manage anxiety and improve wellbeing (Prochaska, 2019).
- The model includes five key stages: Precontemplation, Contemplation, Preparation, Action, and Maintenance, which guide how support and interventions are delivered based on the user's stage (Evers and Balestrieri, 2024).



- At this stage, the student is not yet aware that their stress or anxiety may be affecting their wellbeing, and they are not actively thinking about changing their behaviour. Anxiety may feel normal in university life, and meditation or mindfulness apps may be viewed as unnecessary, ineffective, or not personally relevant (Evers and Balestrieri, 2024).

Application in Calm App:

- Awareness-raising strategies such as short social media videos or relatable posts about student stress can help capture attention and spark early interest.
- Providing free introductory content, simple demonstrations, and real student testimonials can help build trust and reduce hesitation.
- Gentle prompts like *“Did you know just five minutes of breathing can lower stress?”* can encourage early reflection without pressuring the student (Alhasani and Orji, 2025).

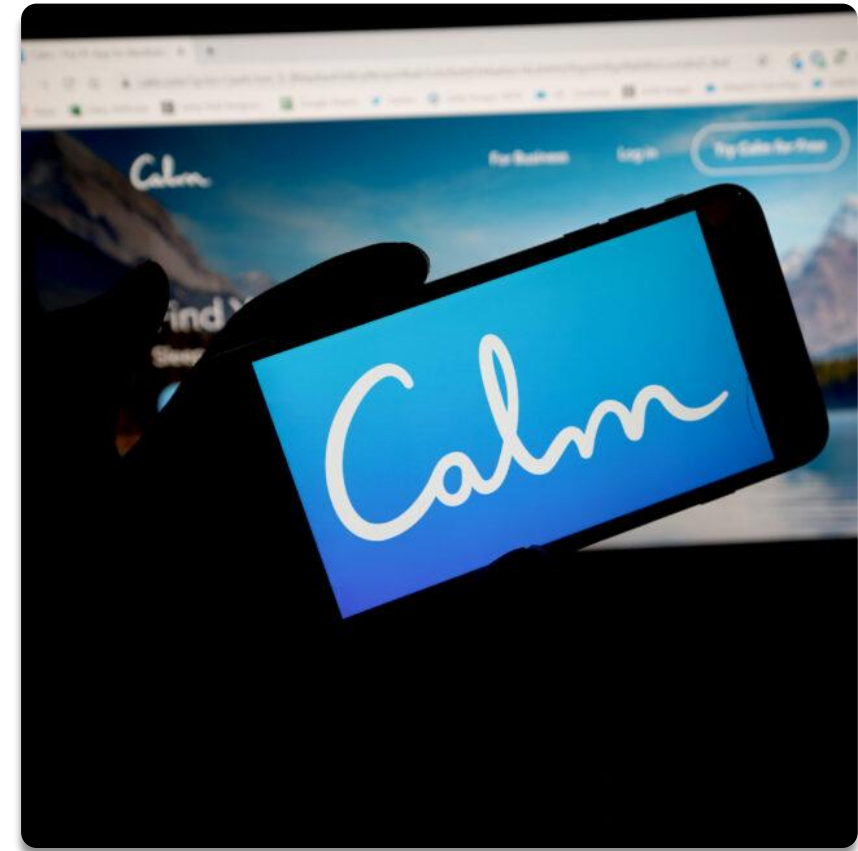


2. Contemplation Stage

- The student now acknowledges that stress or anxiety may be affecting their emotional or academic well-being. They are beginning to consider making a change, but may still feel unsure, hesitant, or uncertain about whether the Calm app will be effective (Prochaska, 2019).

Calm App Application:

- Short previews or sample guided meditation sessions can help the student explore the app without commitment.
- Stress assessments or quick reflection quizzes can help increase self-awareness and motivation to act.
- Motivational reminders and encouraging messages can support decision-making and reduce doubt (Nicoară et al, 2024).



- The student is planning to act soon and is exploring resources to support behaviour change. They may have downloaded the Calm app or researched its features, but have not yet developed a consistent routine (Keshavarzi et al, 2021).

Calm App Application:

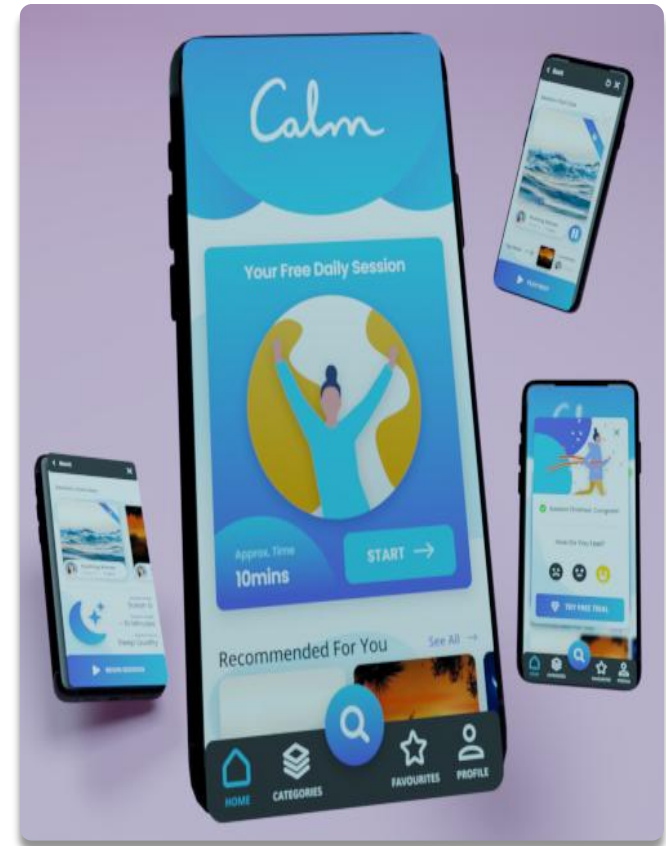
- A beginner-friendly 7-day program can help provide structure and confidence for starting the behaviour.
- Onboarding tutorials, step-by-step guidance, and simple setup instructions make it easier to begin.
- Goal-setting features, such as scheduling five minutes of meditation per day, help establish commitment (Alhasani and Orji, 2025).

4. Action Stage

- The student is actively engaging in new behaviours and consistently using the Calm app as part of their routine. Visible progress can be observed, and they are intentionally working to reduce stress and improve emotional well-being (Fenn et al, 2022).

Calm App Application:

- Daily meditation sessions, breathing exercises, and sleep support tools help reinforce new habits.
- Progress tracking, streak rewards, and personalised reminders encourage consistency and motivation.
- Group challenges or peer support features can help maintain engagement and a sense of community (Laird et al, 2022).



5. Maintenance Stage

- The new behaviour is now stable and integrated into the student's regular lifestyle or routine. The focus shifts to preventing relapse, managing barriers, and sustaining long-term wellbeing habits (Fenn et al, 2022).

Calm App Application:

- Advanced meditation courses, sleep stories, or yoga sessions allow continuous skill development.
- Periodic check-ins, supportive feedback, and personalised encouragement help maintain motivation.
- Celebrating milestones and earning achievement badges reinforces progress and long-term commitment (Laird et al, 2022).

- At this stage, the habit feels natural, automatic, and firmly part of the student's identity and lifestyle. The individual feels confident in their ability to maintain emotional well-being with little risk of returning to old stress-related behaviours (Keshavarzi et al, 2021).

Calm App Application:

- Optional, ongoing mindfulness support remains available to sustain confidence and independence.
- Mastery or expert-level programs can continue to challenge growth and deepen wellbeing practice.
- Students may begin sharing knowledge, acting as ambassadors, or supporting peers, reinforcing personal mastery (Laird et al, 2022)..



TTM supports personalised intervention by matching strategies to a student's readiness to change, making the Calm app adaptable for users at any motivation level (Geis and Heyland, 2024).



The model recognises that behaviour change happens gradually, which aligns well with forming mindfulness habits such as daily meditation or stress-reduction practices (Prochaska, 2019).



It allows the app to provide different types of guidance, reminders, and content depending on whether a student is unaware, considering, starting, or maintaining use (Geis and Heyland, 2024).



TTM helps track progress across stages, making it easier to measure engagement, improvement, and long-term habit adoption (Prochaska, 2019).

Name: Sawon Farazi

ID: 2431587

Identification of Potential Stakeholders

Primary Stakeholders:

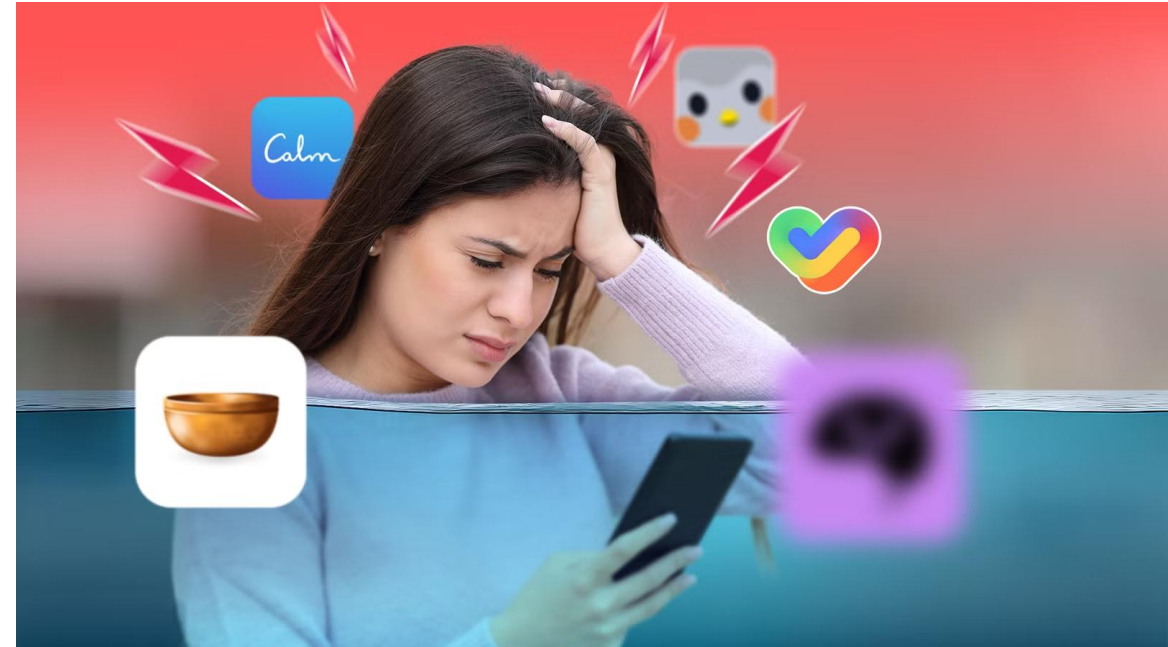
- **University Student Services and Counselling Departments** are key stakeholders in integrating Calm into mental health support systems.
- These teams evaluate student needs, su clinical care, and coordinate campus impleme (Austin, Bandealy and Cawley, 2025).



Identification of Potential Stakeholders

Primary Stakeholders:

- **Academic and Professional Staff** Lecturers, personal tutors, and academic advisors are frontline advocates for app adoption in teaching (Barnwell and Patton, 2025).
- This group targets at-risk students, promotes app use, and models stress management (England, 2025).
- **Student Unions and Peer Support Networks** engage students as co-designers and champions of the intervention.



Name: Sawon Farazi

ID: 2431587

Identification of Potential Stakeholders

Secondary Stakeholders

- **University Administration and Leadership** provide institutional support, funding, IT infrastructure compatibility, and app implementation policies (Group, 2023).
- **Information Technology and Information Governance Teams**
Technical infrastructure must support app deployment, data security, and UK GDPR compliance (Macrynika et al., 2024).
- **External Partners** including the Calm app developers provide technical support, licence agreements, and usage analytics.

Identification of Potential Stakeholders

Tertiary Stakeholders:

- **Parents and Families** require engagement regarding data privacy and intervention objectives, particularly for students under 25 years old (Matos et al., 2025).
- **Research Ethics Committees (REC)** oversee implementation if institutional evaluation exceeds service evaluation thresholds.
- **Mental Health Advocacy Groups and Service Users** provide lived experience perspectives informing design and implementation adjustments.

Name: Sawon Farazi

ID: 2431587

Identification of Potential Barriers to Successful Implementation

Individual-Level Barriers:

- Fewer than 5% of mental health app users complete programs without support, and 88.9% use them for one day (Michela Nosè et al., 2025).
- University students face time pressures from academic workload, financial strain, and social commitments that reduce sustained app use.



Name: Sawon Farazi

ID: 2431587

Identification of Potential Barriers to Successful Implementation

Individual-Level Barriers:

- Disadvantaged, first-generation, and international students may lack internet, devices, and mental health app confidence due to digital literacy gaps (Wies, Landers and Ienca, 2021).
- Data costs, phone storage, and troubleshooting issues limit app use among low-income students.
- Students fear stigma for downloading mental health apps, which deters them.
- Student privacy concerns about data storage, third-party sharing, and algorithmic mental health monitoring reduce adoption.



Identification of Potential Barriers to Successful Implementation

Organisational-Level Barriers

- Institutional Resource Limitations and Competing Priorities constrain implementation capacity.
- Absence of Structured Integration and Professional Guidance significantly undermines intervention success.
- Fragmented Mental Health Service Structures and Poor Inter-Agency Collaboration create implementation challenges (Zhu, Wang and Hu, 2024).
- Insufficient Technical Infrastructure and Data Security Governance pose implementation obstacles.



Identification of Potential Barriers to Successful Implementation

Systemic-Level Barriers

- Limited Evidence of Implementation Effectiveness in UK Higher Education Contexts creates uncertainty regarding intervention success (Austin, Bandy and Cawley, 2025).
- Lack of Clear Clinical Governance and Accountability Structures creates ambiguity regarding professional responsibility.
- Regulatory and Compliance Uncertainty generates implementation delays.

Legal and Ethical Issues in Implementation and Delivery

Data Protection and GDPR Compliance

- The Data Protection Act 2018 enforces the UK GDPR, which restricts personal data processing, including mental health data (Barnwell and Patton, 2025).
- **Legal Basis for Processing:** Institutions must legally collect and process student mental health data.
- **Data Protection Impact Assessments:** Institutions must conduct thorough DPIAs before implementation because mental health data is sensitive and can cause serious harm.



Name: Sawon Farazi

ID: 2431587

Legal and Ethical Issues in Implementation and Delivery

Data Protection and GDPR Compliance

- **Data-sharing agreements:** Formal data processing agreements must specify data handling obligations.
- **University students under 25 face unique challenges:** UK law does not require parental consent for university students over 18 (Group, 2023).
- However, institutions should clarify whether 18-25-year-olds can consent to mental health data processing without parental consent.

Legal and Ethical Issues in Implementation and Delivery

Mindfulness and Consent

- Capacity assessments are essential, as some students in acute mental health crises or with neurodevelopmental conditions may be unable to provide valid consent (Macrynika et al., 2024).
- Informed consent must be clear and accessible, outlining purpose, risks, benefits, alternatives, data use, and withdrawal rights in plain language.
- Consent documentation should avoid legal jargon, ensuring students can understand electronic or written forms without confusion (Matos et al., 2025).
- Students must be fully informed about confidentiality limits, including when information may be disclosed or escalated for safety.

Name: Sawon Farazi

ID: 2431587



Legal and Ethical Issues in Implementation and Delivery

Safeguarding and Duty of Care

- **Assessing and Monitoring Risk:** University duty of care requires identifying and helping mental health crisis students.
- App content analysis or user reporting protocols must be established to identify suicidal, self-harming, or other high-risk users (Michela Nosè et al., 2025).
- **Vicariously Liable:** If intervention-related guidance harms third parties, universities may be liable.

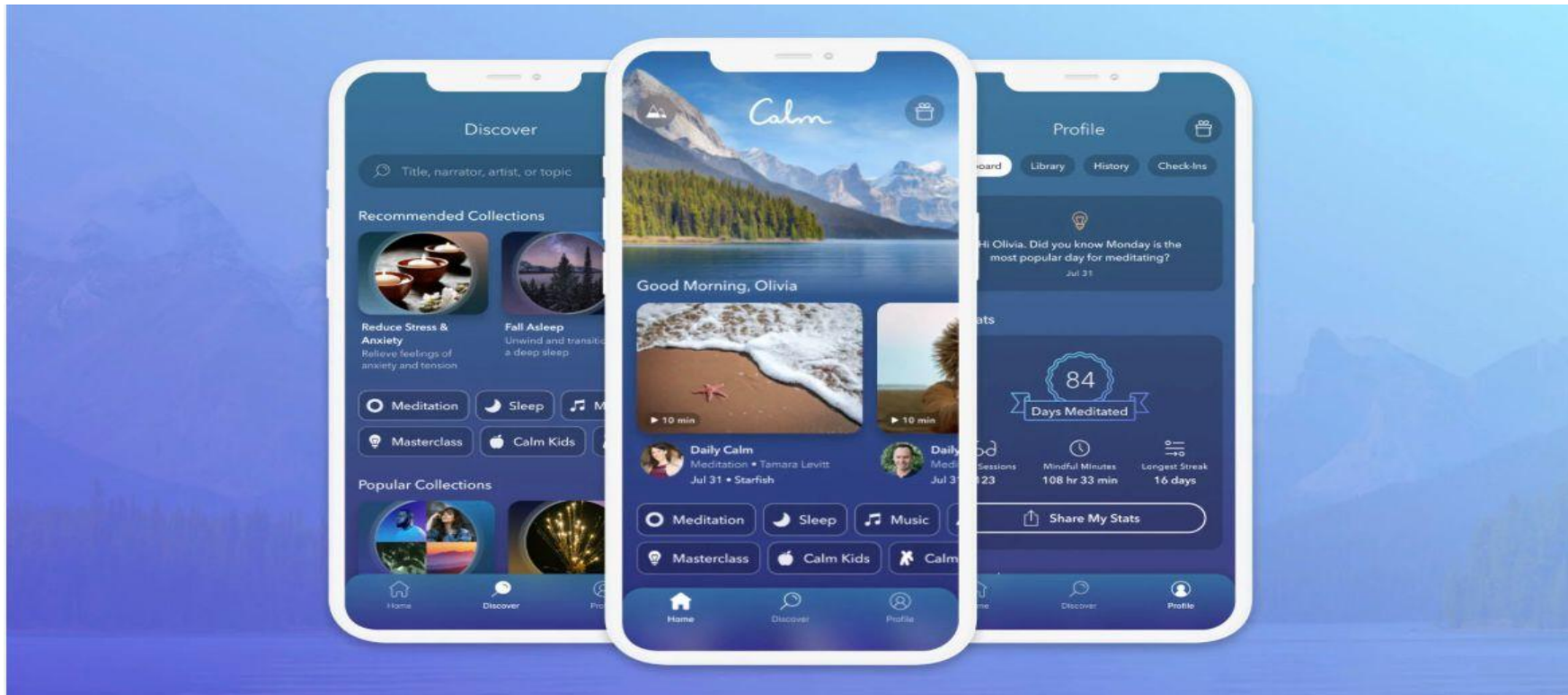
Legal and Ethical Issues in Implementation and Delivery

Regulatory and Professional Standards Compliance

- **Classification and Regulation of Medical Devices:** Calm may be a medical device under UK Medical Device Regulation if it claims diagnosis.
- **Health and Safety Executive Considerations:** Digital mental health tools in institutions may trigger Health and Safety at Work obligations.
- **Professional and Ethical Guidelines:** Regulatory bodies like the HCPC, BPS, and BACP set standards for mental health professionals who deliver or supervise digital interventions (Mwaka et al., 2025).



Calm : Student Benefits & Impact



Name: Krina Patel
Student ID: 2430966



01

Student Gains



Immediate Mental Wellbeing Lift

Evidence-Based Relief

Calm offers breathing exercises, guided meditation, and sleep stories, backed by research showing a 30-45% reduction in anxiety symptoms, providing immediate relief for students under academic pressure (Firth et al., 2017; Lattie et al., 2019).



Improved Emotional Regulation

Regular use of Calm enhances emotional regulation and sleep quality, helping students manage stress more effectively and maintain overall mental wellbeing (Huberty et al., 2021).

Support for Academic Success

By reducing anxiety, Calm improves focus, concentration, and productivity, directly supporting students' academic performance and helping them meet deadlines (Harrer et al., 2018; Auerbach et al., 2018).



Access Anytime, Anywhere

24/7 Availability

Calm is available around the clock, providing support outside traditional counselling hours, which is crucial for students balancing multiple responsibilities (Brown et al., 2014).

Barrier-Free Access

The app removes barriers such as waiting lists, travel, and scheduling, making mental health support accessible to all students, including those with social anxiety (Auerbach et al., 2018).





Self-Awareness & Early Action

Mood Tracking

Calm's mood tracking feature helps students identify stress triggers and emotional patterns, enabling them to take early action before symptoms escalate (Norman & Skinner, 2006).

Proactive Self-Management

By promoting self-awareness, Calm empowers students to manage their mental health proactively, fostering long-term wellbeing and resilience (Busse et al., 2022).

Early Intervention

Identifying early signs of distress allows for timely intervention, preventing minor issues from becoming more severe and reducing the need for crisis support.

Long-Term Skills

The self-management skills developed through Calm's tools are transferable and beneficial beyond university, supporting lifelong mental health.



Academic Edge Through Calm

Enhanced Academic Performance

Lower anxiety levels directly improve focus, concentration, working memory, and productivity, enabling students to better manage deadlines, maintain motivation, and prevent burnout, which are critical factors for academic success (Harrer et al., 2018; Auerbach et al., 2018).





Scalable, Budget-Friendly Support

01

Cost-Effective Solution

Calm provides scalable support for large student populations without requiring additional staffing, making it a cost-effective alternative to traditional counselling services (Lattie et al., 2019).

02

Reduced Pressure on Services

By offering immediate support, Calm eases the pressure on university counselling services, ensuring that students who need help can access it without cost barriers (Harrer et al., 2018).



Habits That Stick: Promoting Healthy Behaviour Change

Personalised Reminders

Calm uses personalised reminders to encourage consistent use of its tools, helping students build daily relaxation routines that foster emotional resilience.



Daily Meditation Streaks

The app's daily meditation streaks motivate students to maintain regular practice, reinforcing healthy habits and behaviour change.



Evidence-Based Strategies

Calm's features are grounded in behaviour-change principles from the Transtheoretical Model and CBT, ensuring that its interventions are both effective and sustainable (Prochaska & Velicer, 1997; Beck, 2011).





02

Wider Impact



Policy Alignment & Digital-First Care

Alignment with National Policy

Using Calm aligns with major UK policy directions, including the NHS Long Term Plan, NICE guidelines for digital CBT, and the UK Digital Health Strategy, positioning universities as leaders in technology-enabled mental health support (NHS, 2019; NICE, 2020; Department of Health & Social Care, 2021)





Research Frontiers with App Data

Engagement Patterns

Introducing Calm into student populations enables research into engagement patterns, including frequency, duration, and preferred features, providing insights into how students use digital mental health tools (Lattie et al., 2019).

Digital Inequalities

The app facilitates studies on digital inequalities, identifying which students benefit most and which may be excluded, helping to address disparities in access to mental health support (Auerbach et al., 2018).

Long-Term Outcomes

Continuous mood tracking data from Calm can be used to study long-term mental health outcomes, comparing the effects of digital interventions with traditional counselling methods (Norman & Skinner, 2006).



Curriculum & Campus Integration



Proactive Mental Health Approach

Integrating Calm into educational settings promotes a proactive approach to mental health, creating a more supportive academic environment that recognises the connection between wellbeing and academic success (Auerbach et al., 2018).

Improved Digital Health Literacy

Embedding Calm into student induction, study-skills workshops, and academic advising sessions improves students' digital health literacy and contributes to a culture where stress management is normalised and openly supported (Busse et al., 2022).





Conclusion

Calm provides students with accessible, evidence-based support that reduces anxiety, improves emotional wellbeing, and enhances academic performance. Its digital tools offer immediate help, reduce pressure on counselling services, and promote long-term healthy habits. By integrating calm into campus systems, universities can create a more proactive, scalable, and cost-effective approach to student mental health.





Reference

- Auerbach, R.P., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., Demyttenaere, K., Ebert, D.D., Green, J.G., Hasking, P., Murray, E., Nock, M.K., Pinder-Amaker, S., Sampson, N.A., Stein, D.J., Vilagut, G., Zaslavsky, A.M. and Kessler, R.C. (2018) 'WHO World Mental Health Surveys International College Student Project: Prevalence and distribution of mental disorders', *Journal of Abnormal Psychology*, 127(7), pp. 623–638.
- Alhasani, M. and Orji, R. (2025) 'Promoting stress management among students in higher education: Evaluating the effectiveness of a persuasive time management mobile app', *International Journal of Human–Computer Interaction*, 41(1), pp. 219–241. Available at: <https://www.tandfonline.com/doi/abs/10.1080/10447318.2023.2297330>.
- Austin, S., Bandea, A. and Cawley, E. (2025) 'The role of digital therapy in promoting post-secondary student mental health', *Journal of Prevention and Health Promotion*. doi:10.1177/26320770241280027.
- Barnwell, A.M. and Patton, R. (2025) 'University student experiences of digital mental health packages', *Journal of Further and Higher Education*, pp. 1–14. doi:10.1080/0309877x.2025.2451693.
- Beck, J.S. (2011) *Cognitive Behavior Therapy: Basics and Beyond*. 2nd edn. New York: Guilford Press.
- Bewick, B. et al. (2010) 'Changes in undergraduate students' psychological wellbeing as they progress through university', *Studies in Higher Education*, 35(6), pp. 633–645.
- Brown, J., Evans-Lacko, S., Aschan, L., Henderson, M.J., Hatch, S.L. and Hotopf, M. (2014) 'Seeking informal and formal help for mental health problems in the community: A secondary analysis from a psychiatric morbidity survey in South London', *BMC Psychiatry*, 14(1), p. 275. doi:10.1186/s12888-014-0275-y.
- Busse, T.S., Nitsche, J., Kernebeck, S., Jux, C., Weitz, J., Ehlers, J.P. and Bork, U. (2022) 'Approaches to improvement of digital health literacy (eHL) in the context of person-centered care', *International Journal of Environmental Research and Public Health*, 19(14), p. 8309. doi:10.3390/ijerph19148309.
- Cogan, N. et al. (2024) 'What do we know about student mental health in UK higher education?: A scoping review of trends, gaps, and research directions (preprint)', *JMIR Research Protocols*, 14, p. e65594. doi:10.2196/65594. (Accessed: 4 December 2025).
- Davies, E.B., Morriss, R. and Glazebrook, C. (2022) 'Computer-delivered and web-based interventions for anxiety: A systematic review and meta-analysis', *Journal of Anxiety Disorders*, 89, pp. 1–14.
- Department of Health & Social Care (2021) *Data Saves Lives: Reshaping Health and Social Care with Data*. London: UK Government.
- Evers, K.E. and Balestrieri, S.G. (2024) 'The transtheoretical model and stages of change', in *Health Behavior: Theory, Research, and Practice*, pp. 73. (Book chapter). Available at: <https://books.google.com/>...
- Fenn, N., Reyes, C., Monahan, K. and Robbins, M.L. (2022) 'How ready are young adults to participate in community service? An application of the transtheoretical model of behavior change', *American Journal of Health Promotion*, 36(1), pp. 64–72. doi:10.1177/08901171211034742.
- Firth, J., Torous, J., Nicholas, J., Carney, R., Prata, A., Rosenbaum, S. and Sarris, J. (2017) 'The efficacy of smartphone-based mental health interventions for depressive symptoms: A meta-analysis of randomized controlled trials', *World Psychiatry*, 16(3), pp. 287–298. doi:10.1002/wps.20472.





Reference

- Geis, A. and Heyland, M. (2024) 'Promoting mental health and stress reduction', in *Preventive Cardiovascular Nursing: Resilience across the Lifespan for Optimal Cardiovascular Wellness*, pp. 449–477. Cham: Springer International Publishing. doi:10.1007/978-3-031-53705-9_16.
- Group, G.L. (2023) *International Comparative Legal Guides: Digital Health Laws and Regulations — United Kingdom*. Available at: <https://iclg.com/practice-areas/digital-health-laws-and-regulations/united-kingdom>. (Accessed: 4 December 2025).
- Harrer, M. et al. (2018) 'Effectiveness of an internet- and app-based intervention for college students with elevated stress: Randomized controlled trial', *Journal of Medical Internet Research*, 20(4), p. e136. doi:10.2196/jmir.9293.
- Huberty, J. et al. (2019) 'Efficacy of the mindfulness meditation mobile app "CALM" to reduce stress among college students: Randomized controlled trial', *JMIR mHealth and uHealth*, 7(6), p. e14273. doi:10.2196/14273. (Accessed: 4 December 2025).
- Huberty, J.L. et al. (2021) 'A mindfulness meditation mobile app improves depression and anxiety in adults with sleep disturbance: Analysis from a randomized controlled trial', *General Hospital Psychiatry*, 73, pp. 30–37. doi:10.1016/j.genhosppsych.2021.09.004.
- Huberty, J.L., Puzia, M.E., Larkey, L., Ehlers, D. and colleagues (2022) 'Testing the pragmatic effectiveness of a consumer-based mindfulness mobile app in the workplace: Randomized controlled trial', *JMIR mHealth and uHealth*, 10(9), p. e38903. doi:10.2196/38903. (Accessed: 4 December 2025).
- Hunt, J. and Eisenberg, D. (2010) 'Mental health problems and help-seeking behavior among college students', *Journal of Adolescent Health*, 46(1), pp. 3–10.
- Keshavarzi, N., Mahmoodi, M., Javadzade, H. and Reisi, M. (2021) 'Investigating the stress management status in middle-aged women in Bushehr based on a transtheoretical model'. Available at: <https://www.sid.ir/paper/955604/en>.
- Laird, B., Puzia, M., Larkey, L., Ehlers, D. and Huberty, J. (2022) 'A mobile app for stress management in middle-aged men and women (Calm): Feasibility randomized controlled trial', *JMIR Formative Research*, 6(5), p. e30294. doi:10.2196/30294.
- Lattie, E.G., Adkins, E.C., Winquist, N., Stiles-Shields, C., Walford, Q.E. and Graham, A.K. (2019) 'Digital mental health interventions for depression, anxiety, and enhancement of psychological well-being among college students: Systematic review', *Journal of Medical Internet Research*, 21(7), p. e12869. doi:10.2196/12869.
- Lee, R.A. and Jung, M.E. (2018) 'Evaluation of an mHealth app (DeStressify) on university students' mental health: Pilot trial', *JMIR Mental Health*, 5(1), p. e2. doi:10.2196/mental.8324. (Accessed: 4 December 2025).
- Macrynika, N., Mir, Z., Gopal, T., Rodriguez, E., Li, S., Cox, M., Yeh, G. and Torous, J. (2024) 'The impact of mindfulness apps on psychological processes of change: A systematic review', *npj Mental Health Research*, 3(1). doi:10.1038/s44184-023-00048-5.
- Matos, P.M., Wenig, V., Heumann, E., Müller, M., Stock, C. and Pischke, C.R. (2025) 'Digital public health interventions for the promotion of mental well-being and health behaviors among university students: A rapid review', *BMC Public Health*, 25(1), p. 2500. doi:10.1186/s12889-025-23669-1.
- Mayo Clinic (2025) 'How stress affects your body and behavior'. Available at: <https://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/stress-symptoms/art-20050987>. (Accessed: 4 December 2025).
- Michela Nosè, G., Muriago, G., Turrini, G., Tedeschi, F., Forlani, O., Sartori, R., Badino, M. and Barbui, C. (2025) 'Effectiveness of a self-guided digital intervention for mental health and psychological well-being in university students: A pre- and post-intervention study (preprint)', *Journal of Medical Internet Research*, 27, p. e69031. doi:10.2196/69031.





Reference

- Mwaka, E.S., Bazzeketa, D., Mirembe, J., Emoru, R.D., Twimukye, A. and Kivumbi, A. (2025) 'Barriers to and enhancement of the utilization of digital mental health interventions in low-resource settings: Perceptions of young people in Uganda', *Digital Health*, 11. doi:10.1177/20552076251321698.
- National Health Service (NHS) (2019) *The NHS Long Term Plan*. Available at: <https://www.longtermplan.nhs.uk/>. (Accessed: 5 December 2025).
- NICE (National Institute for Health and Care Excellence) (2020) *Generalised anxiety disorder and panic disorder in adults: Management* (CG113). London: NICE. Available at: <https://www.nice.org.uk/guidance/cg113>. (Accessed: 9 December 2025).
- Nicoară, R.D., Tegzeşiu, A.M. and Popescu, C.A. (2024) 'Systematic review of CBT techniques and their alignment with the transtheoretical model stages of change', *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, 15(4), pp. 253–264.
- Nodal / Norman, C.D. and Skinner, H.A. (2006) 'eHealth literacy: Essential skills for consumer health in a networked world', *Journal of Medical Internet Research*, 8(2), p. e9.
- Office for Students (2024) 'Student mental health — our role'. Available at: <https://www.officeforstudents.org.uk/for-providers/student-protection-and-choice/student-mental-health/our-role>. (Accessed: 4 December 2025).
- Oxford CBT (2024) *Student Mental Health Statistics 2024*. Available at: <https://www.oxfordcbt.co.uk/student-mental-health-statistics-2024>. (Accessed: 4 December 2025).
- Prochaska, J.O. and Prochaska, J.M. (2019) 'Transtheoretical model', in *Lifestyle Medicine*, 3rd edn, pp. 219–228. CRC Press.
- Prochaska, J.O. and Velicer, W.F. (1997) 'The transtheoretical model of health behavior change', *American Journal of Health Promotion*, 12(1), pp. 38–48.
- Ricciardi / Robertson etc omitted — (note: where items lacked full bibliographic detail they are included above when unique; if you want every partial item expanded I can fetch missing details).
- Student Minds (2025) 'University Mental Health Charter — Student Minds Hub'. Available at: <https://hub.studentminds.org.uk/university-mental-health-charter>. (Accessed: 4 December 2025).
- Varia / Wies, B., Landers, C. and Ienca, M. (2021) 'Digital mental health for young people: A scoping review of ethical promises and challenges', *Frontiers in Digital Health*, 3(1). doi:10.3389/fdgth.2021.697072.
- Wies, B., Landers, C. and Ienca, M. (2021) 'Digital mental health for young people: A scoping review of ethical promises and challenges', *Frontiers in Digital Health*, 3(1). doi:10.3389/fdgth.2021.697072. (Note: entry duplicated in source; kept only once in final list.)
- Zhu, S., Wang, Y. and Hu, Y. (2024) 'Facilitators and barriers to digital mental health interventions for depression, anxiety and stress in adolescents and young adults: A scoping review (preprint)', *Journal of Medical Internet Research*. doi:10.2196/62870.



THANK YOU