Feasibility study of a Compassionate Mindful Resilience (CMR) Intervention to improve mental well-being outcomes among youth in Thailand

Overview of the study

Phase 1: A scoping review was completed in March 2025, utilising five databases (Cochrane, PubMed, Web of Science, APA PsycArticles, and APA PsycINFO) to identify studies on Mindfulness-Based Interventions (MBIs) for improving the mental health and well-being of adolescents with substance use issues. The review will report on how interventions are conducted, and data will be extracted to create baseline knowledge and identify research gaps for the development of an intervention to be proposed.

Phase 2: This phase will entail Patient and Public Involvement (PPI) activities, where young people and key stakeholders will be directly engaged in shaping the intervention. A Study Advisory Committee will be formed, comprising youth representatives, educators, school counsellors, and healthcare professionals, to ensure that diverse perspectives are represented throughout the study. The co-production process will include three stages: (1) stakeholder engagement through discussion groups and needs assessment, (2) collaborative content review and cultural adaptation of the CMR materials, and (3) refinement of implementation procedures for Thai school settings. These activities will be guided by participatory models such as Hart's Ladder of Children's Participation (1992), with an emphasis on partnership and shared decision-making. This collaborative approach aims to ensure that the adapted CMR programme is contextually relevant, youth-centred, and feasible for delivery in Thai secondary schools.

Phase 3: This phase will comprise a single-arm feasibility trial assessing the delivery of a culturally adapted Compassionate Mindful Resilience (CMR) programme within a Thai secondary school context. A total of 46 students aged 16–18 years from Grades 10 to 12 at a large public secondary school will be recruited through a process of universal invitation followed by stratified random sampling. The intervention will consist of four weekly sessions delivered outside normal school hours to reduce disruption and mitigate the risk of stigma. Key feasibility outcomes will include recruitment and consent rates, session attendance, participant retention, and adherence. Acceptability will be explored through post-intervention focus group, with an emphasis on participants' perceptions of the programme's relevance, delivery format, and overall value. The findings will be used to assess the suitability of the intervention for broader implementation and to inform the design of a future controlled trial.

This phase builds directly on the co-production work undertaken in Phase 2 and reflects a continued commitment to participatory and contextually grounded research practices. In addition, a sub-analysis will explore how students apply CMR strategies in their daily lives, including in challenging situations where they may be exposed to substance use within their peer or family environments. This will provide valuable insight into the real-world relevance and potential preventative value of the intervention.

Phase 2: Co-Production Phase with Online Interviews

1. Introduction

1.1 Background Information

During this phase, the Evidence-Based Co-production methodology will be used to engage stakeholders in the adaptation of an intervention to the needs of young people. Focus groups, composed of health care professionals, youth representatives, and academics (e.g., teachers), will work together to adapt existing CMR protocols and develop a plan to improve the mental well-being outcomes in younger populations. The sessions will be 60-90 minutes long and will carefully look at how things will be delivered, how engagement might take place and any feasibility issues that may arise. These discussions will produce qualitative data, which will be analysed thematically with the help of NVivo. This means creating a youth co-produced strategy for CMR intervention that will for further feasibility testing.
This stage utilises a structured, staged co-production framework that is informed by McConnell et al. (2021) and underpinned by Sherry Arnstein's Ladder of Participation and Roger Hart's Ladder of Children's Participation. Engaging youth to inform and create their own solutions together, the research deliberately places youth participation at the "partnership" and "delegated power" levels, ensuring young people have a meaningful role in intervention design.

2. Arnstein's and Hart's Models of Participation: A Review

Sherry Arnstein's Ladder of Participation (1969) encompasses eight rungs of citizen engagement. These rungs range from manipulation (non-participation) to citizen control (full empowerment). In this study, youth participation sits at the partnership and delegated power stages, demonstrating their involvement in decision-making processes. Roger Hart's Ladder of Children's Participation (1992) is an extension of Arnstein's model for youth participation, which includes eight rungs ranging from tokenism to child-initiated, shared decisions with adults. This study shows youth participation in the consulted but informed and the Adult-Initiated Shared Decisions with Youth, and Delegated Power categories of Hart. Thus, the youth have a share in decision-making and co-designing of intervention strategies.

3. Methodology of Phase 2

3.1 Step 1: Engagement is Building Trust and Understanding Needs

Objective: Establish a relationship with key players and assess current attitudes, challenges and preferences about Compassionate Mindful Resilience (CMR) at Thai secondary school level.
Methods:

- We will conduct semi-structured interviews with students, teachers, school counsellors, and health care professionals to gain qualitative insights through online individual interviews (Archibald et al., 2019).
- Online surveys will be used to collect quantitative data on the stress level and perceptions of mindfulness (Evans & Mathur, 2018).

- Through each of the workshops, the sub-committee would re-confirm stakeholder needs and co-design a solution (Gray et al., 2020).

Participation Model Application: At this first stage, engagement is at Hart's 'Consulted but Informed' level. Although youth input is actively sought it is not tokenistic and is assured that the youth input is active.

3.2 Step 2: Collaboration-Co-Creation of MBI Framework

Objective: The second step is initiation of Co-creation of MBI Framework. The aim of this step is to move from consulting to co-design and to involve youth and stakeholders in co-creating key elements of the intervention.
Methods:

- Youth-led design panels will take place as small co-design groups with students, along with teachers and psychologists, who will be involved in refining the MBI content and the best formats for delivery.
- Feedback loops: Continuous feedback, including review and pilot testing of elements of the MBI.
- Workshops will be conducted in which a mutual understanding will be built so that the youth could take a decision on choosing the intervention features (Dodds & Hess, 2021).

Participation Model Application: This activity corresponds to Hart's "Adult-Initiated, Shared Decisions with Youth" level and Arnstein's "Partnership" level and allows youth to meaningfully influence intervention design.

3.3 Step 3: Evaluation-Youth as Co-Researchers

Objective: Involving youth as co-researchers to evaluate the feasibility and effectiveness of the intervention.
Methods:

- Students who are ultimately included in the project will be trained professionally and given orientation in qualitative and quantitative data analysis, including NVivo.
- Youth researchers would conduct focus group discussions to collect feedback from intervention participants on its applicability and effectiveness.
- Workshops will organize youth, teachers, and researchers together for co-interpreting the data or sense-making of data.
- Youth will be encouraged to co-present study findings through academic presentations, blog posts, or written reports to promote dissemination of findings (Turba et al., 2022).
- A Youth Advisory Board will potentially be created to keep youth involved during and after the study (Prior et al, 2022).

Participation Model Application: This last stage reflects a “Delegated Power” from Arnstein’s participation model (Arnstein, 1969) and involves an empowerment model whereby youth can be active agents in decision-making and knowledge dissemination.

3.4 Framework of Phase 2: Co-Production Process

Table 1: Framework of Phase 2

Stage	Objective	Participants & Methods	Participation Model Application	Key Outcomes
Step 1: Engagement – Understanding Needs and Building Trust	Establish rapport with stakeholders and assess attitudes, challenges, and preferences regarding MBIs in Thai secondary schools.	Small-Group Interviews (6-8 participants per group): - Students (Aged 16-18) - Educators & School Counselors - Administrators & Policy Influencers Methods: - Online surveys - Focus group discussions - Virtual stakeholder workshops (Miro, breakout rooms)	Hart’s 'Consulted but Informed' level	Identification of key barriers, facilitators, and preferences related to MBIs.
Step 2: Collaboration – Co-Creation of the MBI Framework	Transition from consultation to active co-design by engaging youth and stakeholders.	Interactive Co-Design Workshops: - Youth-Led Design Panels - Educator & Administrator Integration Workshops Methods: - Iterative feedback cycles - Co-Design Sprint Sessions - Consensus-Building Workshops	Hart’s 'Adult-Initiated, Shared Decisions with Youth' level	Development of an evidence-informed MBI framework.

Stage	Objective	Participants & Methods	Participation Model Application	Key Outcomes
Step 3: Evaluation – Youth as Co-Researchers	Ensure that youth are actively involved in evaluating the feasibility and effectiveness of the intervention.	Youth-Led Evaluation Teams: - Youth analyze data (NVivo) - Peer-Led Feedback Sessions - Collaborative Sense-Making Workshops - Knowledge Dissemination	Arnstein's 'Delegated Power' level	Active participation of youth in data interpretation and dissemination.

4. Overall Expected Outcomes

Strengthened relationships between learners, teachers and the school administrative team, in affiliation with the school. This partnership aims to enhance the power of youth in decision-making and to give students a greater say in interventions and school-based policies around mindfulness and well-being. The intervention will be developed with the aim of meeting the needs of Thai secondary school students. This initiative allows students to analyse qualitative and quantitative data on NVivo and similar programmes to enhance their research skills.
The long-term implementation of the CMR will be overseen by a Youth Advisory Board, ensuring the intervention remains sustainable. Additionally, they ensure knowledge sharing and policy influence by having youth disseminate their findings through presentations, blogs, academic reports, and policy briefs. This participatory approach will feed into wider education and mental health conversations, ensuring that youth engagement does not remain merely tokenistic and advances towards meaningful collaboration in the design and evaluation of the intervention.

Phase 3: A Study Feasibility Testing of a Four-Week Compassionate Mindful Resilience (CMR) Intervention for Youth

The research study involves a Four-Week Compassionate Mindful Resilience (CMR) Intervention for young people. We will conduct a single-arm feasibility study to evaluate the feasibility, acceptability, and preliminary effectiveness of a Four-Week Compassionate Mindful Resilience (CMR) Intervention for secondary school students in Thailand.

1. Introduction

1.1 Background Information

Adolescence is a critical period marked by significant emotional, cognitive, and social changes, making it a vulnerable time for the development of anxiety and emotional dysregulation. Schools play a pivotal role in supporting students' mental health, and mindfulness-based interventions (MBIs) have emerged as a promising approach to address these challenges. Mindfulness-Based Interventions (MBIs) have gained widespread recognition as effective therapeutic approaches for managing mental

health disorders, including anxiety, depression, and substance use behaviours (Kabat-Zinn, 2003). MBIs are based on the Buddhist contemplative tradition but have been adapted for clinical and educational use to promote well-being through focused attention, awareness without judgment, and self-regulation (Baer 2003; Bishop et al., 2004). Studies have shown that MBIs are particularly useful for the youth who experience heightened emotional reactivity, peer pressure, and risk-taking behaviour and substance use (Hwang et al., 2018). Mindfulness training has been shown to significantly enhance cognitive resilience, emotional regulation, and stress management—three protective factors against substance use, as supported by numerous studies (Zoogman et al., 2015; Tang, Hölzel, & Posner, 2015). The Compassionate Mindful Resilience (CMR) Programme integrates mindfulness and compassion-based approaches to improve emotional well-being and resilience of individuals facing mental health challenges. Wilson et al. (2023) have demonstrated that a Four-Week Compassionate Mindful Resilience (CMR) programme resulted in significant improvements in participants' levels of mindfulness, mental well-being, self-compassion, and resilience, alongside reductions in anxiety and depressive symptoms. However, these findings were drawn from studies involving adult general population samples. To date, the CMR programme has not been formally tested with adolescent populations or individuals with substance use difficulties. This study seeks to address this gap by evaluating the feasibility and acceptability of delivering the CMR programme in Thai secondary schools among adolescents.

While mindfulness is deeply embedded within Thai Buddhist cultural traditions, the structured implementation of mindfulness-based interventions (MBIs) in educational settings remains relatively limited. In recent years, several school-based mindfulness programmes have been piloted in Thailand with encouraging outcomes. For instance, MBIs have been associated with enhanced academic performance among secondary school students (Lwin et al., 2025), improved emotional regulation and reduced depressive symptoms in primary school children (Siripattarawit et al., 2019), and improved executive function and behavioural self-regulation among preschoolers at risk (Lertladaluck et al., 2021). In adolescents, traditional mindfulness practices have also been linked to reduced stress and improved emotional control (Jarukasemthawee et al., 2020).

Despite these promising findings, existing studies tend to be limited in scope, duration, and methodological robustness. There remains a critical lack of feasibility studies assessing structured, culturally adapted MBIs tailored specifically for adolescents. The present study aims to contribute to this gap by adapting and evaluating the CMR programme within the Thai secondary school context, guided by evidence from previous research and frameworks for youth engagement.

1.2 Study Rationale

Mental health challenges among adolescents in Thailand have become a significant public health concern, with national surveys indicating rising rates of stress, anxiety, depressive symptoms, and self-harm behaviours (World Health Organization, 2025; Ministry of Public Health et al., 2022). Such difficulties often emerge during adolescence—a period marked by developmental vulnerabilities and increasing peer pressure—which is consistently linked with elevated risk of substance use (Esmaeelzadeh et al., 2018; Centers for Disease Control and Prevention, 2022). These associations are mediated by factors such as low emotional regulation, poor coping strategies, and diminished psychological resilience (Keyes & Platt, 2024).

Substance use among Thai youth has also been identified as a pressing issue. Early initiation of alcohol and drug use is associated not only with academic underachievement and disrupted family relationships but also with longer-term risks of dependency and chronic mental illness (Ministry of Public Health et al., 2022; World Health Organization, 2021). Despite ongoing prevention campaigns, current strategies largely emphasize risk education and deterrence, with limited focus on strengthening protective psychosocial factors like resilience, compassion, and mindfulness.

Compassionate Mindful Resilience (CMR) interventions—combining mindfulness, self-compassion, and resilience training—have shown promise internationally. For instance, school-based mindfulness programmes have improved adolescent well-being, reduced depressive symptoms and stress, and boosted emotional regulation (Kuyken et al., 2013). Similarly, compassion-based programmes such as the Mindful Self-Compassion for Teens (MSC-T) have demonstrated feasibility and protective effects on mental health in at-risk youth (Bluth et al., 2024). Notably, socio-emotional skills-focused interventions, such as mindfulness and compassion, are recognised by the World Health Organization as effective strategies to build resilience and offer healthy alternatives to risk behaviours, including substance use (World Health Organization, 2021).

Despite this growing evidence, there remains a gap: no feasibility studies of CMR have been conducted within Thai school settings, where cultural factors—collectivist values, Buddhist mindfulness traditions, and stigma around mental health—may influence both implementation and impact. To address this critical gap, our feasibility study will evaluate the acceptability, engagement, and potential psychosocial outcomes of CMR among Thai adolescents, laying the groundwork for larger-scale trials and informing culturally adapted mental health interventions in educational settings.

Aims and Objectives

The primary aim of this feasibility study is to evaluate the implementation, acceptability, and preliminary effectiveness of a Four-Week Compassionate Mindful Resilience (CMR) intervention for Thai secondary school students, with a focus on stress management, emotional regulation, overall well-being, and prevention of substance use. Feasibility parameters include recruitment, retention, adherence, and acceptability to determine readiness for a future large-scale trial.

Quantitative outcomes will focus on mindfulness, self-compassion, resilience, well-being, and substance-use indicators; perceived changes in stress management and emotion regulation will be explored qualitatively via post-intervention focus groups and brief exit interviews.

Research Questions

The study will be guided by the following key research questions:

1. Is it feasible to deliver the Four-Week Compassionate Mindful Resilience (CMR) intervention to Thai secondary school students in terms of recruitment, retention, adherence, and acceptability?
2. What are the preliminary indications of effectiveness on well-being and substance-use indicators (quantitative), and how do students describe shifts in emotional regulation skills (qualitative)?

Table 2: Research Questions – Aims – Outcomes/Measures Mapping

Research Question	Corresponding Aim	Outcomes / Measures
1. Is it feasible to deliver the Four-Week Compassionate Mindful Resilience (CMR) intervention to Thai secondary school students in terms of recruitment, retention, adherence, and acceptability?	To evaluate feasibility of the CMR intervention.	Recruitment log, attendance/retention records, adherence monitoring, acceptability questionnaire, focus group feedback.
2. What are the preliminary indications of effectiveness on overall well-being and psychosocial skills (mindfulness, self-compassion, resilience) and on substance-use indicators (quantitative), and how do students describe changes in stress management and emotion regulation (qualitative)?	To explore preliminary outcomes related to stress management, emotional regulation, overall well-being, and prevention of substance use.	Psychosocial questionnaires (mindfulness, self-compassion, resilience, WHO-5); self-reported substance-use indicator items; qualitative themes from focus-group/exit interviews on stress management and emotion regulation.

3. Study Design

This feasibility study follows a single-arm pre–post design to evaluate quantitative changes in mindfulness, self-compassion, resilience, overall well-being, and self-reported substance-use indicators. Perceived shifts in stress management and emotion regulation will be explored qualitatively via focus groups. A control arm was not included, as the primary aim is to evaluate feasibility, acceptability, and engagement, rather than efficacy, and a single-arm design is also more practical and cost effective at this stage. While this limits assessment of randomization acceptability for a future randomised controlled trial (RCT), qualitative feedback will explore participants' willingness to be randomised. Findings will inform the design of a full-scale RCT, where a control arm will be incorporated to rigorously evaluate effectiveness.

The study will be conducted at [redacted] a large public secondary school [redacted], located in the northeastern region of Thailand. [redacted] Average class sizes range from 35 to 45 students. This setting represents a typical large urban secondary school, providing a relevant and logistically feasible context for the delivery and assessment of the adapted CMR intervention.

An overview of the study's procedural elements is provided below, covering facilitator arrangements, withdrawal and participant support, data management, translation and transcription, and cultural and contextual adaptation.

A. **Facilitator and Delivery**: The CMR sessions will be delivered by the PhD candidate, who has completed training in the Compassionate Mindful Resilience (CMR) programme with MindfulnessUK under the guidance of an accredited CMR trainer. The PhD candidate will deliver the programme under academic supervision from Queen's University Belfast and with local support from designated school staff.
    - **Delivery schedule.** Four weekly group sessions, 90 minutes each, delivered on school premises in a quiet designated room after classes,

provisionally between 16:00–17:30 (final start time to be agreed with the school timetable). Total participants contact time: ~6 hours over four weeks.

- **Safeguarding.** A school counsellor will be on call and will intervene only in exceptional safeguarding circumstances that meet the school's predefined thresholds (e.g., imminent risk of harm or child-protection concerns). The counsellor will not attend routine sessions or access research data; any involvement will follow school safeguarding policy and be recorded within school systems, separate from research data.

B. **Withdrawal and Support Procedures**: Participants may withdraw at any point without giving a reason.
   - **Data deletion.** Participants may request deletion of all their data (including coded/pseudonymised data) up to 7 days after the end of all data-collection activities. After this date, removal may not be feasible because data will have been de-identified and/or aggregated for analysis. *(Pseudonymisation = replacing direct identifiers with a study code stored separately under restricted access.)*
   - **Distress pathway.** If a participant becomes distressed, the facilitator will pause or stop the activity according to participant preference. Participants may skip any question, take a break, or leave the study altogether without penalty. Where observed indicators meet the school's safeguarding threshold, the facilitator will escalate to the on-call school counsellor, who will intervene only in exceptional safeguarding circumstances (e.g., imminent risk of harm or child-protection concerns). The counsellor will not attend routine sessions or access research data; any involvement will follow school policy and be recorded within school safeguarding systems, separate from research data. All escalations will be logged; the CI will be notified within 24 hours, and serious adverse events will be reported per governance requirements.

C. **Data Management and Transfer**: Data will be collected and stored securely in Thailand, pseudonymised at source, and managed in compliance with data protection legislation and Queen's University Belfast (QUB) governance. Pseudonymised data may be securely transferred from Thailand to QUB for analysis; identifiable information will remain in Thailand and will not be transferred. For focus groups, audio recordings will be stored in encrypted form in Thailand, transcribed verbatim and accuracy-checked, after which the raw audio will be permanently deleted; only pseudonymised transcripts (not raw audio) will be transferred. Paper questionnaires will be scanned and verified; originals will then be destroyed in Thailand (consent originals retained as required by governance). Encryption, role-based access controls, and least-privilege permissions will be applied end-to-end. Explicit consent for any cross-border transfer will be obtained via the consent forms.

D. **Translation and Transcription**: For qualitative interviews and focus groups, audio recordings in Thai will be transcribed verbatim and translated into English by the PhD candidate, with support from a bilingual Thai academic collaborator. A proportion of transcripts will be cross-checked to ensure accuracy and fidelity.

E. **Cultural and Contextual Adaptation:** In addition to these procedures, feasibility outcomes will capture reflections on cultural, religious, and contextual adaptation

of the CMR intervention. This will ensure that findings directly inform the appropriateness, acceptability, and scalability of the programme in Thai school settings.

3.1 Population

The target population comprises students in Grades 10 to 12 (Mathayom 4–6) at [redacted], a large public secondary school in northeastern Thailand. [redacted] Eligible participants are aged 16–18 years and will be required to provide written consent, alongside informed consent from a parent or legal guardian in accordance with Thai research ethics. All students in the target grades will be invited to express interest, and approximately 46 participants will be selected through stratified random sampling based on age-related representativeness to ensure balanced representation across grade levels and to reduce selection bias.

3.2 Sample Size

This feasibility study will use the Confidence Interval (CI) approach to determine the sample size (Lancaster et al., 2004; Thabane et al., 2010). To estimate feasibility parameters with 95% confidence and a ±15% margin of error, 33 participants are needed. Allowing for a 20% dropout rate and additional caution due to potential stigma-related challenges, the study will recruit 46 participants (Viechtbauer et al., 2015). While this feasibility study is based on individual-level estimates, we recognise that a future effectiveness trial would benefit from a cluster randomised design to prevent contamination. In such a trial, entire schools or classrooms would be allocated to intervention or control arms to maintain group independence and minimise bias.

4. Intervention

The Compassionate Mindful Resilience (CMR) programme (MindfulnessUK) is a four-week, structured, group-based intervention designed to strengthen mindfulness, self-compassion, emotion regulation, and resilience. The programme integrates guided practices and reflective exercises to support stress reduction and resilience building, while promoting substance-use prevention and overall well-being. Each session includes prescribed breathing practices, awareness meditation, cognitive defusion techniques, and discussion of mindfulness-based choice (Kabat-Zinn, 2003). The programme aims to help students cope with stress, increase self-awareness, and build resilience (Goldberg et al., 2021). Student input gathered through facilitated discussions will inform subsequent co-production activities to refine delivery details and ensure alignment with secondary-school needs.

4.1 Weekly Session Plan for the Four-Week CMR Programme

This Four-Week CMR programme aims to teach students stress reduction and emotional regulation techniques (Kabat-Zinn, 2003) while supporting mental well-being through structured group sessions that foster peer support. Four weekly group sessions (90 minutes each) will be delivered on school premises in a quiet designated room after classes, provisionally between 16:00–17:30 (final start time to be agreed with the school timetable). The researcher will accommodate 46 participants, divided into two groups led by the researcher (TS – PhD candidate), who has completed CMR training and is currently undertaking the Train to Teach CMR course with MindfulnessUK. If a student misses a session, they will receive recap materials and

individual guidance through school channels (e.g., teacher liaison or printed handouts) to maintain engagement once the missed session has been completed. Fidelity monitoring will involve session logs, adherence checklists, and student feedback to ensure consistent delivery and alignment with programme goals. A school counsellor will be on call for all sessions to support safeguarding.

Table 3: Intervention details

Week	Module	Overall Details	Home practices
Week 1	Module 1	-Exploring Mindfulness and Awareness, where participants are introduced to the fundamentals of mindfulness and its role in stress reduction and emotional regulation (Kabat-Zinn, 2003). -They will learn to distinguish between "doing mode" and "being mode," fostering greater self-awareness (Brown & Ryan, 2003).	Home practices for this week involve 10-minute daily breathing exercises, journaling stressors, and using body scan meditations before sleep to deepen self-awareness and self-compassion
	Module 2	-Understanding Compassion, participants explore the concept of self-compassion and its impact on emotional resilience (Neff, 2015).	
Week 2	Module 3	- Building Emotional Intelligence, participants develop skills in recognizing and managing emotions. -Introducing Emotional Intelligence explores the importance of emotional intelligence (EI) in well-being and stress management (Goleman, 1995). -Participants learn the RAIN (Recognise, Acknowledge, Investigate, Nurture) and HEARTS models, which help them navigate emotions effectively and enhance self-awareness.	Key mindfulness practices this week include emotional awareness exercises, mindful listening techniques, and journaling about emotional triggers to improve emotional regulation and interpersonal communication.
	Module 4	-Cultivating Emotional Intelligence, where participants strengthen mindful communication and active listening skills (Siegel, 2010). -They learn to differentiate between reacting impulsively and responding mindfully by practicing the STOP method (Stop, Take a breath, Observe, Proceed mindfully) to manage emotional triggers.	
Week 3	Module 5	-Strengthening Resilience shifts the focus toward emotional stability and coping strategies. -Developing Resilience, participants explore how mindfulness and self-compassion contribute to resilience (Lazarus & Folkman, 1984). -They learn to recognise personal stress triggers and regulate emotions through affectionate breathing and self-soothing techniques (Cohen et al., 1983).	Home practices this week involve naming emotions, cognitive reappraisal exercises, and engaging in mindful movement to enhance psychological resilience.

Week	Module	Overall Details	Home practices
		-This module highlights the role of relationships in resilience-building, emphasizing the importance of social connection.	
	Module 6	-Enhancing Resilience introduces personalised meditation phrases as a tool for emotional grounding (Meichenbaum, 2007). -Participants deepen self-awareness and self-care strategies, integrating mindful movement practices to support stress regulation.	
Week 4	Module 7	-Connected, focuses on sustaining mindfulness, compassion, and resilience in daily life. -Feeling Resourced, participants cultivate gratitude and self-appreciation, reinforcing emotional stability (Fredrickson, 2001). -They explore deep breathing techniques to manage stress and learn strategies for overcoming negativity bias through Mountain Meditation and gratitude journaling.	
	Module 8	-Feeling Connected encourages participants to integrate their learnings by developing a personalised mindfulness and resilience plan (Creswell, 2017). -They are introduced to urge surfing techniques for managing impulsive behaviours, mindful decision-making, and social awareness practices such as mindful listening (Brown & Ryan, 2003). - Final activities include guided urge surfing meditations, mindful eating exercises, and reflective journaling to ensure long-term mindfulness integration.	

At the conclusion of the CMR Programme, participants reflect on their progress and create a personal mindfulness plan to sustain their practice. By integrating mindfulness, self-compassion, emotional resilience, and positive psychology strategies, the programme equips individuals with practical skills to navigate stress, regulate emotions, and cultivate self-awareness in their everyday lives.

5. Participants and Selection

Participant recruitment will be conducted through secondary schools in Thailand. The target participants are students in Grades 10 to 12 (Mathayom 4–6) at a Thai secondary school. The selection process has been designed to avoid stigma and selection bias by not limiting participation. Instead, the study will be framed as a general mental well-being initiative open to all students within the eligible age group. The selection process will proceed as follows:

1. **Universal Invitation:**
   All students in the eligible grades will be invited to attend an information

session led by the PhD candidate. This session will provide an overview of the study's purpose, procedures, participants' rights, and the informed consent process.

2. **Expression of Interest:**
   Students who express interest will receive a Participant Information Sheet and consent/assent forms at the information session or via teacher distribution. Students under 18 will be encouraged to discuss participation with a parent or legal guardian; if they wish to proceed, the student/parent will return the signed forms to the teacher within one week. Teachers act only as administrative liaisons, facilitating the distribution and collation of invitation materials; they will not have access to research data or to the final list of enrolled participants. The researcher will then meet students at school to answer questions and confirm consent/assent via school channels; no personal contact details will be collected or retained. Participation is voluntary and non-coercive.
3. **Stratified Random Selection:**
   From the pool of students who return completed consent forms, approximately 46 participants will be randomly selected. Stratification will be applied to ensure balanced representation across each grade level, including 16 students from Grade 10, 15 from Grade 11, and 15 from Grade 12. This approach supports developmental diversity and age-related representativeness.
4. **Notification of Selection:**
   Students selected to participate will be informed individually and invited to attend the first session of the intervention.

Teachers will only distribute and collate expressions of interest and consent forms. They will not administer or collect questionnaires, observe completion, or access the enrolment list. All questionnaires will be administered and collected by the researcher in a designated room without teachers present. Participation records and responses remain confidential and accessible only to the research team.

Enrolled participants will take part in four weekly 90-minute group sessions on school premises after classes (provisionally 16:00–17:30); total contact time ≈ 6 hours over four weeks. The CMR programme develops mindfulness, self-compassion, and emotion-regulation skills to support student well-being and academic engagement.

5.1 Screening Recruitment, and Withdrawal Procedures

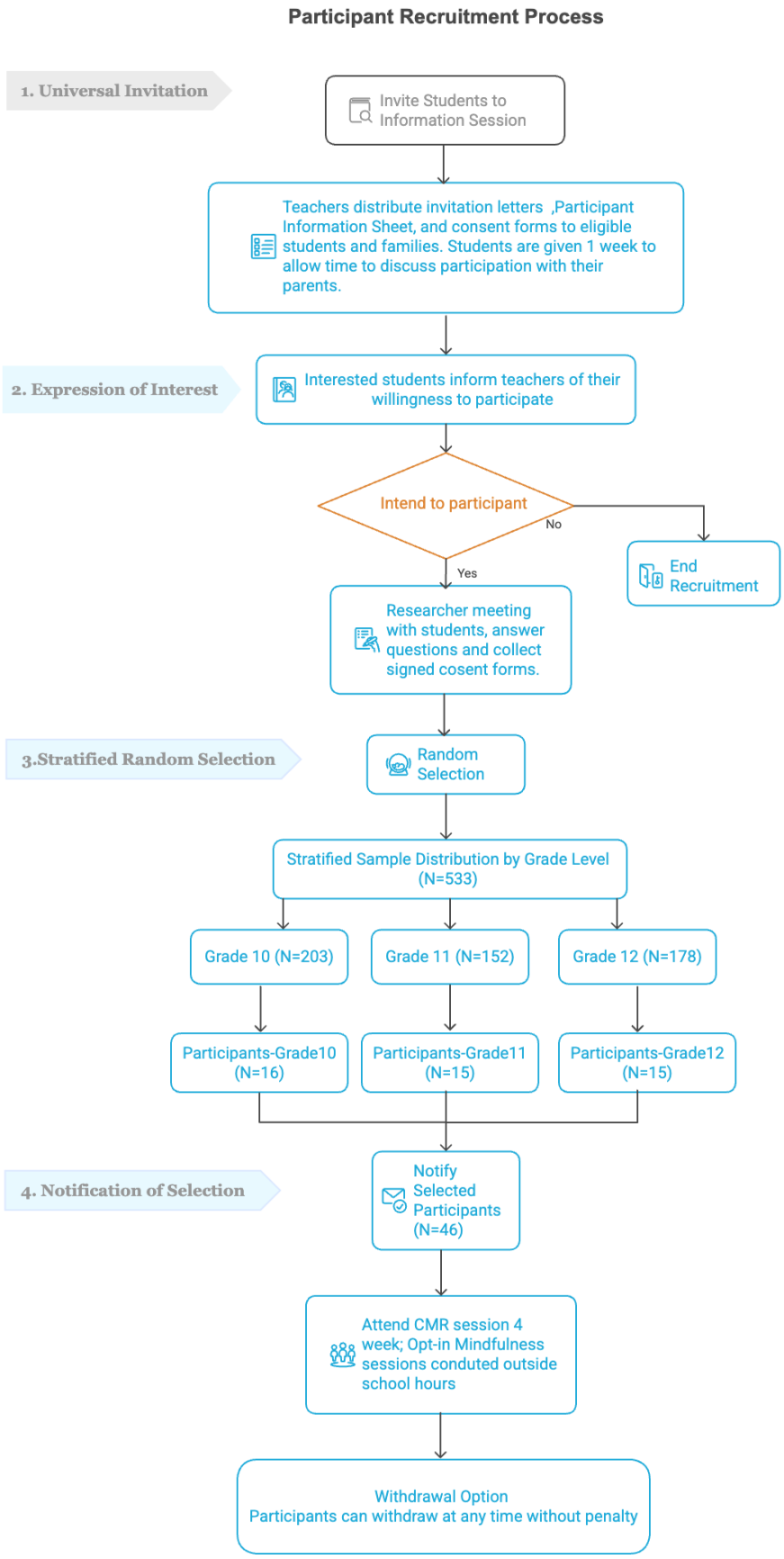
5.1.1 Screening Recruitment

The recruitment plan was developed in consultation with key stakeholders from a Thai secondary school, including school counsellors, teachers, student welfare officers, and health professionals. The selected research site is [redacted] School, a large public secondary school located in [redacted], in the northeastern border region of Thailand. [redacted] It operates under the Ministry of Education and is recognised as one of the leading schools in the province.

Eligible students will be invited to an information session outlining the study's aims, procedures, participants' rights, and the consent process. This session will be delivered by the PhD candidate researcher. Interested students will receive a Participant Information Sheet and consent forms to review with their parent or legal

guardian. Students under 18 must return signed forms within one week to confirm eligibility. Participation is entirely voluntary; only students who provide both informed consent and parental consent will be enrolled. Those who do not consent will not take part in any sessions or data collection (see Figure 1).

Figure 1: Participant Recruitment Process



The intervention will be offered as an opt-in programme, and only students who provide informed consent and parental consent will be enrolled. Students who do not consent will not be required to participate in the sessions or any data collection activities.
Teachers will support recruitment by distributing invitation materials and collecting the names of students who express interest. Families will be informed through the provided documents and encouraged to discuss participation together. Once students express their interest, teachers will notify the researcher, who will then meet the students at the school, answer questions, and collect consent. From the pool of eligible students, 46 participants will be selected using stratified random sampling to ensure balanced representation across Grades 10 to 12.
To minimise disruption to classroom learning, all mindfulness sessions will be scheduled after school hours. While this arrangement may result in some visibility of student participation, efforts will be made to protect privacy and prevent unnecessary attention. Non-participating students will continue with their usual school routine or remain in supervised areas. The session schedule will be clearly outlined in the Participant Information Sheet to support informed decision-making. This approach was co-produced with school counsellors and teachers to promote integration into the school timetable while being mindful of potential concerns around student visibility.

5.1.2 Withdrawal Procedures

Attendance will be recorded for feasibility reporting only and does not constitute a withdrawal criterion. Participation is voluntary; students may withdraw at any time without giving a reason or facing consequences, by notifying the researcher directly or via a teacher/counsellor who will relay the message to the research team. On withdrawal, no further data will be collected. Participants may request deletion of all their data (including coded/pseudonymised data) up to 7 days after the end of all data-collection activities. After this date, deletion will not be feasible because the dataset will have been de-identified and/or aggregated for analysis. Focus groups only: withdrawal is permitted until the group begins; once underway, individual contributions cannot be isolated from the recording. The school counsellor is on call and will intervene only in exceptional safeguarding circumstances in line with school policy, and any such involvement will be recorded within school safeguarding systems, separate from research data.

To provide a non-stigmatising and supportive withdrawal process, the procedure will be overseen by the designated school counsellors and the research team. If a participant chooses to withdraw, this information will not be disclosed to teachers unless there is a specific concern related to the student's well-being that warrants their involvement. In such cases, disclosure will be limited and handled in a manner that prioritises the participant's privacy and emotional safety. This approach aligns with the study's safeguarding protocol to ensure participants' rights and well-being are upheld throughout.

The school counsellor, teacher, and welfare officer will be informed about the intervention and made available to provide support if needed. If a student shows signs of ongoing or severe distress, the school counsellor will be notified to assess the situation and, using their professional judgement, determine whether a referral to

external mental health services is appropriate. A distress protocol will guide the response to ensure the student's well-being and inform appropriate next steps.

To ensure clarity and uphold ethical standards, three distinct procedures have been outlined to address different withdrawal scenarios: (a) attendance and analytic handling, (b) voluntary withdrawal, and (c) withdrawal or session discontinuation due to emotional distress. Each scenario is managed with appropriate support mechanisms to protect the participant's rights, safety, and emotional well-being.

(a) Attendance and Analytic Handling
Participants are encouraged to attend all four sessions, as consistent attendance supports meaningful engagement with the programme. Attendance will be recorded and analysed as part of feasibility outcomes (recruitment, retention, adherence, acceptability). Missing sessions will not trigger withdrawal; participants who miss sessions will remain in the study and will still be invited to complete all follow-up assessments. For exploratory analyses of programme effectiveness, only those who attend at least three sessions will be included, as fewer sessions are unlikely to provide sufficient exposure to the intervention. Support will continue to be offered to all participants, and those experiencing difficulties will be referred to the school counsellor if needed.

(b) Voluntary Withdrawal
Participants may withdraw at any time without giving a reason; this will not affect their relationship with the school or access to support. Upon withdrawal, identifiable data are deleted immediately.

- **Questionnaires/sessions (non-FG):** if a participant requests complete deletion (including pseudonymised data), this may be done up to 7 days after the end of all data-collection activities; after this period, removal may not be possible because data will have been de-identified and aggregated for analysis.
- **Focus groups**: participants may withdraw until the group begins; once a focus group has started, removal of an individual's data is not feasible due to multi-party recording and the need to protect other participants' confidentiality. These rights are explained during consent/assent and are reiterated during the study.

(c) Procedures for Managing Emotional Distress
While it is anticipated that participants may experience emotions such as sadness or contemplation during the programme, a safe and supportive environment will be maintained throughout. Participants have the right to withdraw from the study at any time and for any reason, without consequences for their academic performance or relationships with school staff. In some cases, participants may also be advised to withdraw for their own well-being.
If a student displays signs of moderate to severe emotional stress, such as persistent tearfulness, anger, or notable changes in behaviour, they will be invited to pause their participation and referred to the school counsellor to discuss their continued involvement in the study.
In situations where a participant becomes distressed during a session, the session may be paused, interrupted, or discontinued—either at the participant's request or at the discretion of the facilitator. The facilitator will assess the situation based on the student's emotional state and document the incident appropriately.

If a session is discontinued due to distress, a follow-up check will be conducted within 24–48 hours to monitor the participant's well-being. If distress persists or is considered severe, the case will be referred to the school counsellor for further evaluation and support, including external referral where appropriate, in line with the Distress Protocol.
Where a participant exhibits significantly disruptive behaviour or indicates that continued participation may not be appropriate, the researcher will consult with the school counsellor, principal, and research team. Together, they will determine whether withdrawal from the programme is in the student's best interest, prioritising safety, dignity, and access to support.
In cases of repeated or escalating distress across multiple sessions, the research team will reassess the student's suitability to continue in the programme. This decision will be made collaboratively by the principal investigator, facilitation team, and school counsellor, with a focus on safeguarding the student's well-being. If continued participation is judged inadvisable, the student will be supported to withdraw and referred to appropriate external or school-based services.

5.2 Recruitment and Participant Safeguarding (Identification, Invitation, Consent)

5.2.1.1 Identification of Participants

All participants' information will be treated with strict confidentiality; their identities will be protected, and no identifiable information will be contained within the research data. The school counsellor, teacher, and welfare officer will be formally informed about the intervention and provided with a summary of its content and objectives. Their awareness and preparedness are essential, as they may be required to offer emotional support or initiate safeguarding referrals should any students experience distress or disclose sensitive information during or following participation in the programme.

- Adolescents between 16 and 18 years of age.

  In Thailand, adolescents aged 16–18 are still considered minors under national research ethics guidelines. Therefore, we will obtain both written consent from the student and informed consent from a parent or legal guardian before participation. This dual consent process is particularly important given the sensitive nature of the topic and the school-based setting.
- Willing to engage in a mindfulness-based intervention programme.
- Ability to understand and communicate in Thai.
- Ability to consent to taking part in the study.

Students will be excluded if they have significant mental health conditions (e.g., schizophrenia, bipolar I disorder, or severe major depression with psychotic features) that may impede participation, cognitive impairments that prevent comprehension of the mindfulness intervention, or if they are concurrently involved in another psychological intervention that might confound study results. Furthermore, students who wish to participate may indicate their interest by contacting a designated school representative, ensuring that all self-referrals are managed through these trusted gatekeepers rather than directly by the researcher. The Thai secondary school will assist in identifying adolescents who meet the selection criteria. Through this careful selection and transparent process, we aim to contribute valuable insights to future studies and interventions, improving mental health outcomes within the community.

5.2.1.2 Culturally Sensitive Approach to Invitation

In alignment with the study's focus on promoting mental health and emotional resilience among adolescents, all invitation and consent materials will be designed to ensure cultural relevance and developmental appropriateness. The intervention will be introduced as a school-based, opt-in programme aimed at supporting students' well-being through mindfulness, emotional regulation, and self-compassion. All materials will be carefully worded to avoid language that may be perceived as diagnostic, clinical, or stigmatising.

The invitation process will prioritise inclusivity, psychological safety, and student autonomy. All students in Grades 10 to 12 will be invited to attend an information session outlining the aims and procedures of the study, along with their rights as potential participants. Students who express interest will be encouraged to discuss participation with their parents or legal guardians. The researcher will not access any personal or behavioural records and will only engage with students. Rather, who voluntarily express interest. All invitation and consent materials will be carefully worded using neutral, developmentally appropriate, and non-stigmatising language. This approach aims to protect students' dignity, promote psychological safety, and support informed, voluntary participation. Students who return completed consent and parental consent forms will be considered eligible for enrolment.

This culturally sensitive approach aims to uphold participant dignity, minimise the risk of stigma, and ensure that all participation is fully informed and freely chosen. By framing the CMR programme as a general well-being initiative, the study seeks to foster engagement across a diverse student population in an inclusive and non-discriminatory manner.

6. Feasibility Metrics, Data Collection, Outcome Measures and Follow-Up Assessment

6.1 Measures and Data Collection Procedures

6.1.1.1 Quantitative Data Collection & Feasibility Metrics

Feasibility metrics include recruitment, consent, attendance, retention, adherence, and acceptability (Goldberg et al., 2021). To ensure culturally and contextually appropriate measurement, this study will employ validated Thai-language scales. The selected outcome measures include:

-Srithanya Sati Scale (11 items): A Thai Mindfulness Questionnaire developed by Dr. Orawan and Dr. Chatchawan Silpakit, reflecting mindfulness practices relevant to Thai culture (Silpakit and Silpakit, 2014).

-Self-Compassion Scale for Youth-Thai version (17 items): Adapted from Neff et al. (2021) and translated by Kongsonthana (2022), this scale assesses how young individuals treat themselves with kindness in times of difficulty.

- The Connor-Davidson Resilience Scale (10-Item CD-RISC) was originally developed by Connor, K.M. and Davidson, J.R.T. (2003) and translated by Vongsirimas N. (2017). This scale is widely used to assess resilience in the youth population.

- WHO-5 Well-being Index – Thai version (5 items**):** A brief, positively worded scale assessing subjective psychological well-being over the past two weeks (WHO, 2024). Each item is rated on a 6-point Likert scale, with higher scores indicating greater well-being. The Thai version was officially translated and released by the World Health Organisation and is publicly available for academic, non-commercial use. Its brevity and developmental appropriateness make it suitable for school-based research involving adolescents and sensitive topics such as emotional well-being (WHO, 2024).

Additionally, feedback on the CMR intervention will be collected from all participants through post-intervention questionnaires to gain a more in-depth understanding of their experiences and to complement the qualitative analysis.

6.1.1.2 Qualitative Data Collection & Analysis

A focus group with up to eight students will be conducted using purposive sampling to ensure variation by (i) grade (10–12), (ii) gender, (iii) level of engagement with CMR (e.g., completers and partial attenders), and (iv) self-reported acceptability/perceived usefulness of the sessions.

Recruitment and consent. Recruitment will occur in the final programme week following an information session. Students who express interest will be considered for invitation against the sampling frame above; assent/consent will be obtained from the student and a parent/guardian using approved forms. Participation is voluntary and confidentiality will be maintained.

Selection notice. If expressions of interest exceed available places, invitations will be issued purposively to achieve the sampling balance; within each stratum, selection may be random. Consequently, some volunteers may not be selected. Non-selection has no impact on participation in the programme or access to support.

Exit interviews. To understand barriers to engagement, students with lower attendance (fewer than three of four sessions) may be invited to a brief exit interview under the same consent procedures.

Sessions will be moderated by the PhD researcher. A school counsellor will be on call during all sessions for safeguarding support and escalation. Discussions and interviews will be audio-recorded, transcribed verbatim in Thai, and translated into English by the researcher with support from a bilingual collaborator;10% of transcripts will be spot-checked for fidelity. All qualitative materials will be pseudonymised prior to analysis. The bilingual collaborator will sign a contract to keep the confidentiality and identity of the participants.

The Focus Group Guide (see Appendix 1) is structured around five key areas: (1) overall experience with the CMR sessions, (2) perceived impact on mental health and well-being, (3) changes in stress and emotional regulation, (4) application of CMR skills in everyday life, including coping with situations involving substance use by peers or family members, and (5) suggestions for programme improvement. The guide is informed by qualitative research best practices (Krueger & Casey, 2015) and piloted tools (Guest, Bunce, & Johnson, 2006). Questions are phrased in a developmentally appropriate and non-stigmatising manner.

The focus group will be audio-recorded, transcribed verbatim in Thai, translated into English, and analysed thematically using Braun and Clarke's (2006) six-step approach (reflexive thematic analysis). Coding will be carried out by the researcher and reviewed by a second coder to ensure credibility. Confidentiality will be maintained; all materials will be pseudonymised, and quotations will be de-identified. Ten percent of transcripts

will be spot-checked for fidelity, and NVivo will be used for data management with a maintained audit trail.

6.2 Outcome Measures and Follow-Up Assessment

This study will assess feasibility and mental well-being outcomes using quantitative and qualitative methods. Feasibility will be evaluated through recruitment, retention, session attendance, and participant engagement, analysed using descriptive statistics and session logs (Goldberg et al., 2021).

A remote follow-up assessment at three months post-intervention will evaluate the long-term impact on mental well-being outcomes, and engagement with mindfulness practices. The final timeframe will be determined during the co-production phase to ensure feasibility. The findings will inform the development of future large-scale trials and potential adaptations of interventions. Follow-up will be coordinated via school channels using pseudonymised study codes; no personal contact details will be collected or retained.

7. Data storage

All paper-based data, including questionnaires and other study documents, will be securely scanned in Thailand, pseudonymised at source, and saved in electronic form on secure Queen's University Belfast (QUB) systems (e.g., OneDrive/SharePoint) with password-protected, role-based access restricted to the research team. All handling will comply with applicable data-protection legislation, and QUB Research Governance and Integrity policies. Following verification of the scans, the original paper documents will be securely destroyed in Thailand to minimise risks of loss or theft. Signed consent forms will be retained securely in Thailand in locked storage in line with governance requirements; for administration, only a coded consent log without personal identifiers will be maintained by the research team. Identifiable information will remain in Thailand and will not be transferred. Only pseudonymised electronic data will be transferred from Thailand to QUB for analysis. Transfers will use encrypted storage and encrypted channels; files will then be uploaded to a secure QUB network location where they are stored and backed up, and any temporary copies created for transfer will be securely erased once integrity checks confirm successful upload. Explicit consent for cross-border transfer will be obtained via the study consent forms. No student contact details will be collected or retained; communication with participants will occur via the school's designated channels.

8. Data Analysis Strategy

The data analysis will align with its primary aim of evaluating the feasibility, acceptability, and preliminary effectiveness of a Four-Week Compassionate Mindful Resilience (CMR) Intervention for secondary school students in Thailand.

Feasibility outcomes—including recruitment, consent, attendance, retention, adherence, and acceptability—will be analysed using descriptive statistics. Preliminary effectiveness will be assessed through paired *t*-tests (or non-parametric equivalents where appropriate), quantifying changes in mindfulness, self-compassion, resilience, and WHO-5 well-being, plus self-reported substance-use indicators. Effect sizes (Cohen's *d*) will estimate the magnitude of observed changes for future trials (Cohen, 1988). In addition to summaries including all enrolled participants, an exposure-based subset analysis will be reported for exploratory effectiveness only,

defined as participants who attended three or more of the four sessions; this threshold is analytic only and does not constitute a withdrawal criterion.
Qualitative analysis will explore acceptability, perceived benefits, perceived changes in stress management and emotion regulation, barriers to engagement, and implementation considerations. Post-intervention focus groups with participants (and brief exit interviews for lower-attendance students) and facilitator debriefs will be audio-recorded, transcribed verbatim in Thai, translated into English, and analysed thematically using Braun and Clarke's (2006) six-phase framework (reflexive thematic analysis). Coding will be undertaken by the primary researcher, with a second coder reviewing a subset of transcripts to enhance credibility; 10% of transcripts will be spot-checked for fidelity. NVivo will support data management, and an audit trail will be maintained. Confidentiality will be preserved, all materials will be pseudonymised, and quotations will be de-identified in reporting.
This study adopts a mixed-methods design, incorporating a process evaluation to explore the feasibility and acceptability of the intervention in a real-world school setting. Qualitative data from participants and facilitators will provide insights into implementation processes, contextual factors, and barriers to engagement. This process evaluation will complement quantitative outcomes and ensure a comprehensive understanding of both delivery and experience, thereby informing the design of a future randomised controlled trial.

9. Ethical Considerations
Ethical approval for this study will be obtained from the Faculty of Medicine, Life and Health Sciences Research Ethics Committee at Queen's University Belfast, which oversees research involving human participants. The study will comply with UK research ethics policies and applicable data protection legislation and QUB governance policies.

Given that data collection will take place in Thai secondary schools, the research team will also follow national ethical guidelines applicable to minors in Thailand, including obtaining dual consent (both parental consent and student consent), maintaining confidentiality, and ensuring access to emotional support if needed.

A school counsellor will be on call and will intervene only in exceptional safeguarding circumstances that meet the school's predefined thresholds (e.g., imminent risk or child-protection concerns). The counsellor will not attend routine sessions or access research data; any safeguarding records are held within school systems, separate from research data. If distress arises, the session may be paused and a welfare check within 24–48 hours will be completed in line with the Distress Protocol.

Identifiable information will remain securely stored in Thailand and will not be transferred. Only pseudonymised electronic data may be transferred to Queen's University Belfast using encrypted channels; explicit consent for cross-border transfer is obtained via the consent forms. The study will be conducted in compliance with applicable data-protection legislation and institutional policy.

Participation is voluntary, and students have the right to withdraw at any time. Study data will be pseudonymised and securely stored, and results will be reported in aggregate to prevent identification of individuals.

Participants may request deletion of all their data (including coded/pseudonymised data) up to 7 days after the end of all data-collection activities; the exact calendar deadline will be communicated in the Participant Information Sheet.
Publication and open access. Research outputs will be disseminated via academic publications and made publicly available through Queen's Research Portal (open access): https://pure.qub.ac.uk/

10. Ethical Issues

Conducting research with adolescents aged 16 to 18 in Thailand necessitates careful ethical consideration, particularly in relation to informed consent, stigma, social risks, confidentiality, and emotional well-being. In accordance with national research ethics regulations, adolescents in this age group are considered minors and therefore require a dual consent process. This includes obtaining both written consent from the student and informed consent from a parent or legal guardian prior to participation. These requirements are guided by the ethical standards set forth by the National Research Council of Thailand (NRCT) and are reinforced by school policies that prioritise student welfare.

If distress occurs, the facilitator will pause the activity and contact the school counsellor, who is on call during all sessions. A welfare check will be completed within 24–48 hours in line with the Distress Protocol. To ensure ethical integrity, this study will implement good research practices that uphold the dignity, autonomy, and psychological safety of participants. Additional safeguards specific to school-based research include:

- Ensuring non-coercive recruitment, particularly given the hierarchical dynamics between teachers and students
- Protecting participant confidentiality, especially in group-based sessions or small-class environments
  Providing access to appropriate psychological support, including referrals to school counsellors if any student experiences distress during the study

10.1 Informed Consent and Voluntary Participation

Since the participants are adolescents, obtaining informed consent will ensure their autonomy and maintain ethical research standards. In accordance with Thai national research ethics guidelines, adolescents aged 16 to 18 are considered minors and therefore require a dual consent process. This involves obtaining written informed consent from a parent or legal guardian, as well as written consent from the adolescent participant. This approach aligns with ethical standards for conducting research involving minors in Thailand (FERCIT, 2011; Thammasat University, n.d.).
To minimise coercion, school personnel involved in recruitment will be briefed by the research team to use neutral and non-directive language. Students will be informed both verbally and in writing that participation is entirely voluntary and has no bearing on their academic performance or teacher expectations. The researcher will conduct an independent information session to reinforce the voluntary nature of the study and answer questions without the presence of authority figures applying any pressure. Participants will be assured that there will be no consequences to their academic performance or academic standing if they choose not to participate or to withdraw.

10.2 Minimising Stigma and Preventing Social Risks

One important ethical consideration is the risk of being stigmatised, labelled, or socially excluded if adolescents are perceived as being at risk for potential mental health issues. To mitigate this, several strategies will be implemented. Initially, participants will be contacted in private to avoid unintentional disclosure of their participation. The study will be framed as a health and well-being programme and will avoid focusing on mental health issues to lessen the chances of stigma. In addition, the surveys and discussions from the study will consist of neutral language and supportive language to avoid stigmatising language. The teachers and school staff participating in the study will receive education on confidentiality, stigma-sensitive communication, and ethical treatment of sensitive data.

10.3 Confidentiality and Data Protection

The confidentiality of the respondent is of utmost value in mental well-being research. Therefore, participants should feel safe and comfortable while providing any information. To maintain confidentiality, this research will adopt a host of precautionary measures. Researchers will assign study codes to participants so that personal identifiers are not documented in the research data.

All research datasets will be pseudonymised; identifiable information will be stored securely in Thailand and will not be transferred. Paper questionnaires will be scanned and verified in Thailand and then securely destroyed; signed consent forms will be retained securely in Thailand in locked storage as required by governance. Pseudonymised electronic data will be encrypted and transferred to Queen's University Belfast (QUB) secure systems; temporary transfer copies will be erased once integrity checks are complete. Access to participants' responses will be restricted to the research team and will not be shared with teachers, parents, or peers unless a serious safeguarding concern arises. Published results will be reported in aggregate, and any quotations will be de-identified so that individual participants cannot be identified.

To help those who may suffer any emotional distress, necessary support will be provided. Some participants may feel emotional discomfort following discussions related to their personal experiences and risk factors. Participants may withdraw from the study at any stage without the requirement to provide justification. If they experience discomfort, they may choose to omit specific questions or discontinue their participation without any adverse consequences for their academic standing or well-being. This withdrawal protocol has been formally discussed and approved by the school counsellor to ensure appropriate support structures are in place.
Furthermore, participants experiencing emotional distress—whether related to the intervention or external factors—will be supported through a structured and ethically approved Distress Protocol (see Appendix 2). While researchers may not always be aware of emerging distress, participants will be informed of the availability of school-based mental health services and external support contacts, including national helplines and online resources.
Researchers will monitor for signs of distress, such as tearfulness, withdrawal, or marked emotional changes. If a significant concern arises, the session will be paused, grounding strategies offered, and a referral made to a designated school counsellor, who will assess the need for further support. All procedures follow the referral

pathways and safeguarding measures outlined in the protocol to ensure participant well-being is protected throughout the study (Appendix 2_Distress Protocol.docx).

10.4 Ethical Oversight and Compliance

This study will undergo ethical review and receive approval from the Faculty of Medicine, Life and Health Sciences Research Ethics Committee at Queen's University Belfast (QUB MHLS), in accordance with international ethical standards such as the Declaration of Helsinki, American Psychological Association (APA) Ethical Guidelines, national research ethics regulations. In addition, the study will follow all policies of the school and institution to ensure welfare, privacy of students, and ethical conduct of research. The specific committee that monitors ethics will make sure the study is taking place properly, and any kind of ethics concern will be resolved as they arise.

11. Stakeholder Involvement

The participation of stakeholders is integrated into all stages of Phase 2 to ensure that the intervention is co-produced, contextually appropriate and responsive to the needs of the target population. Students, educators, school counsellors, administrators and policymakers will be actively involved in decision-making and implementation strategies. The co-production process will be guided by Hart's Ladder of Children's Participation (1992), with the aim of positioning young people at levels of "partnership" and "delegated power" to ensure meaningful involvement (Hart, 1992). Their contributions will ensure that the intervention is practical, scalable, and sustainable in a Thai secondary school context.

12. Dissemination and Publication

Findings from each phase of the study will be disseminated through peer-reviewed journals, academic conferences, stakeholder briefings, and will be published in academic journals and deposited in the Queen's University Belfast Research Portal (open access).

The scoping review conducted in Phase 1 will be submitted to a journal on adolescent mental health or substance use prevention. Key findings will be presented at national and international conferences. We will provide a summary report to educators, policymakers, and mental health professionals for future intervention development.

The outcomes of the co-production process in Phase 2 will be documented in a report that outlines the details of stakeholder contributions and adaptations to the intervention. The schools and health agencies will receive the findings and training materials for teachers and counsellors will be developed. At the conclusion of the study, end-of-study dissemination and dialogue workshops will be held with key stakeholders, including school administrators, teachers, school counsellors, representatives from the Ministry of Education, and youth participants. The event will present preliminary findings from the feasibility study and provide a platform to discuss the practical, ethical, and structural conditions for integrating the Four-Week CMR intervention into regular school settings. This session will also serve as an opportunity to gather feedback on adaptation needs and scalability, ensuring that future implementation strategies are aligned with the needs of both policy and practice.

The outcomes garnered throughout Phase 3 of the feasibility study will be submitted for publication in a high-impact journal specialising in mindfulness and adolescent mental well-being. There will be policy briefings that will present findings to the education and health authorities to advocate for the implementation of the Four-Week (CMR) Intervention in existing mental health programmes. To disseminate the findings

to a larger audience, the engagement will include sharing lay summaries and infographics.
To ensure the long-term sustainability of the Four-Week (CMR) Intervention in schools, this research will take a co-production approach whereby the Advisory Group will create resources and institutionalise CMR in the school system. A key component of sustainability will be integrating CMR training into teacher professional development to ensure long-term capacity building. To further evaluate the intervention, we plan to seek funding for a major RCT. The media and communications team at QUB will assist with dissemination strategies by developing a press release to engage audiences and policymakers. The steps will help to get strong evidence that will help in policymaking and to push for the systematic inclusion of CMR in mental health matters concerning youth.

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