MRC Cognition and Brain Sciences Unit

UNIVERSITY OF CAMBRIDGE

DECADES II

Funded by NIHR | National Institute for Health and Care Research

# Investigation of the efficacy of the 'One Step Back' program: A randomized controlled trial of a digitally embedded intervention to enhance psychological decentering and reduce depression severity in at-risk adolescents

Trial Protocol V1.2

July 2026

**Trial management team:** Marc Bennett, PhD DPsychSc (principal investigator), Alicja Podgorski, MSc, Nelly Wright, MSc, Rachel Knight, PhD, Anne-Marie Burn, PhD, Liz Lord, MEd, Holly Howard, BA, Chris MacDonald, PhD, Obi Ukoumunne, PhD Adam Wagner, PhD, Clare White, DClinPsych, Tim Dalgleish, PhD (principal investigator)
**Trial steering group: Prof.** Richard Meiser-Stedman, PhD (chair), Dr. Michael Drum DClinPsych, Dr Zsofia Garai-Takacs PhD

.

Table of Contents

**Primary Aims.** Determine the efficacy of the 'One Step Back Program' (OSB), a digitally embedded psychological decentering training intervention, in reducing depression in a targeted community sample of at-risk adolescents. Other aims are to identify mechanisms of change that drive clinical outcomes and to explore the health-economic impacts of OSB.

## Background

Depression and anxiety often begin during adolescent years, and they are two of the most common mental health problems (1, 2). Helpful psychological treatments exist, but their benefits are limited. One in three patients does not improve during the gold-standard psychological treatment endorsed by clinical guidelines (3). Furthermore, one in three patients who improve may experience symptom recurrence (4). This means that many will struggle with depression and anxiety for long periods of time, a challenge that puts significant pressure on our already stretched health services. A solution is to intervene during the early years and prevent depression and anxiety in the first place. However, there are no prevention programs for adolescent mental health that have been fully supported by clinical research (5).

One essential coping skill for managing depression and anxiety is called psychological decentering. It is the ability to separate oneself from one's thoughts by observing mental struggles from a different perspective (6). We believed we could reduce depression and anxiety by teaching this skill to adolescents from the general public who were at risk of poor mental health. We therefore developed the One Step Back (OSB) program, a five-week digital intervention that uses social media and streaming services to deliver daily psychological exercises (7). This approach means our intervention is highly accessible at a relatively low cost. In preparation for this proposal, we conducted a preliminary randomized controlled trial (a feasibility RCT) to evaluate the OSB program, which we named the Decentering in Adolescents (DECADES I) trial (8). The DECADES I trial investigated whether the OSB program is acceptable to adolescents and whether it alleviates depression, anxiety, and poor psychological well-being (compared to a physical fitness and 'brain-training' program we also created).

The results from this first RCT showed that OSB was accessible and that a larger clinical trial is feasible (8). Critically, our findings also showed that the OSB program led to lower reports of depression and higher reports of well-being (8). Our team now proposes to build on these important results and conduct a larger trial: an 'efficacy trial' to learn whether the OSB program produces similar results under ideal circumstances. This step is necessary to develop a practical intervention program that is effective in the NHS and benefits those in need of mental health support. If the proposed trial supports our earlier findings – that the OSB program reduces depression and improves well-being – then we would have a firm base to continue our ultimate goal of translating the program into day-to-day practice.

### The current trial

The current trial (DECADES II) proposes to investigate the efficacy of OSB via a full-powered randomized control efficacy trial. OSB is a low-cost, low-intensity, online psychological program that can be delivered by non-clinical professionals with support. It works by teaching, in short, daily online sessions, a core skill that is universally applicable to the management and regulation of emotion and psychological distress — Psychological Decentering. Psychological Decentering refers to the ability to psychologically 'step back' and separate oneself from one's mental experiences to consider them from a different, more objective, point of view (9).

Guided by the MRC/NIHR framework for complex intervention development, our objective is to both replicate and extend beyond our initial work phases of construct validity testing, theory testing, and feasibility/piloting to investigate the efficacy of Psychological Decentering training in a fully powered efficacy RCT. This efficacy trial aims to determine whether OSB produces the expected result under ideal circumstances and, if so, to identify potential mechanisms of change and the program's health economic impact.

### Research questions

Our primary research question is therefore as follows: 'Is Psychological Decentering Training efficacious in reducing symptoms of depression and improving well-being in at-risk

adolescents (with elevated symptoms of depression), relative to an active comparison intervention comprising cognitive enrichment?' Secondary research questions include 'through what mechanisms does psychological decentering training reduce depression?' and 'what are the health economic benefits of the OSB program?'

## Methods

### Study design

The study design is a randomized controlled efficacy trial comparing psychological decentering training (OSB) with an active control program (physical and cognitive exercise training) in school-aged adolescents (age 16-19 years). Screening and Trial Recruitment will run from Autumn 2026 to Summer 2028 and will be conducted across several cohorts.

Self-report measures of decentering-related and mental health outcomes will be assessed at four occasions. These are (1) a pre-trial screening timepoint, (2) one week before intervention commencement (baseline), (3) one week after intervention completion (post-intervention), and (4) at a 4-month follow-up.

### Participants

A school-based sample of adolescents will be recruited during an initial screening phase ($n \approx 5{,}000$; aged 16–20 years). Participants will be recruited via an existing pool of UK-wide schools. This pool has been developed across several ethically approved precursor studies conducted by our team, including the 2019 DECADES I trial (University of Cambridge Application No. PRE.2019.109), the 2015 MYRIAD Trial Theme 1 (University of Cambridge Application No. PRE.2015.067), and the 2015 MYRIAD Trial Theme 2 (approved by the University of Oxford Medical Sciences Division Ethics Committee; R45358).

### Sampling and sample size

Our earlier trial found that participants completing the decentering training program, compared with the control intervention, experienced a medium-sized reduction in depression (d=0.57) and a medium improvement in well-being (d=0.67).

Based on guidance from the NIHR Research Design Service, we have taken a conservative approach and powered the proposed efficacy trial to detect effects of half of this magnitude (d=.30). This would require a total of 426 participants, assuming a two-tailed alpha of 0.025 (Bonferroni corrected to account for two coprimary outcomes), and 80% power to detect a within-between-arm interaction on either co-primary at 4 month follow up (4MFU).

Assuming 20% attrition (10% in our feasibility trial), this would require 532 participants to enter the trial. This will require screening of 5000 participants, assuming prevalence rates of depression symptoms of around 10%

### Inclusion/Exclusion criteria

The DECADES II trial is intended to replicate our earlier DECADES I trial, and the same inclusion/exclusion criteria will apply. Regarding inclusion criteria: Participants with elevated depression symotoms will be recruited based on scores from the Patient Health Questionnaire (PHQ), with inclusion defined as a score of 10 or higher. Participants from a previous study conducted by our group who completed these assessments will be invited to take part if they (i) consented to be contacted again and (ii) meet a predefined threshold (e.g., two standard deviations above the norm for that sample).

Regarding exclusion criteria, participants will be ineligible if they: currently participate in regular yoga or a weekly yoga class or workshop; previously (within the past 6 months)) or currently attend talk therapy and/or engage in formal meditation practice or a meditation class or workshop; currently receive CAMHS and/or private mental health care from psychiatrists and/or other allied mental health professionals; are living with chronic physical illness (e.g., epilepsy, chronic pain, cancer); lack fluency in English; have no access to a touchscreen

smartphone compatible with the trial materials; have a formal diagnosis of a neurodevelopmental condition such as autism spectrum disorder or attention deficit/hyperactivity disorder from a professional psychologist and/or psychiatrist.

These criteria will be assessed via an initial telephone screening interview conducted by a trained member of the trial team.

### Ethical oversight and trial management.

A Trial Management Group (TMG), comprising the core research team, will meet 3 times a year to: finalize and manage the protocol; monitor recruitment against targets; review any adverse events; and coordinate the various stages of the project. Independent trial guidance will be provided by a Trial Steering Committee (TSC). The study was approved by The University of Cambridge Psychology Research Ethics Committee (PRE.2026.026), pending insurance cover.

### Intervention

A 5-week psychological decentering training intervention (DECADES intervention) will be compared with a matched 5-week Cognitive Enrichment Training with neutral educational content (CTL Training). Scripts, video files, audio files, and home practice materials for the DECADES intervention are available online at osf.io/f9u45/. These materials are all identical to those used in our previous DECADES I trial.

#### *Psychological decentering training.*

The OSB program is a 5-week, digitally embedded intervention that teaches psychological decentering skills through audiovisual content available via existing online streaming and podcast providers. For this trial, content is provided Monday-Friday on YouTube, with the videos accessed through an in-house website that allows for the collection of trial adherence data. Participants receive an accompanying digital workbook that guides them through the intervention. Each week begins with grounding exercises to promote the naming and monitoring of mental experiences. The program then proceeds with one of four types of

psychological decentering exercises. A new exercise is introduced each week and rehearsed daily for 10-15 minutes. These include

- Week 1 - Stepping Back: content focuses on spatial distancing, in which individuals are taught to reimagine negative memories from a physically distant perspective;
- Week 2 - Speaking Back: content focuses on verbal distancing and cognitive defusion, in which individuals are taught to rephrase negative self-relevant statements to challenge their 'believability' and influence; (
- Week 3 - Slipping back: content focuses on temporal distancing, in which individuals are taught to reconsider specific worries from a temporally distant future;
- Week 4 - Switching back: content focuses on objective distancing, in which individuals are taught to switch perspective and to adopt a third-person view toward negative memories.
- Week 5 - Looking Back: content involves revisiting each exercise. At the end of each video, participants will be invited to provide some brief feedback, including engagement and interest ratings.

*Cognitive Enrichment Training.*

We developed a 5-week active 'Cognitive Enrichment' control program that matches the OSB program in duration and cognitive engagement while remaining psychotherapeutically neutral. Instead of viewing YouTube content on psychological decentering, participants will watch factual educational videos on YouTube, accessed via the same in-house tracking website. Each week (Monday through Friday), the Cognitive Enrichment curriculum is built around one of four neutral forms of educational content; example topics include 'physical geography', 'world politics', 'technology and science', and 'animal kingdom and biology'. To match the OSB week 5 revision block, the CTL group will view 'recap clips' of previously seen content each day. As with the OSB arm, participants will provide brief feedback, including engagement and interest ratings, to ensure the control remains a plausible comparison condition.

### Briefing, consent, and randomization

We will follow a three-phase process: briefing, baseline assessment, and randomization. First, and following an initial screening, eligible participants will receive a detailed briefing outlining the nature of the trial. This structured briefing will be hosted online by a trained member of the research team. Second, once the intervention and associated time commitments have been clearly communicated and participants agree to proceed after considering the practicalities of involvement, written informed Consent will be obtained, and participants will be invited to complete the baseline assessments. After this, the trial statistician will randomize participants to one of two treatment arms.

Eligible, consenting participants will be allocated to CTL and OSB by the trial statistician using a minimization procedure stratified by depression severity: the statistician will be blind to group membership. Three strata will be used to classify depression severity: PHQ-9 scores between 10 and 14 (moderate depression), between 15 and 19 (moderately severe depression), and between 20 and 27 (severe depression).

As is typical of trials of psychological interventions, participants cannot be blinded to intervention allocation. Group allocation will be masked from those involved in core features research elements, such as data collection, analysis, and recruitment.

### Adherence, retention and discontinuation

Both OSB and the CTL program are delivered via unique URLs that direct participants to the specific audiovisual file for the intervention. Upon clicking a URL, participants are automatically redirected to the relevant intervention content for that day. Intervention adherence will be proxied by monitoring various metadata associated with the URL and audiovisual content. This includes (1) whether participants clicked on the link, (2) whether participants played the audiovisual, (3) the amount of audio-visual file played measured in seconds, and (4) whether participants replayed the content. These metrics will be monitored by a member of the trial team (excluding the statistician, to maintain blinding) throughout the 5-week program, and

participants with low engagement rates will be contacted to explore any barriers to participation and, where possible, to provide support. Any additional support provided will be documented and fully reported in a confidential tracker. Poor participation requiring such intervention is provisionally defined as playing 2 (or fewer) of the intervention audiovisual clips across two consecutive weeks.

Participants will be considered withdrawn from the intervention if they: (1) explicitly communicate a desire to discontinue to the research team; or (2) miss two consecutive weeks of the intervention. Following a withdrawal, participants will be asked to complete a Discontinuation Registration Form to capture reasons. In line with our Intent-to-Treat design, these participants will still be invited to complete follow-up assessments unless they explicitly withdraw consent for further contact.

### Trial outcomes

A set of standardized questionnaires will be administered online (via Qualtrics) at either screening, baseline, post-intervention, or six-month follow-up (Table 1). Measures relate to either (a) primary, secondary, and other mental health outcomes or (b) psychological decentering itself and relate to process-based outcomes.

Table 1. Data collection, and primary and secondary outcomes

| | Screening | Pre-intervention baseline | Post-intervention | 4-month FU |
|---|---|---|---|---|
| Depression and well-being | | | | |
| *PH-Q* | ✔ | ✔ | ✔ | ✔* |
| *WEMWBS* | ✔ | ✔ | ✔ | ✔* |
| **Additional menal health** | | | | |
| *SDQ* | | ✔ | ✔ | |
| *GAD7* | | ✔ | ✔ | |
| *PANAS* | | ✔ | ✔ | |
| Process-level outcomes | | | | |
| *EQ* | | ✔ | ✔ | ✔ |
| *DERS* | | ✔ | ✔ | |
| *RFQ* | | ✔ | ✔ | |
| *BAFTS* | | ✔ | ✔ | |
| Health-economic outcomes | | | | |
| *EQ-5D-5L* | | ✔ | ✔ | ✔ |
| *Resource use* | | ✔ | ✔ | |

* Primary outcome: PH-Q and WEMWEB scores at 4-month Follow Up (4MFU). PH-Q = Patient Health Questionnaire. CES-D = Center for Epidemiological Studies – Depression Scale. WEMWBS = Warwick-Edinburgh Mental Wellbeing Scale. SDQ = Strengths and Difficulties Questionnaire. GAD-7 = Generalized Anxiety Disorder Scale. PANAS = Positive and Negative Affect Scale. EQ = Experiences Questionnaire. DERS = Difficulties in Emotional Regulation Scale. RFQ = Reflective Functioning Questionnaire. BAFTS = Brief Anxious Thoughts and Feelings Scale.

### Co-primary mental health outcomes

**PHQ.** The Patient Health Questionnaire (PHQ-9) is a 9-item self-report questionnaire measuring the frequency of depressive symptoms over the past two weeks (10). This is the trial's co-primary outcome measure. Internal consistency has been reported as high (**α** = .86–.89), with good test–retest reliability and strong criterion and convergent validity with clinician-rated measures of depression. We will use an 8-item version, removing item #9 on suicidal ideation and self-harm. PHQ scores at the 4-month follow-up represent the co-primary outcome. PHQ-9 scores at post-treatment will be a secondary outcome.

**WEMWBS.** The Warwick–Edinburgh Mental Wellbeing Scale. The WEMWBS is a 14-item self-report questionnaire that measures positive mental well-being, including positive affect, psychological functioning, and interpersonal relationships (11). Internal consistency is high (**α** =

.89), with good test–retest reliability and evidence of strong construct and convergent validity (Tennant et al., 2007). This is our trial's co-primary outcome measure. In our previous decentering RCT, internal consistency was also high (**α** = 0.87). WEMWBS scores at the 4-month follow-up represent the primary outcome. WEMWBS scores at post-treatment will be a secondary outcome.

### Secondary mental health outcomes

**SDQ.** The Strengths and Difficulties Questionnaire (SDQ). The SDQ is a 25-item behavioral screening questionnaire assessing emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, and prosocial behavior in children and adolescents (12). Internal consistency for the total difficulties score is acceptable (**α** ≈ .73), with good test–retest reliability and evidence of convergent and predictive validity. In our previous trial, internal consistency was also good (**α** = 0.75).

**GAD-7.** The Generalized Anxiety Disorder-7 (GAD-7) is a brief 7-item self-report questionnaire designed to assess the severity of generalized anxiety symptoms over the past two weeks, including worry, feelings of nervousness, and fear. Items are rated on a 4-point Likert scale, with higher scores indicating greater symptom severity (13). The GAD-7 demonstrates good internal consistency (**α** ≈ = .89–.92) and test–retest reliability. It shows strong convergent and criterion validity, correlating highly with other measures of anxiety and functioning.

**PANAS.** The Positive and Negative Affect Schedule (PANAS) is a self-report questionnaire consisting of two 10-item scales measuring positive and negative affect (14). Internal consistency ranges from **α** = .87–.90 for Positive Affect and **α** = .84–.87 for Negative Affect. Test–retest correlations range from .47 to .68 for Positive Affect and from .39 to .71 for Negative Affect.

### Process-based measures of psychological decentering and affect

**EQ.** The Experiences Questionnaire (EQ) is a 20-item self-report questionnaire assessing participants' capacity for decentering (15). Psychometric properties are satisfactory, with high internal consistency (Cronbach's **α** = .89), good convergent validity ($r > .46$), and adequate

divergent validity (r < –.35) (Soler et al., 2014). In our previous trial, internal consistency was also high (**α** = 0.88).

**DERS.** The Difficulties in Emotion Regulation Scale (DERS) is a 36-item questionnaire that measures multiple facets of emotion regulation and dysregulation, including emotional awareness, emotional acceptance, impulse control, and access to regulatory strategies (16). Internal consistency is strong (**α** = .94), with good convergent validity (Hallion et al., 2018).

**RFQ.** The Reflective Functioning Questionnaire (RFQ) (17). The RFQ is an 8-item self-report measure assessing mentalizing capacity, specifically certainty and uncertainty about mental states. Internal consistency is acceptable to good (**α** = .70–.77), with evidence of good construct and convergent validity in both clinical and non-clinical samples.

**BAFT.** The Believability of Anxious Feelings and Thoughts Scale is a 16-item self-report questionnaire that assesses the extent to which individuals believe and fuse with anxious thoughts and feelings (18). Internal consistency is high (**α** = .90), with strong test–retest reliability (r = .77) and evidence of good construct validity.

### Measures to estimate the economic costs and benefits of OSB

**EQ-5D-5L**. The EQ-5D-5L is a self-report measure of health-related quality of life(19). It is split into two parts: a descriptive system and a visual analog scale. The descriptive system assesses five dimensions of health (mobility, self-care, usual activities, pain/discomfort, and anxiety/depression), each rated across five severity levels. The visual analog scale captures participants' self-rated health on a 0-100 scale. The EQ-5D-5L demonstrates good reliability and construct validity, with improved sensitivity and reduced ceiling effects compared with the three-level version, and is widely used in health economic evaluations.

**Resource use questionnaire**. As part of our previous research on the effectiveness of school-based mindfulness training (the MYRIAD trial), a resource-use questionnaire was developed to estimate changes in use of public-sector health and mental health services. This questionnaire captures young people's access to various (mental) health supports across primary,

secondary, and tertiary care services in the UK. This questionnaire requires participants to indicate resource use over periods that vary by administration time point: 4 months at pre-intervention, 5 weeks at post-intervention, and 4 months at 4-month FU.

### Lived experience and patient participant involvement (PPI)

Qualitative data via semi-structured interviews will be collected post-intervention from trial completers in the DECADES II trial, as well as from those who dropped out or disengaged and from individuals who declined to take part. The interview data will assess the lived experience of those involved and inform our presentation of the intervention. These data will also help elucidate barriers and drivers to uptake and implementation, informing later-stage pragmatic trial and implementation questions. Topic guides will be developed in collaboration with a PPI advisory panel and with input from the core research team. We anticipate selecting a purposive sample of ~20 individuals to maximize variation across characteristics that may affect outcome experiences.

### Participant flow and data collection

The flow of participants is illustrated in Fig. 1. The DECADES II trial will be advertised to Head Teachers, Mental Health Leads, and Special Educational Needs Coordinators at schools across the UK. School contacts will be invited to share study information with their pupils and parents/guardians. Interested pupils will then be able to volunteer for an initial screening. During this stage, pupils will complete the PHQ-9 and WEMWBS via a Qualtrics™ link shared by the school contact. Online consent/assent will be obtained via Qualtrics™ before any screening data are collected.

Pupils interested in the full DECADES II trial will then be screened for eligibility. Those who meet the symptom threshold on the PHQ-9 will be invited to an online screening interview with a member of the research team, during which eligibility will be assessed against the inclusion and exclusion criteria. Eligible participants and their parents/guardians will then receive a written description of the research study. They will be invited to an online appointment with a member

of the research team. During this video call, additional verbal information about the nature of the research will be provided, and the research team will answer any questions from participants and their parents/guardians. Participants and parents/guardians, where required, will then be asked to complete the full trial consent process, either electronically or by post.

Following consent, baseline questionnaire data will be collected online using Qualtrics™. Participants will receive a URL and will be invited to complete the questionnaires within the specified assessment window and before the first intervention session begins. Once baseline data have been collected, the trial statistician will randomize participants into one of two treatment arms. Similar online questionnaire links will be sent after the completion of the final intervention session and are to be completed within one week. A further follow-up questionnaire link will be sent six months after the final intervention session.

### Role of funding source

This trial is funded by an NIHR Research for Patient Benefit Award and the UK Medical Council (Grant Reference: MC_UU_00030/5). Funders have no role in the study design, collection, management, analysis, interpretation of data, or manuscript preparation and publication.

## Data Management and Analysis

### Software and missing data

Data processing and analysis will be managed using standard software packages, including RStudio, MATLAB, and SPSS. Data analysis scripts will be made available with the final published manuscript.

The clinical outcome analysis will follow the intention-to-treat principle, with the planned quantitative analysis managed by the trial statistician, who will remain blind to intervention allocation. Systematic patterns of missing outcome data will be examined. We will examine whether missingness in the primary outcome at post-intervention is associated with trial-arm allocation, age, sex, and baseline depression severity. Little's Missing Completely at Random

(MCAR) test will also be used to examine whether the pattern of missing data is consistent with data being missing completely at random. This model will include PHQ-9 scores at baseline and post-intervention, treatment arm (OSB vs CTL), age, and sex.

### Statistical analysis plan

Missing data will be handled using multiple imputation, with 50 imputed datasets generated using fully conditional specification (FCS). For each outcome analysis, the imputation models will include trial-arm, baseline outcome and post-intervention outcome scores, and any relevant variables found to be associated with missingness.

The co-primary outcomes for analysis are the 4-month follow-up PHQ and WEMWB scores. Secondary outcomes include PHQ and WEMWB scores at post-intervention along with the additional mental health inventories of depression, anxiety, and mental well-being (CES-D, SDQ, GAD-7, and PANAS) and the process-level inventories of psychological decentering and reflective functioning (EQ, DERS, RFQ, and BAFTS) as measured at post-intervention and 4MFU. Each outcome variable will be examined using a separate Analysis of Covariance (ANCOVA). Each model will assess the between-group effect of trial arm (OSB vs CTL) on the outcome variable at post-intervention, adjusting for the corresponding baseline score and the stratification variable for baseline depression severity. Baseline values are defined as data collected after full consent and before randomization to a treatment arm, rather than during the initial screening phase.

An additional set of analyses will examine the longer-term effects of treatment allocation on the primary and secondary outcomes. Separate ANCOVA models will assess between-group effects on the outcome variables at 4MFU, adjusting for the corresponding baseline score and the depression stratification variable. As an additional sensitivity analysis, primary and secondary outcomes will be analyzed using complete cases only.

Each ANCOVA model will be calculated separately on each of the 50 imputed datasets. Afterward, parameter estimates and standard errors will be pooled using Rubin's method.

### Correction for multiple analyses

The co-primary analysis will assess the effect of trial arm on PHQ-9 and WEMWBS scores at 4MFU. Because there are two co-primary outcomes, a Bonferroni correction will be applied, and statistical significance will be evaluated using a two-sided alpha of $p < .025$.

The secondary analyses will be conducted in two sets: mental health outcomes and process-based outcomes. These analyses are exploratory, and given the number of co-varying measures, applying a corrected alpha threshold would inflate the risk of Type II error. Therefore, a two-sided alpha of $p < .05$ will apply for each model calculated within these sets.

**Health economic analysis.** A health economic evaluation will compare costs and outcomes across trial arms. This analysis will compare health economic outcomes between groups, adjusting for baseline scores as covariates where indicated. Statistical significance and group differences will be evaluated using appropriate methods, including t-tests and Analysis of Variance (ANOVA). The specific test will vary depending on the nature and distribution of the data. The evaluation will focus on health-related quality of life (using the EQ-5D-5L) and healthcare service use (via the resource-use questionnaire) to determine the overall value of the intervention for health services.

**Qualitative Data Analysis.** We will conduct structured interviews after the intervention to understand the barriers, benefits, and experiences of various stakeholders. To ensure a comprehensive evaluation of the intervention implementation and impact, we will interview a purposive sample of participants, including young people who complete the trial, and those who withdrew or disengaged. Data will be transcribed verbatim and analyzed using thematic analysis (facilitated by NVivo software) to identify key drivers of uptake and engagement.

### Harms, adverse events, and risk management

Participant outcomes will be monitored for possible signs of deterioration in depression and broader psychological distress. Depression severity will be monitored using the PHQ-9. In

particular, the research team will record whether participants' PHQ-9 scores increase into the severe clinical range, defined as scores of 20–27, at either the post-intervention or 4-month follow-up assessment. Where relevant, this will include monitoring whether participants move from the moderate range at baseline, defined as PHQ-9 scores of 10–14, into the severe range at later assessments.

Broader psychological distress and low well-being will also be monitored using the WEMWBS. The research team will record whether participants' WEMWBS scores move into the range associated with very low mental well-being, defined as scores below 36. Particular attention will be given to participants whose baseline WEMWBS scores fall within the range typically associated with mild mental health difficulties, approximately 42–47.

Participant-reported negative experiences will be monitored during mid-intervention check-ins and post-intervention debrief appointments. Participants will be asked: "Since the last assessment, has taking part in the study or intervention caused any distress, upset, or negative effects for you?" Where participants answer yes, they will be asked: "Please briefly describe what happened." These questions will be included during the 3-week check-in and post-intervention debrief.

During the initial briefing, participants will be informed that they may contact the research team at during typical office hours (Monday-Friday, 9.00-17.0hr) to discuss their experiences of taking part in the trial, including any concerns about changes in symptom severity, adverse outcomes, or harmful experiences. Participants will be provided with a central trial email address, which will be monitored by members of the research team.

Where a participant's depression severity or psychological distress exceeds the thresholds described above, or where a participant discloses a negative or harmful experience during check-in or debrief, they will be offered a virtual check-in appointment with one of three clinical psychologists on the research team. These team members are appropriately qualified to

provide an initial brief assessment, offer support, and, where appropriate, guide onward referral to relevant support services.

All reported harms, adverse events, and clinically relevant deteriorations in outcome scores will be recorded by the research team. Qualitative information will include the nature of the harm or negative experience reported, its timing, perceived relationship to the study or intervention, and any actions taken by the research team.

## Dissemination

The findings of this study will be disseminated through typical academic channels, including poster/paper presentations at (intern)-national conferences and at academic institutions, as well as publication in peer-reviewed journals. Given that some research questions are less exploratory than others, two key manuscripts are planned for the trial data. The first will describe the impact of training on self-rated decentering and mental health outcomes. The second will describe the exploratory research around the impact on cognitive performance measures. Findings will also be disseminated to the broader public through seminars and workshops with relevant stakeholders, as well as online blogs and podcasts. These manuscripts will be completed and submitted for review irrespective of the nature of the observed effects. Following the publication of the first manuscript, a fully anonymized dataset will be made available online via open-access databases hosted in the UK or Europe. Data processing scripts and programming codes will also be made available online.

## References

1. Kessler RC, Amminger GP, Aguilar-Gaxiola S, Alonso J, Lee S, Ustun TB. Age of onset of mental disorders: a review of recent literature. Current opinion in psychiatry. 2007;20(4):359.

2. Kessler RC, Chiu WT, Demler O, Walters EE. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. Archives of general psychiatry. 2005;62(6):617-27.

3. Craske MG. The future of CBT and evidence-based psychotherapies is promising. World psychiatry. 2022;21(3):417.

4. Lorimer B, Kellett S, Nye A, Delgadillo J. Predictors of relapse and recurrence following cognitive behavioural therapy for anxiety-related disorders: a systematic review. Cognitive Behaviour Therapy. 2021;50(1):1-18.

5. O'Connor M, O'Reilly G, Murphy E, Connaughton L, Hoctor E, McHugh L. Universal process-based CBT for positive mental health in early adolescence: A cluster randomized controlled trial. Behaviour Research and Therapy. 2022;154:104120.

6. Bernstein A, Hadash Y, Lichtash Y, Tanay G, Shepherd K, Fresco DM. Decentering and related constructs: A critical review and metacognitive processes model. Perspectives on Psychological Science. 2015;10(5):599-617.

7. Bennett M, Knight R, Dunning D, Archer-Boyd A, Blakemore S-J, Dalmaijer E, et al. Protocol for a randomized controlled trial investigating an intervention to boost decentering in response to distressing mental experiences during adolescence: The Decentering in Adolescence Study (DECADES). OSF. 2021(https://doi.org/10.17605/OSF.IO/F9U45).

8. Knight R, Clegg H, Dalmaijer ES, Dunning D, Franckel G, Lenaert B, et al. A digitally embedded intervention to enhance psychological decentering and reduce depression severity in at-risk adolescents: a randomised controlled trial of the 'One Step Back'programme. eClinicalMedicine. 2026;96.

9. Bennett MP, Knight R, Patel S, So T, Dunning D, Barnhofer T, et al. Decentering as a core component in the psychological treatment and prevention of youth anxiety and depression: a narrative review and insight report. Translational psychiatry. 2021;11(1):1-14.

10. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. Journal of general internal medicine. 2001;16(9):606-13.

11. Tennant R, Hiller L, Fishwick R, Platt S, Joseph S, Weich S, et al. The Warwick-Edinburgh mental well-being scale (WEMWBS): development and UK validation. Health and Quality of life Outcomes. 2007;5:1-13.

12. Goodman R. Psychometric properties of the strengths and difficulties questionnaire. Journal of the American Academy of Child & Adolescent Psychiatry. 2001;40(11):1337-45.

13. Spitzer RL, Kroenke K, Williams JB, Löwe B. A brief measure for assessing generalized anxiety disorder: the GAD-7. Archives of internal medicine. 2006;166(10):1092-7.

14. Watson D, Clark LA, Tellegen A. Development and validation of brief measures of positive and negative affect: the PANAS scales. Journal of personality and social psychology. 1988;54(6):1063.

15. Fresco DM, Moore MT, van Dulmen MH, Segal ZV, Ma SH, Teasdale JD, et al. Initial psychometric properties of the experiences questionnaire: validation of a self-report measure of decentering. Behavior therapy. 2007;38(3):234-46.

16. Gratz KL, Roemer L. Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. Journal of psychopathology and behavioral assessment. 2004;26(1):41-54.

17. Fonagy P, Luyten P, Moulton-Perkins A, Lee Y-W, Warren F, Howard S, et al. Development and validation of a self-report measure of mentalizing: The reflective functioning questionnaire. PloS one. 2016;11(7):e0158678.

18. Herzberg KN, Sheppard SC, Forsyth JP, Credé M, Earleywine M, Eifert GH. The Believability of Anxious Feelings and Thoughts Questionnaire (BAFT): a psychometric evaluation of cognitive fusion in a nonclinical and highly anxious community sample. Psychological Assessment. 2012;24(4):877.

19. Balestroni G, Bertolotti G. EuroQol-5D (EQ-5D): an instrument for measuring quality of life. Monaldi Archives for Chest Disease. 2012;78(3).