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Abstracts

Systematic Review of the Literature

Rumination and worry are both forms of repetitive negative thinking (RNT), defined as repeatedly dwelling on negative feelings, situations, and events. RNT is considered a transdiagnostic factor associated with the onset, maintenance and severity of mental health difficulties, primarily anxiety and depression. Recent treatments have been developed to targeted RNT. Online interventions may increase access to such treatments. This systematic review aimed to assess the effectiveness of online interventions to decrease RNT.

Five database (PsychInfo, Medline, EMBASE, Scopus, CINAHL) were systematically searched. Quality appraisals were completed using the QualSyst Tool for quantitative studies.

Twenty-four studies were included in the review. Interventions included online cognitive behaviour therapy and related therapies, psychodynamic approaches, mindfulness, spiritual interventions and cognitive trainings. All reported a significant decrease in their targeted RNT, all with large effect sizes (except mindfulness-related interventions). It appears that interventions where participants were taught to change patterns of thinking/beliefs, or disengage from emotional responses by redirecting their focus of attention, or trained to change cognitive responses, reduce RNT. Study qualities and limitations are discussed.

PROSPERO ID: CRD42023392389

Keywords: Repetitive Negative Thinking; Worry; Rumination; Perseverative Negative Thinking; internet-based; online intervention

Service Improvement Project

Objective

Trauma-informed care (TIC) has gained popularity as a way for services to be aware and respond to the potential impact of trauma. However, understanding of TIC and how to implement it is often unclear, with limited evidence. A TIC training provider sought advice on how to improve their training.

Method

The current study used a qualitative approach to explore (1) participants' understanding of TIC after being trained, (2) their experience of facilitators and barriers to implementing TIC and (3) recommendations to improve training. Semi-structured interviews were completed with 9 professionals across British health, social and education services.

Results

Results revealed a TIC understanding similar to existing guidelines, with minor disagreement over responsibility and trauma understanding. Many facilitators and barriers for TIC implementation built on participants' understanding of TIC and could be addressed through training. Recommendations for TIC training improvement are provided in terms of who and how to train. Links to existing literature, strengths and limitations of the study are noted.

Conclusion

The study provides a theory-driven contribution to the evidence-base on TIC understanding, facilitators and training improvements. Although qualitative results have limited generalizability, training recommendations may be useful for other services.

Keywords: Trauma-informed care; Trauma-informed practice; Trauma; staff training; behaviour change model

Theoretically Driven Research Project

There is growing evidence that rumination contributes to the onset, maintenance, and severity of PTSD, and is conceptualised as a strategy intended to control symptoms/threat within the leading model of PTSD. However, interventions which aim to target rumination in PTSD have yet to be researched.

The study aimed to evaluate the feasibility and acceptability of a novel rumination reduction intervention for individuals with PTSD, and the feasibility of conducting a single case experimental design (SCED) as a consecutive series. The secondary aim was to provide a preliminary estimate of effectiveness of such an intervention in reducing PTSD symptoms.

Sixteen participants on a waiting list for PTSD treatment were randomly allocated to three or five weeks of baseline measures. Participants then completed an online module on coping with rumination, followed by a personalised review call, and two weeks of post-intervention measures.

Quantitative results and descriptive feedback found the intervention acceptable and feasible. However, a SCED design was not deemed feasible in this real-life context, and appeared not as acceptable to participants due to questionnaire burden. Preliminary analyses revealed a decrease in trauma-specific rumination and PTSD symptoms. The study offers an initial indication that a trauma-focused approach to rumination may be helpful. Next steps include refining the intervention based on participant feedback and re-evaluating it.

Key Words: Posttraumatic Stress Disorder; PTSD; Rumination; Repetitive Negative Thinking; Case Series

Systematic Review of the Literature

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Declarations of Interest: none

Target Journal: Behaviour Research and Therapy

Journal rational: This journal was chosen because it allows the topic to reach a broad audience and research context. What sets this review apart from other reviews is that it is not limited to one type of therapeutic intervention or psychopathology but reviews specific and transdiagnostic factors that contribute to and maintain psychopathology. There therefore fits well with the journal's encouragement of "theoretical reviews of mechanisms that contribute to psychopathology and that offer new treatment targets". (See submission guidelines in Appendix E).

Abstract

Rumination and worry are both forms of repetitive negative thinking (RNT), defined as repeatedly dwelling on negative feelings, situations, and events. RNT is considered a transdiagnostic factor associated with the onset, maintenance and severity of mental health difficulties, primarily anxiety and depression. Recent treatments have been developed to targeted RNT. Online interventions may increase access to such treatments. This systematic review aimed to assess the effectiveness of online interventions to decrease RNT.

Five database (PsychInfo, Medline, EMBASE, Scopus, CINAHL) were systematically searched. Quality appraisals were completed using the QualSyst Tool for quantitative studies.

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Online Interventions to Decrease Repetitive Negative Thinking: A Systematic Review

Rumination and worry are both forms of repetitive negative thinking (RNT), defined as repeatedly dwelling on negative feelings, situations, and events (Ehring & Watkins, 2008). Rumination refers to repetitive, self-focused, negative thinking about past experiences (Nolen-Hoeksema, 1991; Papageorgiou & Wells, 2003). This definition is closely related to the concept of worry which is repetitive thinking about possible or imagine future negative events (Borkovec et al., 1998). While rumination is past-oriented and worry is future-oriented or hypothetical, both can be classified under the same umbrella concept of RNT (Ehring & Watkins, 2008; McEvoy et al., 2010a; Smith & Alloy, 2009; Watkins, 2008; Watkins & Moulds, 2005, 2007). This is supported by the findings that rumination and worry are highly correlated with each other (R. Beck & Perkins, 2001; Fresco et al., 2002; Segerstrom et al., 2000).

Both rumination and worry have been implicated in the onset, maintenance, and severity of depression and anxiety disorders and have shown to increase the likelihood of relapse following psychological treatment (Ehring & Watkins, 2008; Segerstrom et al., 2000; Watkins & Roberts, 2020). They are also associated with poorer physical health, stress and sleep difficulties (Kertz & Woodruff-Borden, 2011) and can be experienced as highly distressing.

Despite their great similarity and overlap, rumination and worry have often been treated separately, within the contexts of depression and anxiety disorders, respectively. Only recently, researchers have aimed to understand and treat them as part of the same transdiagnostic concept of RNT. Interventions targeting worry, rumination and/or RNT offer an opportunity to break out of unhelpful maintenance cycles, and decrease distressing transdiagnostic, diagnostic or subclinical concerns (Sauer-Zavala et al., 2017). Researchers have recognised the importance of targeting RNT and have developed interventions such as

Rumination-focused Cognitive Behavioural Therapy (RF-CBT) that successfully decrease low mood and anxiety (Feldhaus et al., 2020; Umegaki et al., 2021; Watkins et al., 2011). A review concluded that CBT can successfully decrease RNT in depression (Spinhoven et al., 2018). Ten years ago, a systematic review evaluated treatments to specifically reduce worry and rumination, independent of disorder, and found that mindfulness-based and cognitive behavioural interventions may be effective in reducing both worry and rumination (Querstret & Cropley, 2013). This review does not yet consider or include RNT as a transdiagnostic factor and includes primarily face-to-face interventions. Since then, the field of RNT has grown, with new treatments being developed, evaluated and implemented. However, even with effective treatments, there are significant barriers to accessing treatment for anxiety and depression in general, and RNT specifically (Collins et al., 2004). One possible solution to overcome this barrier to access is through online interventions.

Online Interventions

For the purpose of the current review, 'online interventions' refer to interventions that are primarily online/internet-based, completed independently and remotely by a participant. This means that participants do not need to attend a clinic, treatment or research location but can complete the intervention from home or wherever convenient for them, with the aim of decreasing mobility, cost and location barriers. 'Online interventions' may be supported by therapists/clinicians/supporters, as long as the primary content of the intervention takes places online (e.g. learning of skills through online modules). Support may be asynchronous (e.g. written feedback on online modules/homework tasks) or synchronous (e.g. check in calls). However, the primary content of the intervention is delivered asynchronously online, meaning that participants can complete the intervention any time. This is in line with the aim of increasing access by allowing adjustment to different time schedules and preferences (e.g. shift work, childcare, education, preferred learning style and time of day). For clarity and

comparability, the definition of ‘online’ in the current review does not include primary use of video/telephone therapies, virtual reality, computer games, online accessed pen and paper interventions (e.g. downloadable workbooks), or passive websites (e.g. reading of content).

This definition is in line with the wider literature on how and why online interventions may increase access to psychological interventions. For individuals seeking support, online interventions offer increased accessibility to treatment (G. Andersson & Titov, 2014) by decreasing geographical barriers, time constraints and travel costs (G. Andersson, 2016), by speeding up access to care (Cuijpers et al., 2009a) and by being less affected by mobility constraints. Asynchronous communication between participant and supporter (i.e. therapist) increases access for individuals reliant on shift work or child care. Increased anonymity can help overcome barriers of stigma and lower the threshold to seeking help (G. Andersson, 2016; Rosmarin, 2010). Online interventions can further be adjusted to individual needs and learning styles through individuals choosing the time and frequency of attendance, speed, and often format of learning (e.g. audio vs text). Anderson and Titov argue that “since patients can return to the program at their convenience to access treatment information, this may facilitate learning and retention” (2014). From a healthcare service point of view, online interventions allow highly standardised treatment, minimal therapist drift, and cost-effectiveness (G. Andersson & Titov, 2014; Gega et al., 2022).

A recent systematic review on remote delivery of psychotherapy for depression and anxiety concluded that the format was appropriate and effective (Lamb et al., 2019). Evidence further showed that internet-based interventions for common mental health disorders had similar outcomes as face-to-face psychotherapy (G. Andersson et al., 2014; G. Andersson & Titov, 2014; Cuijpers et al., 2009a). There have been multiple reviews and meta-analyses that support the effectiveness of internet-delivered treatments for specific disorders, such as for generalised anxiety disorder (GAD; Eilert et al., 2021; Saramago et al.,

2021; Trenoska Basile et al., 2022), mood and/or anxiety disorders (Andrews et al., 2010; Arnberg et al., 2014; Cuijpers et al., 2009b; Proudfoot, 2004), and even an umbrella review of meta analyses for anxiety and mood disorders (G. Andersson, Carlbring, et al., 2019). Across reviews, authors conclude that online interventions for these disorders are effective, feasible, acceptable and cost-effective. However, authors have criticised that the majority of internet-interventions target specific disorders even though there is high co-morbidity between disorders and transdiagnostic symptoms (G. Andersson & Titov, 2014). Other reviews are restricted to specific therapeutic interventions, such as online CBT for anxiety and depression (Păsărelu et al., 2017; Przeworski & Newman, 2006; Reger & Gahm, 2009; Spek et al., 2007), online acceptance and commitment therapy for anxiety (ACT; Kelson et al., 2019), or internet-based psychodynamic interventions (Lindegaard et al., 2020). No review to date, has looked at online interventions for specific and transdiagnostic RNT incorporating all types of therapeutic approaches. The current study therefore aimed to understand what types of targeted online interventions for RNT exist and how effective they are in decreasing forms of RNT. To this end, this review aims to answer the following questions:

1. Which online interventions for Repetitive Negative Thinking have been evaluated?
2. How effective are these online interventions at decreasing Repetitive Negative Thinking?
3. What is the quality of studies that use online interventions to decrease Repetitive Negative Thinking?

Method

The current quantitative systematic review uses synthesis without meta-analysis methodology. Information is reported in line with Cochrane guidance (Garritty et al., 2021). The protocol was pre-registered with PROSPERO (CRD42023392389) and followed the

Preferred Reporting Items for Systematic Reviews and Meta-analyses guidelines (PRISMA; Moher et al., 2015).

Search and Screening

Five online databases (PsychInfo, Medline, EMBASE, Scopus, CINAHL) were searched using key terms listed in Appendix A. MESH headings were included where possible. All retrieved datasets were downloaded into a Zotero reference manager and exported to excel for first author screening by title and abstract, then by full text. Another author (SHY) screened 20% of studies at initial screening and 20% of studies at full text screening. An interrater reliability analysis using the Kappa statistic was performed to determine consistency between two raters (Landis & Koch, 1977). Additional hand searching was completed by scanning the reference lists of the included articles for additional records and citation tracking using Scopus. Studies were screened for eligibility according to the inclusion/exclusion criteria noted in Table 1.

Table 1
Inclusion and Exclusion Criteria

Inclusion criteria	Exclusion Criteria
Published in English, as a peer-reviewed journal article	• Book, conference paper, report, unpublished paper or theses, dissertations
Intervention/therapy/treatment with the primary aim of decreasing repetitive negative thinking/rumination/worry/non-specific perseverative thinking • The primary aim must be noted as aim explicitly, or as primary outcome measure if the aim is a broader term (e.g. stress/anxiety which is then defined as RNT/worry/rumination). • Psychological, social or spiritual interventions are all accepted • Preventative interventions are accepted if they have the aim to decrease RNT	**If primary aim is clearly stated as not RNT** (e.g. primary aim to decrease insomnia, suicidal ideations) • If primary aim/focus is on process / format of study e.g. “feasibility” “app usage”, “adherence” or “engagement”. "treatment compliance" as decreasing RNT is then not the primary aim • If focus/measure is a different concept, RNT (e.g. self-criticism, negative thinking that is not repetitive/ruminative, “post-event processing”, “beliefs about rumination”, meta-worry, “fear of recurrence of cancer” , “rumination syndrome”) • If paper doesn’t mention any RNT in abstract or title. If it says the measure anxiety and depression but don’t specify that this is defined as RNT (as this would be excluded at abstract/title screening) • If aim is broader topic e.g. decrease “mental ill health” or “stress” and RNT *included* in this definition. RNT needs to be main focus. (e.g. Coping, defined as "improved diversion coping (i.e., healthy redirection of worrying thoughts about their cancer") • If measure RNT as “mediator” or “moderator” as primary aim of the study
Intervention for targeted/specific RNT population • Inclusion criteria that are specific / targeted for high RNT e.g. diagnosis of depression or anxiety disorders or high RNT (high worriers, high ruminators)	• Generic populations with no specific inclusion criteria
The intervention must be primarily online/internet-based/web-based • Online interventions must be completed at home / remote (not in person in a lab / study setting). This is in line with the argument of increasing access to interventions. • Therapist/clinician/coach support is accepted as long as the primary content of the intervention takes place online.	• If intervention is primarily by therapist/clinician/coach with the online part as support • If intervention is not primarily online e.g. if sent exercises via email or post; if it’s primarily pen & paper, workbooks that don’t require internet • “Blended therapy” is unclear. Need to see full text and ensure it is primarily

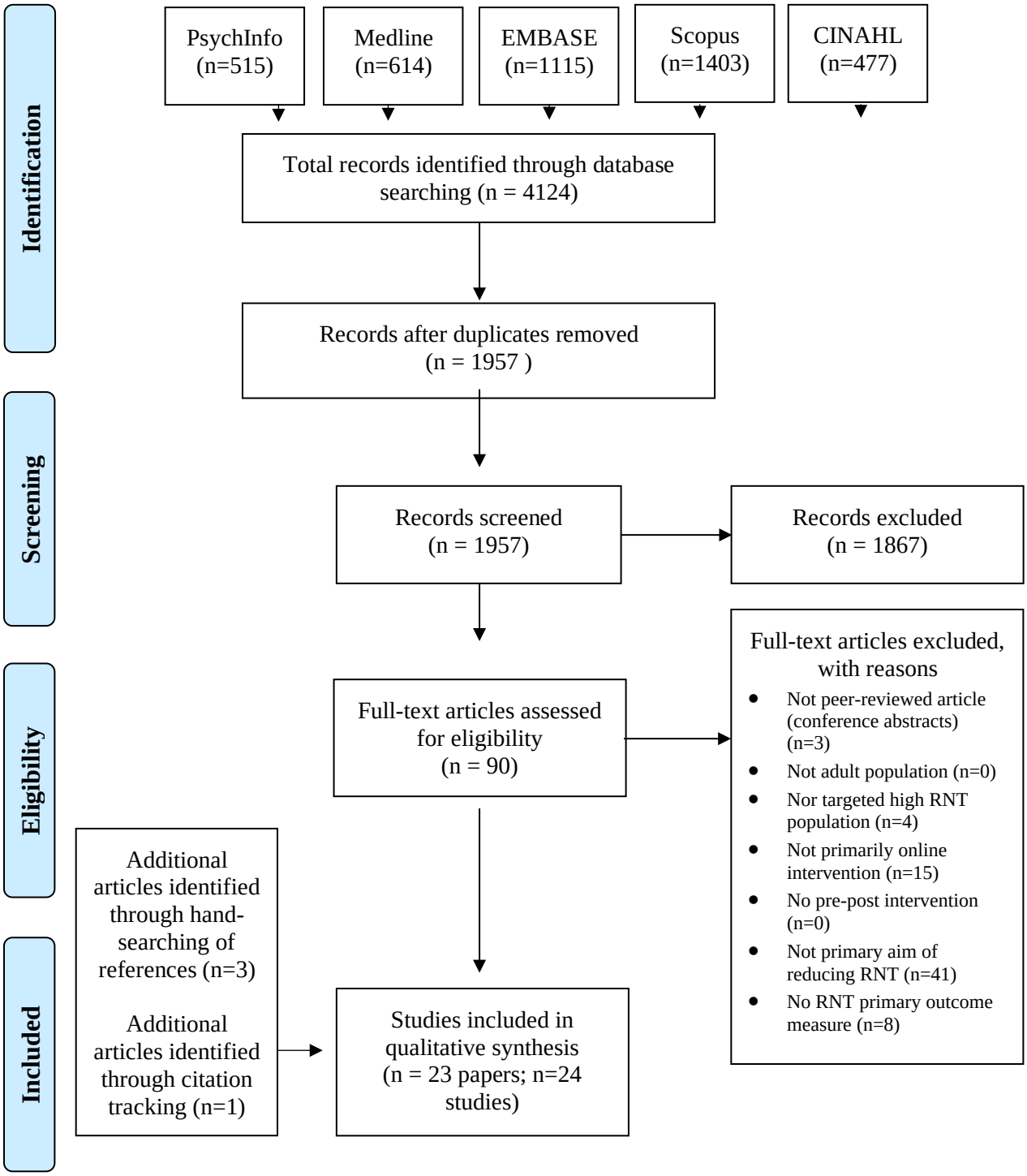
• Accepted if only one active arm (e.g. RCT) is online.	online. Exclude if half or more of the sessions are not online. • If only the control intervention is online • If the primary remote format is video/telephone intervention not online • If it's not an intervention e.g. passive website without intervention • Virtual reality (VR) or video games
Must be an experimental design / have an experimental aim • Must be an intervention aimed to decrease RNT • Randomised controlled trials, pre-post single arm designs, case studies/case series are acceptable	• Intervention to explore relationship between RNT and other factors • If non-experimental e.g. descriptions of an intervention, manual, protocols
Must have primary quantitative measure of RNT, **rumination, worry, or perseverative thinking pre/post intervention and/or compared to a control group** • Non-validated measures are accepted • Ok to include specific RNT measures e.g. depressive rumination, health worries, Covid worries, cancer worries, work-related rumination, labour worry (since most measures are specific)	• If RNT measure is secondary outcome measure • If RNT is a part, subscale or item within a larger measure (e.g. GAD-7; wellbeing, measure on 'stress and worry'; 'a composite measure of anxious and depressive symptoms') • If the main outcome is qualitative.
Adults 18+	• Children (0-18)

Note: RNT=Repetitive Negative Thinking

Study Selection

The initial search identified 4124 records, 1957 of which were retained after duplicates were removed. Of these, 1867 studies were excluded at the abstract stage. The interrater reliability for title and abstract screening found substantial agreement, Kappa=.70 ($p < .0.001$). Thirty-three studies were excluded at the full text screen, with a 91.7% inter-rater reliability (kappa = .83). Disagreements were resolved through further screening at the full text stage and discussion with the authors. Ninety full-text articles were screened. The interrater reliability found excellent agreement, Kappa = 0.88 ($p < .0.001$). Four additional records were identified through hand searching of references and citation tracking (Scopus search conducted March 17th, 2023). A total of 23 articles, containing 24 studies, were included in the review and data were extracted from each study. See Figure 1 for PRISMA flow chart.

Figure 1
PRISMA Study Selection Flowchart



Data Extraction and Synthesis

In line with the review questions, and to provide context to the studies, the following data was extracted from all studies: Author, year of publication, sample type, sample size,

country, gender, mean age, study design, intervention (an comparison group where relevant), primary aim, online methods (with/without support), length of intervention, measure of RNT, measure of effect, and study outcome. Data was synthesised and organised according to intervention/therapy types, as an overview of existing online interventions was of primary interest. A narrative account of the findings was the most appropriate strategy because of the heterogeneity of the outcome measures and study designs. All studies were included for synthesis, irrespective of quality.

Quality Assessment

The quality of the included studies was evaluated using the QualSyst tool for quantitative studies (L. Kmet et al., 2004). This tool employs a range of criteria for assessment, including whether the study has a clear objectives, description of methods, comparisons and recruitment, robust outcome measures, appropriate design and sample size, and controls for potential confounds. Ratings are provided on a 3-point scale (2=yes, 1=partial, 0=no) or not applicable (N/A). Each study receives a summary score, which is the sum of points awarded to the study divided by the number possible to achieve (i.e. without non-applicable items). Summary scores can range from 0.0 to 1. All studies were assessed (HL) and 15% independently second-rated (SHY) showed poor inter-rater reliability (k=-.20, p=.386), following which, disagreements were resolved with all authors and another 15% second-rated which revealed excellent reliability (k=1.00, p=.08).

Results

See Table 2 for an overview of all study results and Appendix B for more detailed descriptions of interventions and outcomes.

Table 2

Summary of Included Studies

Study	**Sample type** (measure)	**Sample size** at baseline	**Country**	**female %** (male %; other)	**Mean age** (SD)	**Primary aim**	**Design**	**Intervention** (comparison groups)	**Online method** (with/without support)	**Intervention length**	**Measure of RNT** (validated?)	**Measure of effect**	**Outcome**	**QR**
(Amir & Taylor, 2012)	GAD diagnosis (DSM-VI SCID)	N=21	USA	66.67 (33.33)	40.9 (13.5)	Feasibility and efficacy of a self-administered computerized treatment program for GAD	Single arm pre-post	**Attention Modification Program (AMP) and computer-delivered cognitive and behavioral treatment (cCBT)**	Computer-delivered incl. Instructions, videos. (Standardized weekly contact for technical difficulties; no discussion of content. By: Research Assistant)	12 modules in 6 weeks	PSWQ (✓)	PSWQ within pre-post PSWQ (ITT) Cohen's *d*=0.82 (large)	Significant decrease in worry from pre-to post intervention.	0.90
(Anderss on E. et al., 2017)	High worriers (>56 PSWQ)	N=140	Swe den	84.28 (15; 0.71 transg ender)	32.5 (7)	IbET group would have greater reductions in worry compared with the WL	RCT (WLC)	**Internet-based extinction therapy (IbET).** (WLC).	Web-platform incl. written material, worksheets. (Written support/reminders. By: Clinical Psychology students)	8 modules in 10 weeks	PSWQ (✓)	PSWQ between-group effect size at posttreatment Cohen's *d*=1.39, 95% CI [1.01, 1.77] (large) Within-group effect not reported.	Significant decrease in worry inIbET compared to WLC. Results sustained at 4 and 12 month FU.	1.00
(Anderss on E. et al., 2021)	Excessive worry (>56 PSWQ)	N=311	Swe den	79.74 (20.26)	IbET 44 (16), active control 43(14), WLC 46(13).	IbET to be more effective than both active comparator and a WLC in reducing worry	RCT (superiority trial, active comparator; WLC)	**Internet-based extinction therapy (IbET).** (Active control: internet-based stress management through relaxation techniques (CTRL); WLC)	Web-platform incl. written material, worksheets. (Written support. By: Clinical Psychology students)	8 modules in 10 weeks	PSWQ (✓)	PSWQ: IbET v. waiting-list post treatment Cohen's *d* = 1.34, 95% CI 1.00–1.66 (ITT) (large). IbET was superior to CTRL *d*= 0.38 (95% CI 0.09–0.67). (medium)	Both IbET and CTRL were significantly more effective in reducing worry compared with WLC. IbET was superior to CTRL in reducing worry. Both the IbET	1.00

												Within-group effect not reported.	and the CTRL groups improved significantly from post-treatment to 4 and 12-month FU.	
(Anderss on et al., 2012)	GAD diagnosis (DSM-IV SCID-I)	N=81	Swe den	76.45 (23.46)	ICBT 44.4 (12.8); IPDT 36.4 (9.7); waitlist control 39.6 (13.7).	Effects of a guided IPDT and CBT for GAD. IPDT would show a significant reduction of worry compared to WLC; similar outcomes for IPDT and CBT on worry	RCT (superi ority trial: 2 active treatm ents; WLC)	**Internet-based psychodynamic psychotherapy (IPDT)** (Comparison group: internet-based cognitive behavioural therapy (ICBT) for GAD incl. applied relaxation; WLC)	Online platform. **IPDT:** Written text, discussions, no homework. (Weekly feedback, encouragement. By: Clinical Psychology students & one licensed psychologist. All with psychodynamic orientation). **ICBT:** Modules, audio, included homework. (Weekly feedback to homework and questions. By: licensed psychologists, 3 psychology students. All with CBT orientation.)	8 modules in 8 weeks	PSWQ (✓)	PSWQ: IPDT within group pre-post Cohen's *d*=1.16 (CI: 0.56-1.73) (large); ICBT within group effect size pre-post 0.87 (CI:0.25-1.46) (large).	Both IPDT and ICBT showed moderate pre-post effect sizes of worry.	0.95

(Dahlin et al., 2016)	GAD diagnosis (diagnostic interview by a psychologist, DSM-IV)	N=14	Sweden	78.6 (21.4)	32 (10.0)	Describe the appearance and functionality of a new acceptance-based internet-based treatment program for GAD and to conduct a pilot study.	Single arm pre-post	**Internet-based acceptance and commitment therapy (ACT)**	Online platform incl. modules matched with workbook exercises, animations, text with voice-over, audio, video (Weekly report of progress/problems, feedback, help, plus 1-2 15min telephone calls, plus 1 live session at the end of treatment. By: Psychologists)	7 episodes in 8-10 weeks	PSWQ (✓)	PSWQ within group pre-post Cohen's *d*=2.14 (large)	Significant decrease in worry from pre to post intervention	0.95
(Dahlin et al., 2016)	High worriers (PSWQ ≥ 45 points); GAD diagnosis (DSM-IV)	N=103	Sweden	83.5 (16.5)	39.48 (10.73)	Evaluate if therapist-guided internet-delivered acceptance-based behaviour therapy would reduce symptoms associated with GAD.	RCT (WLC)	**Therapist-guided internet-delivered acceptance-based behaviour therapy (ABBT).** (Waitlist control group)	Online platform incl. text, audio, animation and video, plus workbook and CD for practice. (Weekly support: validation, problem-solving, clarification, reinforcing progress. By: Clinical Psychology graduate students)	7 modules in 9 weeks	PSWQ (✓)	PSWQ within group effect Cohen's *d*=1.35 (1.03, 1.75) (large); and follow up d=1.71 (1.2, 2.25) (large).	Significant decrease in worry from pre to post and follow-up, and compared to WLC.	1.00
(Dahlin et al., 2020)	High worriers (PSWQ ≥ 45 points); GAD diagnosis (SCID-I)	N=33	Sweden	87.5 (12.5)	37.9 (10.9)	Evaluate if intervention can be delivered with automated and minimal clinical support.	Single arm pre-post (pilot)	**Self-help program targeting excessive worry.** Components of **ACT**, **behaviour therapy** not cognitive therapy.	Website incl. animations, films, exercises, writing assignments (Support on demand, automatic messages. By: Psychology student)	7 modules in 9 weeks	PSWQ (✓)	PSWQ significant within-group effect Cohen's *d*=1.17 (large)	Significant decrease in worry from pre to post inter-vention.	0.90

(Dahlin et al., 2022)	High worriers (≥ 45 PSWQ). GAD diagnosis (MINI)	N=85	Sweden	82.4 (17.6)	41.46 (14.81)	Worry-specific versus self-tailored internet-based treatments for GAD with scheduled support or support on demand	Pilot randomised factorial design trial (comparing 4 treatment groups; not non-interiority design)	**Worry specific: ACT; Self-tailored:** 14 modules **mixed ACT and CBT**. Each with scheduled support or support on demand.	Online platform incl. audio, video, written content. (Weekly scheduled or on demand. By: Clinical Psychology students)	7 modules in 8 weeks	PSWQ (✓)	PSWQ: Pre-post within group effect for who all received the worry-specific program *d*=1.28 (CI 95% = 1.08–1.49) (large); *d*=1.00 (CI 95% = 0.52–1.00) in the self-tailored treatment group (large).	Significant decrease in worry from pre-post intervention.	0.95
(Draper et al., 2008)	GAD diagnosis (DSM-IV criteria)	N=3	Australia	33.34 (66.66)	29.33	Examine the effectiveness of a self-management intervention for GAD delivered over the internet	Multiple case series design	**CBT for GAD** plus techniques that target **intolerance of uncertainty, metacognitive beliefs, and acceptance and mindfulness**.	Website with modules. (Occasional reminders, no counselling/ explanation of treatment. By: not specified)	11 modules in 11 weeks	PSWQ (✓)	N/A (case series)	Trend for each participant's worry to reduce. Found reliable change from pre-post. Maintained at 5m FU for 2/3 participants	0.95
(Heckendorf et al., 2019)	Elevated RNT, (>33 PTQ)	N=360	Germany	58.8 (41.2)	42.2 (10.9)	Gratitude will reduce RNT	RCT (WLC)	**Gratitude training.** Based upon **positive psychological, resource-oriented and cognitive-behavioural principles.** (Waitlist control group).	Smartphone app and online-based gratitude exercises. (Reminders, feedback on demand, support with technical difficulties. By: e-Coach).	Weekly training sessions plus daily app exercises in 5 weeks	PTQ (✓)	PTW within group from pre-6m FU *d*=1.66 [1.32,1.98] (large)	Significant decrease in RNT at post.	1

(Hirsch C.R. et al., 2018)	GAD or depression diagnosis (SCID)	N=157	United Kingdom	82.44 (17.56)	CBM with RNT priming 29.76 (11.49), CBM without priming 29.47 (10.88), control 30.59 (11.17)	Effects of inducing more positive interpretations in reducing RNT	RCE (2 intervention, 2 active control).	**Cognitive bias modification for interpretation (CBM-I),** either with or without RNT priming prior to training. (Control condition: involved exposure to the same ambiguous material, but without being guided to either a negative or positive resolution.)	One initial visit followed by nine sessions completed at home via online platform. RNT induced on or neutral story task followed by 50 training or control scenarios. (Without support)	10 sessions in 3 weeks	PSWQ trait (✓); RRS trait (✓)	Between groups: CBM-I was showed significantly lower PSWQ scores than the control condition at follow-up (Hedges' g follow-up=.29) (small), but not at post-intervention (Hedges' g=.15). CBM-I was significantly associated with lower RRS scores than the control condition at post, Hedges' g =.31, and FU, Hedges' g=.51) (small). Within-group effect not reported.	CBM-I training decreased worry and rumination, which were maintained at FU.	1
(Hirsch et al., 2020)	High worry and/or rumination (≥ 52 PSWQ and/or ≥ 63 RRS). Clinical levels of anxiety	N=178	United Kingdom	82.61 (17.39)	CBM_RNT 29.41 (10.67); CBM_ENH 29.40 (10.79); control 29.54 (11.03)	Both active training conditions would be superior to a third control condition in improving RNT	RCT (2 interventions, 1 control)	**Cognitive bias modification for interpretation (CBM-I).** Specifically: **Interpretation training condition with prior activation of RNT**	Online platform (Without support).	10 sessions in 4 weeks	RTQ-T [trait] (✓); PSWQ-Past Week (PSWQ-PW)	Between CBM-I and control RTQ-T was significant at post (g=.41) (medium) and FU:	CBM-I training was associated with reduced RNT (as assessed by the RTQ-T.	1

	(≥10 GAD-7) and/or depression (≥10 PHQ-9)							**(CBM_RNT)** and comparator: **training condition augmented with positive outcome generation and imagery (CBM_ENH).** (Active control group the same ambiguous scenarios were presented but without specific guidance as to their resolution).			(✓); RRS (✓), PSWQ (✓)	(g=.31). Between CBM-I and control for PSWQ-PW was significant at post (hedge's g=.35) (small-medium) and at FU (hedge's g=.40) (medium). RRS and PSWQ were not significant. Within-group effect not reported.	The measure of a specific form of RNT (PSWQ) only revealed consistent changes when rated in relation to the previous week. General rumination did not decrease through the training.	
(Hoorelbeke & Koster, 2017)	Remitted depressed (MINI)	N=68	Belgium	66.18 (33.82)	CCT 46.12 (10.80); Control 47.82 (12.20)	CCT would have beneficial effects on brooding	RCT (Active control)	**Cognitive control training (CCT).** Consisted of PASAT Paced Auditory Serial Addition Task) (Active control: Low cognitive load training:)	Online in-browser using a millisecond software web license. (No support).	10 sessions in 2 weeks	Brooding subscale of RRS (✓)	Pre-post for brooding Partial Eta2 =.27 (large); Cohen's *d*= 1.22 (large)	Only the CCT condition showed a decrease in brooding (pre-post training). Both groups reported a significant decrease in brooding from post-training to 3-month FU, with brooding levels significantly lower in	0.96

													the CCT at post-training and follow-up.	
(Joubert et al., 2021)	Elevated rumination and/or worry (≥28 RTQ-10)	N=26	Australia	76.9 (23.1)	45.9 (14.6)	Evaluate the acceptability and impact of the intervention program in reducing rumination and worry	Single arm pre-post	Drawn from different CBT perspectives, incl. Rumination-Focused CBT, Mindfulness-based Cognitive Therapy (MBCT), Metacognitive therapy (MCT)	Online module, illustrated, comic-style story, downloadable summary and action plan (No support).	3 lessons in 6 weeks	RTQ10 (✓)	RTQ10 within-subject effect sizes pre-post, Hedges' g= 2.26 (large)	Significant decrease in RNT, maintained at 1-month follow-up.	1

(Kladnisti ki et al., 2022)	MDD, GAD, panic disorder, agoraphobia, SAD, and/or OCD (ADIS-5)	N=74	Australia	84.6 (15.4)	36.69 (11.53)	Effect of intervention on RNT	RCT (TAU)	**Transdiagnostic internet cognitive behavioural therapy (iCBT)** for mixed anxiety and depression. (Compared to Treatment as usual; TAU).	Clinic website (Contact to encourage adherence and on demand, and if increased depression scores/risk. By: Clinicians)	6 lessons in 14 weeks	RTQ10 (✓)	RTQ: large, significant effect sizes from baseline to post-treatment Hedge's g 1.25 (95%CI=0.73 – 1.77) (large)**;** baseline to FU g=1.08 (95%CI=0.55 – 1.61 (large)).	Significant decrease of RNT with effects maintained at follow-up	1
(Knabb et al., 2021) **Study 1**	Rumination about a traumatic event.	N=54	USA	70.27 (29.73)	Intervention 29.13 (12.28), WLC 32.09 (9.41)	Intervention group would outperform the WLC on greater reduction in ruminative thoughts	RCT (WLC)	**Christian Meditation Program for Trauma-Based Rumination.** Christian attention, Christian present focus, Christian awareness, Christian acceptance. Some CBT/CT based elements. (Waitlist control)	Online modules, audio recordings, handouts, questions to assess attention and knowledge. (Email reminders. By: not specified)	4 modules in 4 weeks	(RIQ) (✓); (PTQ) (✓)	Significant within intervention group pre-post RIQ Cohen's *d*=−0.68 (medium-large); Non-significant within intervention group pre-post PTQ Cohen *d*=−0.41 (medium).	Significant decrease in rumination in response to intrusive trauma memories, however, no significant decrease in general RNT, from pre-post.	0.91
(Knabb et al., 2021) **Study 2**	Sometimes dwell on a traumatic event	N= 95	USA	78.95 (21.05)	Intervention group 35.88 (11.55); WLC 40.61 (11.90)	Intervention group would outperform the WLC: greater reduction in ruminative thoughts.	RCT (WLC)	**Christian Meditation Program for Trauma-Based Rumination**. (Waitlist control)	Online modules, audio recordings, handouts, questions to assess attention and knowledge. (Email reminders. By: not specified)	4 modules in 4 weeks	RIQ (✓) ; PTQ (✓)	Significant intervention pre-post effect for RIQ ,Cohen's *d*=−.40 (medium). Pre-post intervention group on	The intervention showed a significant decrease in rumination in response to intrusive trauma memories (RIQ). No	0.91

												PTQ was not significant *d*=−0.25 (small).	significant decrease in general RNT (PTQ), pre-post.	
(Newby et al., 2014)	GAD, MDD, or mixed (MINI 5.0.0)	N=99	Australia	77.8 (22.2)	44 (12.2)	iCBT for mixed anxiety and depression effectively reduces repetitive negative thinking (RNT)	RCT (WLC)	Transdiagnostic internet cognitive behavioural therapy **(iCBT)** for mixed anxiety and depression. (Waitlist control)	Website incl. illustrated online lessons, summary, homework exercises. (Regular contact lessons 1-2, afterwards on demand. By: Administrative assistant. If clinical advice or deteriorated therapist)	6 lessons in 10 weeks	RTQ assessed RNT frequency (✓).	Pre- and post-treatment for RTQ effect sizes Hedges g = 1.40 (.95 1.84) (large).	RNT decreased significantly following iCBT compared to WLC, with gains maintained at 3-month follow-up.	1
(Paxling B. et al., 2011)	High worry (53 PSWQ) GAD diagnosis (≥5.7; GAD-7; SCID-I and psychiatrist)	N=89	Sweden	79.8 (20.2)	39.3 (10.8)	Alleviate symptoms associated with GAD (primary measure: worry)	RCT (WLC)	**CBT for GAD**. (Waitlist control)	Website incl. written modules, audio recordings. (Weekly feedback on homework and reminders. By: Psychology students)	Weekly for 8 weeks	PSWQ (✓)	PSWQ within group effect size *d*=1.08.One year FU within treatment group *d*=1.66 (large)	Worry significantly decreased in the treatment group from pre-post intervention. Effects were maintained at 1-year FU.	0.96
(Querstret D. et al., 2017)	Moderate to high levels of work-related rumination (≥15 WRRQ Affective Rumination subscale)	N=127	United Kingdom	80.51 (19.49)	Intervention group 41.67 (10.57); control (39.66 (10.33)	Lead to significantly lower levels of affective work-related rumination	RCT (WLC)	**Internet-based Mindfulness for Work-Related Rumination**, Fatigue, and Sleep. Uses mindfulness-based stress reduction (MBSR) and Mindfulness-based cognitive therapy (MBCT). This includes formal meditation	Interactive online sessions, videos, audio. (Email reminders. No personal contact with instructors. By: not specified)	10 sessions in 4 weeks	WRRQ: Affective Rumination and Problem-Solving Pondering subscales (x)	Affective rumination partial eta squared=0.11 (medium). Main effect of group partial Eta squared=0.30 (large)	Mindfulness showed significantly lower levels of affective rumination compared to WLC.	0.96

								skills (e.g., body scan, mindful movement, sitting meditation, and "three minute breathing space") and informal mindfulness activities. (Waitlist control)						
(Robinson E. et al., 2010)	GAD diagnosis (MINI 5.0)	N=150	Australia	31.7 (68.3)	46.96 (12.70)	Replicate findings that people with a diagnosis of GAD could be treated using a diagnosis-specific iCBT for GAD. Clinician-assisted (CA) treatment would be efficacious	RCT (active; WLC)	Clinician-assisted **internet based CBT (iCBT) for GAD.** (Comparison: Technician-assisted; Waitlist control)	Online lessons incl. case examples, summary, homework, additional resources. (*Clinician assisted:* Provided weekly contact. Support in online discussion forum. Support with treatment including goal setting, problem solving, and discussion of strategies for overcoming hurdles. By: qualified Clinical Psychologist; ***Technician assisted:*** Weekly contact, encouragement, support, refer to program material. No clinical advice. By: technician w/o qualifications in health care or counselling)	6 online lessons in 10 weeks.	PSWQ (✓)	PSWQ within pre-post for clinician assisted *d*=1.16 (large); within pre-post for technician assisted *d*=1.07 (large).	Significant decrease in worry pre-post. Results sustained at 3-month FU in the technician-assisted group, clinician-assisted group showed continued improvement.	0.96

(Rosmarin, 2010)	High worriers (≥54 PSWQ)	N=125	USA	76.6 (23.4)	41.8 (13.6)	Evaluate the efficacy of a short-term spiritually integrated treatment for subclinical anxiety among Jews, delivered via the internet.	RCT (Active control ; WLC)	**Spiritually integrated treatment (SIT)** for subclinical anxiety in the Jewish community. (**Active control:** Progressive Muscle Relaxation; Waitlist Control)	Study website. Guided audio-video programme. (Daily email reminders, no therapist contact. By: not specified)	Daily for 2 weeks	PSWQ (✓)	Within group effect size for SIT on worry: Pre-post Cohen's *d*=1.83 (large); Pre-FU Cohen's *d*=1.90 (large)	SIT decreased worry from pre to post intervention.	1.00
(Titov et al., 2009)	GAD diagnosis (MINI 5.0)	N=48	Australia	76 (24)	44 (12.98),	Determine the efficacy of a CaCCBT programme for GAD	RCT (WLC)	**Clinician-assisted computerized cognitive behavioural treatment (CaCCBT)** = **CBT for GAD**. (Waitlist Control)	Online sessions, homework, moderated online discussion forum (Weekly email contact. By: Clinical Psychologist)	6 online sessions in 9 weeks	PSWQ (✓)	Within group pre-post intervention group PSWQ Cohen's *d*=0.98 (large).	Treatment group participants reported significantly decreased worry.	0.96
(Wahlund et al., 2022)	High worry (>56 PSWQ)	N=108	Sweden	81.48 (18.52)	MCI 38 (11); WLC 40 (12)	Reduce worry severity and negative beliefs about worry compared to WLC	RCT (WLC)	Simplified, condensed, online **metacognitive intervention (MCI), using metacognitive therapy** (waitlist control)	Online platform incl. written information, audio with instructions for homework. (Access to a therapist via written communication. By: therapist)	8 modules in 10 weeks	PSWQ (✓)	Cohen's d PSQW *d*=1.64 (large), sig.between-group differences for the pre- to post-intervention change, favouring MCI. Within-group effect not reported.	The intervention had a large and clinically meaningful total effect in decreasing worry.	0.92

Note. Measures: ADIS-5=Anxiety and Related Disorders Interview Schedule for DSM-5 (Brown & Barlow, 2014); MINI 5.0.0= The Mini-International Neuropsychiatric Interview (Sheehan et al., 1998); PSWQ=Penn State Worry Questionnaire (Meyer et al., 1990); PSWQ-PW= Penn State Worry Questionnaire-Past Week (Stöber & Bittencourt, 1998); PTQ=Perseverative Thinking Questionnaire (Ehring et al., 2011); RIQ=Response to Intrusion Questionnaire (Clohessy & Ehlers, 1999; Murray et al., 2002; Steil & Ehlers, 2000); RRS=Ruminative Response Scale (Nolen-Hoeksema & Morrow, 1991; Treynor et al., 2003); RTQ-10=Repetitive Thinking Questionnaire-Short Form (McEvoy et al., 2010b); SCID= Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) (First et al., 1997); SCID-RV= Structured clinical interview for DSM–5, research version (First et al., 2015); WRRQ= Work-related Rumination Questionnaire (Cropley et al., 2012). Other acronyms: CBT=cognitive behavioural therapy; CT=cognitive therapy; DSM-IV =diagnostic and statistical manual 4th edition (American Psychiatric Association, 1994); FU=follow-up; GAD=generalised anxiety disorder; ITT=intent to treat; MDD=major depressive disorder; OCD=obsessive compulsive disorder; QR=quality rating using Qualsyst tool (L. Kmet et al., 2004); RCT=randomised controlled trial; RNT=repetitive negative thinking; SAD=social anxiety disorder; WLC=wait-list control

Study Characteristics

Across the 24 studies (summarised in Table 2) sample sizes ranged from three to 301 for a combined sample of N=2549, overall predominantly female (*M*=74.05% female), average age between 29-46. The designs included 17 RCTs (10 with waitlist-controls, seven with active controls), one randomised controlled experiment, one pilot randomised factorial design, four single-arm pre-post designs and one case series. Six were explicitly labelled as pilot/preliminary studies (Dahlin et al., 2020, 2022; Dahlin, Ryberg, et al., 2016; Draper et al., 2008; Hirsch C.R. et al., 2018; Joubert et al., 2021) with accordingly small samples. The seven active control conditions within RCTs can all be considered credible alternative interventions: Four studies slightly altered their primary intervention for example employing technician instead of clinician assisted support (Robinson et al., 2010), not including an augmentation/positive imagery (Hirsch et al., 2008;2020), or a lower level of cognitive load training (Hoorelbeke & Koster, 2017). Two studies chose existing, established interventions as comparators: online cognitive behaviour therapy (Andersson et al., 2012) and progressive muscle relaxation (Rosmarin, 2010), and one study compared their intervention to treatment as usual (Kladnistki et al., 2022). Studies were published between 2008 and 2022, and all were conducted in high-income countries (nine from Sweden, six from Australia), of which several included the same authors (six studies co-authored by Mats Dahlin). Participant inclusion criteria were high RNT (for n=9: 4 worry, three rumination, 2 RNT), a psychiatric diagnosis (n=10), or high RNT and/or diagnosis (n=5) where all diagnoses included GAD as an option. The most frequently employed measure in n=18 studies was the Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990) with one using the PSWQ-past week version (Stöber & Bittencourt, 1998), followed by the Repetitive Thinking Questionnaire (RTQ; Mahoney et al., 2012; McEvoy et al., 2010) in n=4 studies, the Ruminative Response Scale (RRS; Nolen-Hoeksema & Morrow, 1991; Treynor et al., 2003) and Perseverative Thinking

Questionnaire (PTQ; McEvoy et al., 2010a) both in n=3 studies, the *Response to Intrusion Questionnaire* (RIQ; Clohessy & Ehlers, 1999; Murray et al., 2002; Steil & Ehlers, 2000) in 2 studies and the Work-related rumination (WRRQ; Cropley et al., 2012) in 1 study. (Some studies included more than one RNT measure).

Interventions

Most studies employed existing evidence-based therapeutic interventions, some combining multiple approaches or were based on psychological theory. See Appendix B for a more detailed overview of interventions.

Cognitive behaviour therapy

Seven studies applied internet-based/computerised cognitive behaviour therapy (CBT), two were transdiagnostic for anxiety and depression (Kladnistki et al., 2022; Newby et al., 2014) and five CBT for GAD (Amir & Taylor, 2012; G. Andersson et al., 2012; Paxling B. et al., 2011; Robinson E. et al., 2010; Titov et al., 2009). They included similar components including psychoeducation, self-monitoring, behavioural activation/activity scheduling, thought/belief challenging/cognitive restructuring, (imaginal; graded) exposure, applied relaxation, problem solving, worry time and relapse prevention, often with homework. Amir and Taylor (2012) applied an Attention Modification Program designed to facilitate attentional disengagement from threat-relevant cues (based on cognitive theory) in GAD together with computer-delivered CBT.

Acceptance and Commitment Therapy

Two studies by the same author applied acceptance and commitment therapy (Dahlin et al., 2022; ACT; Dahlin, Ryberg, et al., 2016) and one acceptance-based behaviour therapy (Dahlin, Andersson, et al., 2016). All three focused on functional analysis, acceptance,

mindfulness and valued action to take a more accepting approach to anxiety and worry and living in accordance to one's values instead of reacting with avoidance.

Metacognitive therapy

Simplified metacognitive therapy (MCT) was used in one study (Wahlund, 2022) aimed at reducing negative beliefs about worry, which included modification of metacognitive beliefs and dysfunctional worry-management, mindfulness and attention training.

Psychodynamic

One study evaluated internet-based psychodynamic psychotherapy (IPDT) (IPDT; G. Andersson et al., 2012) compared to CBT. IPDT consisted of seeing, understanding, breaking and preventing unconscious patterns that relate to worry and anxiety.

Mindfulness

One study implemented mindfulness for work-related rumination (Querstret D. et al., 2017), incorporating mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT).

Spiritual

Three studies employed spiritual interventions. Two used Christian Mindfulness (same paper; Knabb et al., 2021) which incorporated Christian attention, Christian present focus, Christian awareness, Christian acceptance, as well as some Christian-adapted CBT techniques (e.g. shift from “why” and “what if” questions to focus on God and psychoeducation. The other was a Jewish spiritual intervention (Rosmarin, 2010) which focused on cognitive (Jewish religious stories) and behavioural (gratitude, prayer) strategies to reduce worry and anxiety.

Extinction therapy

Two studies by the same author evaluated internet-based extinction therapy (Andersson E. et al., 2021; E. Andersson et al., 2017) based on operant conditioning, using extinction techniques to systematically block the reinforcing contingencies of thinking comforting thoughts: mindfulness-stance to catastrophic thoughts, thinking the worst thought, and acceptance of uncertainty.

Cognitive training

Three studies aimed to modify cognitive factors that contribute to RNT. Two studies, by the same author (Hirsch et al., 2020; Hirsch C.R. et al., 2018), evaluated cognitive bias modification for interpretation (CBM-I). Through repeated exposure to event descriptions (relating to common worry or rumination-related themes) with positive resolutions, participants were trained to anticipate/generate positive resolutions. These were modified with/without RNT priming prior to training, or imagery of positive outcomes. Another study applied cognitive control training (CCT; Hoorelbeke & Koster, 2017). This consisted of training to respond to auditory digits, proposed to activate the prefrontal cortex (a key cognitive control region) in a stressful context, with the aim of decreasing brooding.

Mixed

Five studies used mixed therapeutic approaches in their interventions. Dahlin and colleague's self-help program for excessive worry included components of ACT and behaviour therapy in one study (2020) and 14 modules of ACT or CBT in another (2022). Draper and colleagues (2008) augmented CBT for GAD by adding techniques addressing metacognitive beliefs, acceptance, and mindfulness. Joubert and colleagues (2021) developed an intervention to target worry and rumination drawing from different CBT perspectives,

MBCT and MCT. Heckendorf and colleagues (2019) evaluated a gratitude training which was based on positive psychology and CBT principles.

In summary, interventions consisted of n=7 CBT, n=3 ACT, n=2 extinction therapy, n=1 MCT, n=1 psychodynamic, n=1 mindfulness, n=3 spiritual, n=3 cognitive training, and n=5 mixed (these include 2 active comparator interventions). Comparators were 15 waitlist controls, n=1 treatment as usual, and active controls n=2 using relaxation techniques (Andersson E. et al., 2021; Rosmarin, 2010), n=2 neutral scenarios (Hirsch et al., 2020; Hirsch C.R. et al., 2018) and n=1 a low cognitive load training (Hoorelbeke & Koster, 2017).

Online method

All interventions were developed or adapted for at-home online-use via websites and employed text and often audio and video. One had additional app-based exercises, others homework and workbooks. Length of the intervention varied between 2-14 weeks with frequency/rate determined by participants but often encouraged as daily or weekly. Most had some form of support: n=5 regular therapist/clinician support, regular support by psychology student n=6, regular non-clinician/technical support n=6, support on demand by clinician (n=1), by psychology student (n=2), by non-clinician (n=1), or no support (n=5). Some included multiple types, depending on group.

Outcomes and effectiveness

All studies reported that their intervention significantly decreased their targeted RNT. Almost all reported large pre-post (within) effect sizes, however many were pilot studies with small samples. Small, between-group effect sizes for studies with active controls were reported for Hirsch et al., (2018), small-medium in Hirsch et al. (2020), Knabb et al. (2021) reported medium-large (study 1) and small-medium (study 2) within effect sizes and Querstreet et al. (2017) medium within effect. Draper et al. (2008) did not report an effect

size as it was a case series. See Appendix B for a more detailed description of the interventions, control conditions, and between-group effect sizes.

Although not the focus of the current review, it is important to note that interventions also showed benefits beyond RNT and significantly impacted secondary outcomes associated with RNT. Specifically, within the reviewed studies, n=17 interventions significantly decreased depression, n=10 decreased GAD, n=6 decreased anxiety, n= 2 decreased trauma symptoms, n=2 decreased cognitive avoidance, n=2 decreased negative metacognitive cognitions, and one study reported decreased distress, one decreased maladaptive coping strategies. Furthermore, 4 studies described that their RNT intervention positively impacted on outcomes of quality of life, while one intervention showed no significant impact on quality of life. Two studies reported improved religious/spiritual coping, n=2 described improvements in sleep, and one study each described improved emotion regulation, tolerance of uncertainty, mindfulness, and overall resilience. Many studies included both depression and anxiety measures, as well as other outcomes, referencing the high comorbidity between these disorders or describing a transdiagnostic approach to their research. Only two studies measured no outcomes besides RNT.

Study Quality

Assessing the overall quality of studies using Qualsyst tool (L. Kmet et al., 2004) revealed a good mean summary score of 0.97 (range 0.91-1). The mean scores for each methodological aspect were all 1 or above (maximum possible score 2). The lowest scores were for inappropriate sample size/power (*M*=1.75) and inadequate control for confounding (*M*=1.78) and method of subject selection (*M*=1.83). Blinding was not possible for most studies. Many categories had full scores, such as characteristics described, outcome measures, and drawing appropriate conclusions (*M*=2.00). See Appendix C for scores for

each question per study, as well as clarifications of questions based on previous research by Goodison (2022) and author agreement.

Discussion

The aim of the current review was to understand the extent of evidence for targeted online interventions that aim to decrease repetitive negative thinking (RNT), how effective they are in that aim, and to evaluate the quality of these studies. Online internet-based interventions have become more commonly deployed in recent years, comparable in effectiveness to face-to-face delivery (Cuijpers et al., 2009b) at lower cost (Gega et al., 2022). Beyond diagnosis-focused interventions, growing research has targeted transdiagnostic maintenance factors of mental ill health, such as RNT, which includes worry and rumination. The current review identified 24 studies that aimed to decrease RNT through an online intervention. Noticeably, the majority are from recent years highlighting the currentness of the topic.

Interventions and Effectiveness

The review found that a range of interventions address RNT. Most prominent were interventions employing CBT or third wave CBT interventions (ACT, MBCT, MCT). These are largely grounded in cognitive theory, positing that unhelpful beliefs and cognitions maintain difficulties (J. Beck, 2011). One intervention was based on psychodynamic theory where RNT was proposed to be maintained by unconscious patterns that needed to be understood and broken (G. Andersson et al., 2012). Mindfulness and spiritual interventions similarly emphasise focusing one's attention away from RNT onto something more meaningful (e.g. present moment; God). Extinction therapy based their interventions on operant theory, where rumination was thought to stem from unhelpfully learned associations (G. Andersson et al., 2012). Finally, a group of interventions used cognitive trainings (cognitive bias modification) where repeated exposure was theorised to activate the prefrontal

cortex and train the brain to respond in a more helpful way (less ruminative). Five studies mixed therapeutic approaches. Broadly, it appears that interventions in which participants are taught to change their thinking patters or beliefs (e.g. CBT), or to disengage from the emotional response to RNT by focusing on something else (e.g. mindfulness), or are trained to change automatic cognitive responses (associations/cognitive bias), could be helpful. This conclusion partially mirrors that by Querstret and Cropley (2013) who reviewed interventions (including face-to-face interventions) for rumination and worry.

Although all RNT was included in the search, the majority of studies targeted worry within GAD. This may be because treatment of worry within GAD is well established (more so than transdiagnostic or rumination interventions) and is now being translated into online formats as part of wider dissemination. Fewer interventions, mostly published in recent years, addressed and measured transdiagnostic RNT. These subscribe to the movement of understanding RNT as transdiagnostic concept (Ehring & Watkins, 2008). Despite a theoretical research shift towards transdiagnostic RNT, this does not seem to have translated into interventions yet.

Interestingly, *all* interventions, across therapeutic and theoretical foundations, significantly decreased their targeted RNT. Mindfulness interventions showed slightly weaker effects: Christian Mindfulness (Knabb et al., 2021) and Mindfulness for Work-related Rumination (Querstret D. et al., 2017) reporting small-medium effect sizes. Cognitive bias modification reported the smallest effect, however, these were between group effect sizes, meaning they cannot be directly compared to within-subject effect sizes but should be considered more robust overall. All other studies reported large effect sizes. A recent meta-analysis of interventions for worry and rumination (not online) similarly found no superior intervention type (McCarrick et al., 2021). As the area of online RNT interventions is still relatively novel, many studies were designed as pilots with small samples all claiming to be

the first of their kind (e.g. first online ACT for GAD). Therefore, significant results with large effects should still be considered with caution as many studies were underpowered. However, they may offer initial clinical support for CBT- and mindfulness-related interventions and cognitive trainings to reduce RNT. This is partially in line with a recent umbrella review of meta-analyses which concluded internet-based CBT as effective for anxiety and mood disorders (G. Andersson, Carlbring, et al., 2019). There were also no noticeable differences in effectiveness of interventions with diagnosis-specific samples/interventions versus transdiagnostic approaches. Similarly, a review on internet-based interventions for common mental health disorders concluded that "both transdiagnostic and tailored interventions work" (G. Andersson & Titov, 2014). Since all interventions were effective, across intervention types, samples, and types of support, it may also be worth exploring whether success is due to a generic treatment effect or whether all studies have something in common such as increasing education and awareness of RNT.

All studies were online, largely text-based, and often enhance through audio and video. This format matches those found in other reviews of internet-based interventions (G. Andersson, 2009). Most interventions were accompanied by regular, clinical support. The evidence supports this as more effective than support on demand (Dahlin et al., 2022). The many successful interventions further let us assume that the online format appears feasible and acceptable, as previous reviews have concluded as well (Lamb et al., 2019).

Study Quality

The overall quality of the research was very good. Although this is encouraging, they should however be considered in the context of the specific quality measure used (L. Kmet et al., 2004). For example, even though many studies had small samples and were underpowered, there were given full scores for sample size as the samples were 'appropriate'

for the pilot aims of these studies. Similarly, multiple questions were consistently not applicable, such as researcher and participant blinding.

Limitations of the Reviewed Literature

Given the relative novelty of this research area, it is important to consider the limitations of the current evidence base, to be improved upon in future studies.

Representativeness of Sample

It was noticeable that all includes studies took place in high-income countries. This may be explained by increased funding and internet-access in these countries, or the fact that multiple studies were conducted by the same authors, who were based in these countries. The current review cannot claim to be globally representative. Other reviews have similarly noted the need to expand internet-based interventions to other cultures and countries (G. Andersson, Titov, et al., 2019). A recent review (Mahmoud et al., 2022), which explored barriers telemedicine in low- and middle-income countries, suggests that barriers include unavailability of infrastructure or equipment, telemedicine policies and regulations, privacy concerns, and acceptability issues.

Studies likely had some self-selection bias in their recruitment. However, studies included a wide range of clinical and non-clinical samples and all exclusively included individuals who showed reported high RNT. Therefore samples were not solely based on self-selection. All outcome measures were self-report which may limit objectivity, but all except one were well validated and widely used. A meta-analysis reported that effect sizes for worry based on self-report measures are lower than clinician-rated instruments (Cuijpers et al., 2014). It is therefore possible that effect sizes were underestimated.

Due to the nature of online interventions, all studies excluded illiteracy and lack of internet access. Interestingly, many studies also excluded severe mental health (e.g. serve anxiety/depression, substance use) without providing justification (Andersson E. et al., 2021;

G. Andersson et al., 2012; e.g. Hirsch et al., 2020; Hirsch C.R. et al., 2018; Joubert et al., 2021; Newby et al., 2014; Wahlund, 2022). This limitation is similar to one expressed by Andersson and Titove who found that internet-based interventions mostly addressed mild to moderate severity (2014). It is likely that online interventions do not offer sufficient safeguarding possibilities if high distress or risk arises, which may be more likely with greater symptoms severity. However, it would be useful to test whether online interventions are indeed not suitable for these populations. A further possible limitation is that the age of participants was not of focus in the current review. It is therefore unclear whether studies report representative samples of individuals who would use online interventions, and whether the accessibility of the intervention is greater for some age groups than for others. For example, it may be assumed that older generations may find online material less accessible than younger generations, however, this has not been evaluated in the current review. The mean age of included studies was between 30-50 years with 10-15 years standard deviation. However, no conclusions about accessibility can be drawn from these numbers as the reasons for these ages were not evaluated and could be due to many factors, such as research inclusion criteria, specific recruitment strategies, or genuine access limitations. The impact of age on access should be explored further in future studies.

Many studies reported a wide range of adherence and low completion rates, with one study reporting only 44% completion (E. Andersson et al., 2017). While some authors did not explore reasons, others described technical difficulties, lack of time, mismatch of intervention with needs, or high distress/severity of mental health. Some of these be more prevalent in online interventions. Johansson and colleagues (Johansson et al., 2015) propose a model of non-adherence to internet-delivered therapy which incorporates treatment features such as workload, text-content complexity, and treatment expectations. Furthermore, regular/scheduled support is associated with greater adherence and lower drop-out compared

to support on demand (Dahlin et al., 2022). The current findings need to take this limitation into account and future research should further evaluate adherence and dropout in online interventions.

Design

Although two-thirds of the studies were RCTs, most included weak comparators (Waitlist or treatment as usual), therefore, the effects may reflect a general treatment effect. This is in line with other reviews on internet-based interventions which conclude that the literature thus far is restricted mainly to efficacy trials (G. Andersson, 2009) and not superiority to other treatments (Gega et al., 2022). A comparison between interventions was not the aim of the current paper, however, future reviews should explore superiority.

Limitations of the Review

The findings of this review should be viewed in the context of its limitations. The study used a systematic but non-analytic approach to synthesis. This was chosen because the interventions and their research methodology are highly heterogeneous, differing greatly in their length, frequency, intervention content, type and extent of support, and way of evaluating outcomes. This broad inclusion of research designs and interventions in line with the research aim to examine which interventions exist, including case studies or pilots, to give a comprehensive picture of this new field of online interventions that address repetitive negative thinking. However, caution should be taken when comparing such heterogenous studies and interpreting findings.

Publication bias likely impacted the number of studies showing positive effects. It is likely that null findings were not reported/published. As non-peer-reviewed articles were not included (e.g. theses) to increase the quality of studies, this could have contributed to a bias towards positive findings. It is further possible that the current search methods missed relevant studies if they did not report RNT in their title or abstract but only summary

concepts (e.g. stress, GAD), as was the case in one article found through reference-searching. Many online interventions that evaluated RNT were excluded as their primary aims/measures were not RNT, but GAD or depression. The current study was specifically interested in studies that were designed and aimed to address a specific or general RNT. The inclusion was further limited by only including English-language papers due to the authors abilities.

Research Implications

Before a new systematic review is advised, more robust original studies on online interventions for RNT are needed. Specifically, researchers should go beyond pilot studies but aim for fully-powered samples and inclusion of active comparators. Based on the currently existing studies, it is unclear which interventions addressing RNT work best and why. Therefore, future studies should evaluate superiority as well as exploring mechanisms of change. For example, it is unclear whether diagnosis-specific or transdiagnostic approaches to RNT are more effective. Future studies should include broader populations, such as individuals with more severe mental health difficulties and increased diversity, or provide an evidence-based justification why these are not included. Once a new systematic review is warranted, a review should consider the benefit of interventions beyond RNT: When evaluating superiority of a RNT interventions, reviews should also consider the interventions' impact on diagnostic and transdiagnostic outcomes, such as measures of depression, anxiety, psychological distress and quality of life, for a more complete picture of the benefit of these interventions. Overall, the area of online interventions for RNT appears to be a promising and growing field of research with the potential to deliver evidence-based, accessible intervention to decrease transdiagnostic difficulties.

Clinical Implications

Transdiagnostic online treatments that target general processes underlying mental

health ill, such as rumination, worry and RNT, can be helpful in addressing comorbid or sub-threshold clinical concerns (Kertz & Woodruff-Borden, 2011; Sauer-Zavala et al., 2017). This could decrease distress, co-morbid symptoms and associated healthcare problems and may be especially important for individuals who may not be eligible for diagnosis-based services, cut-off dependant treatments, or experience barriers accessing these (e.g. mobility, cost, timing).

Conclusion

Overall, this review offers encouraging results by showing that a wide range of online interventions can successfully decrease targeted repetitive negative thinking. Broadly speaking, interventions that encouraged (1) changed patterns of thinking/beliefs, (2) disengagement from emotional responses by redirecting their focus of attention, and (3) changes to automatic cognitive responses appeared effective in reducing RNT. The quality of studies was good, however, findings should be considered with caution as many were small-sampled and underpowered. This was expected in an emerging field of online RNT interventions. Further studies should include larger samples and active comparators to enable future reviews of which intervention may be most effective in decreasing RNT. The studies support the growing evidence-base for online interventions and provide initial support for feasible, accessible, and effective interventions to address diagnosis-specific and transdiagnostic repetitive negative thinking.

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Service Improvement Project

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Proposed Journal: Psychological Trauma: Theory, Research, Practice, and Policy

Rational for journal choice: The journal has been chosen as its scope covers not only trauma research but also practice and policy, meaning that a paper on service improvements for the wider practice regarding psychological trauma would be a good fit. Furthermore, other studies addressing trauma informed care, cited in this paper, have been published in this journal, indicating the journal's interest in this area of research. See journal guidelines in Appendix K.

Abstract

Objective

Trauma-informed care (TIC) has been promoted as a way for services to be aware and respond to the potential impact of trauma. However, understanding of TIC and how to implement it is often unclear, with limited evidence. A TIC training provider sought advice on how to improve their training.

Method

The current study used a qualitative approach to explore (1) participants' understanding of TIC after being trained, (2) their experience of facilitators and barriers to implementing TIC and (3) recommendations to improve training. Semi-structured interviews were completed with 9 professionals across health, social and education services.

Results

Results revealed a TIC understanding similar to existing guidelines, with minor disagreement over responsibility and trauma understanding. Many facilitators and barriers for TIC implementation built on participants' understanding of TIC and could be addressed through training. Recommendations for TIC training improvement are provided in terms of who and how to train. Links to existing literature, strengths and limitations of the study are noted.

Conclusion

The study provides a theory-driven contribution to the evidence-base on TIC understanding, facilitators and training improvements. Although qualitative results have limited generalizability, training recommendations may be useful for other services.

Keywords: Trauma-informed care; Trauma-informed practice; Trauma; staff training; behaviour change model

Trauma-informed Care Training:

A Theory-Driven Qualitative Evaluation and Recommendations for Improvement

Childhood trauma and adversity can have a significant psychosocial impact across the lifespan (Brown et al., 2009; Burke et al., 2011; Felitti et al., 1998; Kiesel et al., 2016; Messina & Grella, 2006) and is linked to high rates of psychopathology, risk events (including self-harm, suicide and violent offences) and functional impairment. Individuals with a history of trauma are particularly vulnerable to becoming distressed or re-traumatised as a result of healthcare experiences (Coles & Jones, 2009). Understanding this led to the development of 'trauma-informed care' (TIC), for service providers to better equip themselves to respond to clients' needs by being 'aware, sensitive, and responsive to the potential impact of trauma' (Hanson & Lang, 2016). TIC is an orientation shift from asking clients "what's wrong with you", to considering "what happened to you" (Harris & Fallot, 2009; Sweeney & Taggart, 2018). It focuses not only on clinical delivery but considers how trauma impacts staff and how systems respond to trauma, across services and levels of staff (Sweeney et al., 2016; Wilson et al., 2013). While there is no universal definition of TIC (Bendall et al., 2020; Berliner & Kolko, 2016), there is widespread use of the principles described by the US Substance Abuse and Mental Health Services Administration (SAMHSA, 2014), which were recently adopted by the UK government (Office for Health Improvement & Disparities, 2022) in light of lacking consensus. They describe four key assumptions of TIC ("4Rs"): *realising* the impact of trauma on service users, staff, communities and healthcare systems, *recognising* the signs and symptoms of trauma, *responding* by integrating knowledge about trauma into practice and policy, and *resisting re-traumatisation*.

Increasing TIC use Through Staff Training

In recent years, TIC has gained popularity across sectors (Becker-Blease, 2017; Purtle, 2020), however, there is limited evidence on what may facilitate or hinder TIC implementation and lead to behaviour change (Hanson & Lang, 2016). TIC guidance suggests that TIC can be implemented at multiple levels, including changes to policy, care environment and through staff training (NHS Education for Scotland, 2017; SAMHSA, 2014). Staff training is recommended as a first, fast, and feasible way for services to become trauma-informed (Purtle, 2020). Some evidence suggests that staff training in TIC leads to beneficial outcomes including reduced practices that can lead to re-traumatisation such as isolation and confinement (Azeem et al., 2017; Borckardt et al., 2011; Elwyn et al., 2015). For clients, some staff training led to decreased juvenile misconduct and assaults (Elwyn et al., 2015) and reduced days spent in treatment in psychiatric hospital (Greenwald et al., 2012). For staff, TIC training was reported to improve attitudes towards trauma, increase TIC knowledge, confidence working with TIC, self-reported skills implementing TIC practices and perception of safety (Choi & Seng, 2015; Goetz & Taylor-Trujillo, 2012; Greenwald et al., 2008; Kenny et al., 2017; Kramer et al., 2013; Purtle, 2020; Raja et al., 2015). However, multiple studies also found that training had no significant impact on practice or staff's trauma sensitivity (Borckardt et al., 2011; Crable et al., 2013; Green et al., 2016). TIC training may be especially important for staff working with children (an under-researched area; (Kramer et al., 2013), and mitigate the impact of adversity early on (Atkinson et al., 2023). TIC staff trainings vary in definitions, content, aims, length and implementation of TIC (Jackson & Jewell, 2021). Trainings often teach the tenets of trauma-informed practice with the aim of "increasing staff knowledge, improving attitudes, and changing behavior" (Purtle, 2020) however, without clear training aims or theory of how to facilitate TIC implementation and behaviour change (Weiss et al., 2017). A recent scoping review

concluded no ‘best practice’ on how to train TIC (Jackson & Jewell, 2021).

Services across the UK have been encouraged to use TIC and train their staff (Office for Health Improvement & Disparities, 2022). The current study was initiated by a British TIC training provider seeking to improve their training. Specifically, the current study sought to improve the Forensic Child and Adolescent Mental Health Service (fCAMHS) ‘Horizon’, a specialist service within the Oxford Health NHS Foundation Trust, focused on helping young people and their families experiencing distress as a result of sexual harm. Their specialist focus means they are at the forefront of trauma work and were asked by the trust to provide trainings on TIC, delivered by the service lead (CC). As anecdotal feedback suggested that TIC understanding remained unclear and TIC was not implemented after training, the ‘Horizon’ service sought to improve their TIC training.

The study aimed to explore (1) participants’ understanding of TIC after being trained, (2) participants’ experience of barriers and facilitators to implementing/using TIC, and (3) how TIC training can be improved to aid participants’ understanding and use of TIC.

Method

Participants

Participant Characteristics

Trainings targeted Child and Adolescent Mental Health Service (CAMHS) leaders within the Oxford Health NHS Foundation Trust, who were sent training invitations via email, as well as members of the Oxfordshire Safeguarding Children Board (OSCB), who were invited via email and the OSCB website. The Safeguarding Children Board includes area-wide representation of professionals working with children and young people in areas of mental health, social services, safeguarding, charities, and education. Participants’ ages ranged from 25 to 52 years, 8/9 were female, and all identified as White. Participants had

been qualified between 0 to 25 years and most (7/9 participants) had direct clinical contact. Individuals had previously attended between 0-20 hours of TIC training during their qualification and between 0-15 hours post-qualification. These TIC trainings consisted of university/graduate schemes, professionals training, trauma trainings that were not directly aimed at TIC, and informal input from psychologists/behavioural specialists. Two participants had attended the current TIC training before, in a previous role. See Table 1 for an overview of demographic information of all analysed participants.

Table 1

Demographic Characteristics of all Analysed Participants (N=9)

Age: *M (SD)*		35.33 (7.80)
Gender: Females n (%)		8 (88.9)
Ethnicity n (%)		
	White British	8 (88.9)
	Another White background	1 (11.1)
Service working in (n)		
	CAMHS	5
	Safeguarding Services	1
	Social Services	1
	Special Need Education	1
	Charity	1
Profession (n)		
	Lead Nurse Safeguarding Children	1
	Mental Health Nurse	1
	CAMHS Manager	4
	Social Worker	2
	Family Facilitator (school)	1
Years qualified: *M (SD)*		7.89 (7.29)
Direct clinical contact (n)		
	Always	3
	Often	1
	Sometimes	3
	Never	2
Hours of TIC training received *during* qualification *M (SD)*		4.11 (7.72)
Hours of TIC training received *post* qualification *M (SD)*		3.00 (5.29)

Note: *M*=mean; *SD*=standard deviation; CAMHS=Child and Adolescent Mental Health Service

Sample size

Based on a recent systematic review of samples sizes in qualitative research (Hennink & Kaiser, 2022), a sample of N=10 was planned, considering the narrowly defined objectives and homogenous population (all highly educated, child-focused professionals), with saturation to be confirmed by Code Frequency Counts.

Design

The study used a qualitative research design.

Materials

Trauma-informed Care Training

The 2-hour training was facilitated by a Clinical Psychologist (CC) who had co-developed the training. The content covered values and principles of TIC, including SAMHA's 4Rs (2014), understanding the psychological and social impact of adverse childhood experiences and trauma on children as well as on staff, importance of staff self-care, and factors for organisational change and TIC implementation at all levels of service. It was accompanied by visuals, case examples and group discussions.

Demographic Questions

Demographic questions asked about age, gender, ethnicity, profession, service, number of years qualified in core profession, amount of direct client contact, and hours of TIC training during and post-qualification.

Topic Guide

To explore participant's understanding of TIC (aim 1), questions built on the 4R's definition of TIC (SAMHSA, 2014). Open ended questions explored participants' experience of barriers and facilitators to using TIC (aim 2) and recommendations for improvement of the TIC training (aim 3). See Appendix F. A focus group of previous TIC training participants,

consisting of a mental health nurse and a social workers/cognitive behavioural therapist, helped develop and review the interview questions.

Procedure

The study was approved by the Oxford Health NHS Foundation Trust Quality and Audit Team as service evaluation. TIC trainings were held online via *Microsoft Teams*, due to the Covid19 pandemic. Individuals who attended a training were invited to a 45-minute interview. Individuals all provided written electronic consent and completed the brief demographic questions via the online system *Qualtrics*. Semi-structured interviews were completed via *Microsoft Teams*. Interviews took place between October 2021 and February 2022, conducted by HL (a non-British, White, female Trainee Clinical Psychologist with extensive research experience around trauma).

Analysis

Exclusion

One participant was excluded. During the interview it became clear that they were not able to refer to the training in question but confused it with others and appeared unable to understand questions after prompting. As data saturation based on Code Frequency Counts had been reached (Hennink & Kaiser, 2022), no new participant was recruited.

Thematic Analysis

Interviews were audio recorded. Transcripts were subsequently analysed using Reflexive Thematic Analysis (Braun & Clarke, 2006, 2021) using *NVivo12* (International QSR, 1999). The lead author (HL) reviewed each transcript several times to ensure familiarisation before conducting the initial coding and theme generation. All authors reviewed the final themes and interpretation of the data to ensure credibility and coherence.

Philosophical Stance

The analytic approach can be described as semantic with meaning extracted primarily

from explicit comments, as well as largely deductive as themes were informed by a theoretical framework of behaviour change. Using a critical-realist orientation, findings were based on the participant's experience and perception of reality (Braun et al., 2016).

Results

Fifteen key themes were derived from the participant interviews which explored participant's understanding of TIC after being trained (6 themes), participants' experience of barriers and facilitators to implementing/using TIC (6 themes), and how TIC training can be improved to aid participants' understanding and use of TIC (3 themes). For an overview see Table 2 below.

Table 2
Themes and Subthemes From Participant Interviews

Research Question	Theme	Subtheme
Q1: Understanding of TIC after being trained		
	TIC as specialist topic	
		Need specialist professionals
	TIC as everyone's responsibility	
		Everyone is responsible, everyone should be trained
	TIC as mindset/perspective	
	TIC as changed narrative/language	
		TIC narrative
		TIC language
		Recognise TIC through behaviour
	TIC as set of specific skills	
	TIC as all-encompassing label of person-centred care	
		TIC as generic best practice
		TIC as empowering client
Q2: Barriers and facilitators to implementing/using TIC		
	Barrier: Negative impact of trauma on staff	
	Barrier: Clinicians themselves as barriers	
	Barrier: Wider systemic barriers	
	Facilitator: TIC needs a systemic approach	
		Need for systemic approach across systems
		Need top-down approach from leaders
	Facilitator: Building TIC skills within teams	
	Facilitator: Improved attitude towards TIC use through training	
		Training increased confidence
Q3: How TIC training can be improved to aid participants' understanding and use of TIC		
	Training needs	

Training for specific staff groups
Training for specific client groups
Need for implementation skills
Need for repetition
Helpful aspects of TIC training
Specific training format
Specific training content
Training facilitator's attributes
Personal interest in TIC

Understanding of TIC After Being Trained

The following six themes arose from the interviews which illustrated participants' understanding of TIC after being trained. As participants differed in their understanding or held multiple views, themes showed a wide range of opinions and understandings of TIC.

TIC as Specialist Topic

A central theme was the question of who was responsible for using trauma-informed care. Some saw it as a significant barrier that they didn't have better access to TIC "experts", someone "more specialised" (P4) where children with trauma would "normally be referred on" (P7). A few merged this with their understanding of TIC as a *specialist topic* and not within their job: "we have to be clear what our remit is within our service and providing trauma work… isn't really something that we're set up to do" (P1), setting TIC equivalent to trauma work which "isn't ours to deal with" (P1).

TIC as Everyone's Responsibility

Others viewed TIC as a topic *everyone is responsible.* The majority suggested that that therefore "everyone should attend the training" (P2,P3,P8,P10), arguing that "it'd be really helpful for us to all be at the same training and learning about the same topics so then we have that shared knowledge. 'Cause often there's like four people sometimes working with one person, so I think consistency is really helpful" (P4) and indicating a shared responsibility to know and use TIC and prevent re-traumatisation (P4). One criticized that only individuals who were already interested in TIC attended the training (P5), placing the

responsibility of using TIC on those with personal interests in the area, to which others suggested that training should be mandatory (P1,P7).

TIC as Mindset/Perspective

Many participants described TIC as a general mindset or perspective (P1), rather than specific behaviour. This included the being aware and mindful of trauma (P5), recognising potential trauma and its impact on the young person or their system (P1,P6) and how trauma should be considered within next steps of care (P5). Emphasis was given to "holding in mind" the young person and family's experience (P9,10), their story, environment and context (P5,P10). In addition, TIC included being "incredibly mindful" (P8) of potential triggers for re-traumatisation (P6,P8).

TIC as Changed Narrative / Language

TIC was experienced across participants as a *change of narrative* (P5,P8) around the young person, which included *TIC-specific language* (P2,P8) as a way of demonstrating that change of perspective and to "reframe what traumatic experience is" (P8). A TIC-narrative should de-blame and emphasise that the trauma "shouldn't have happened and wasn't their fault" (P5) and "lend itself to be more client-centred" (P8).

TIC also recognises *behaviour as a way for young people to communicate* (P1,P7) or respond to trauma (P2,P4), for example, reframing "young people who are 'naughty', 'don't follow instructions' or are 'aggressive'," to recognise "a child that's in distress" (P5), and describe behaviours as "attachment seeking, not an attention seeking" (P10), in short, using what is known about the child's experience and the system around them (P4) to understand their behaviour (P2,P4,P5,P7,P10). One pronounced that TIC also meant encouraging others to change their language away from "negative labels" and "helping the young person understand their behaviour differently" (P5).

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TIC as Specific Skills

Participants varied in their understanding of what TIC should look like in practice. Some listed *specific trauma-informed skills*, such as "looking for adverse childhood experiences… anything they felt that happened, that it had a big impact on them" (P5), with one team using a "trauma crib sheet" as "a prompt, what to ask and what to look for when going through those… tricky conversations." (P9). One emphasised the importance of consciously trying to prevent re-traumatisation by "checking out with the person what distresses them so you can make sure that it's not a trigger for them" and not unnecessarily asking people to retell their trauma (P4,P8,P9)

TIC as All-Encompassing Label of Person-Centred Care

Some participants described their TIC understanding and implementation in ways that could be construed as *standard best practice*, such as validating client's experiences (P1) normalising (P7), using empathy (P8) and offering reassurance, not blaming the child (P7), and not making assumptions (P1) but asking questions when unsure (P1). TIC was described as all-encompassing approach "putting the young person first and making sure all their needs are met" (P2).

There was a pattern of TIC-specific behaviours of *empowering clients* and being client-led (P7). This included "getting permission for beginning that conversation and… understanding what… they want to do next after sharing something like that" (P4), "giving some control… back to that child" (P5).

Barriers and Facilitators to Implementing/Using TIC

The following six themes arose from participant interviews related to barriers and facilitators to using or implementing TIC. Participants differed in what they perceived and expressed as barriers and facilitators, often based on their understanding of TIC (question 1).

Barrier: Negative Impact of Trauma on Staff

Participants voiced concerns over the *negative emotional impact of trauma on themselves* and other staff (P1,P8,P10) and the potential for it to "trigger own trauma" (P6), describing: "some days if somebody is ringing me upset, I… sometimes don't want to talk about [trauma]… I do, but I don't want to … it's a lot to take on some days" (P4). Proposed solutions included broaching this topic in trainings and team conversation, exemplified by their recent TIC training: "we spoke about… the impact of trauma on the practitioner… about stress and burnout and… ways that we deal with that feeling in our practice…it's something that we don't talk about enough, especially when we're starting to feel burnout as practitioners (P4). Others suggested utilising self-reflection (P1,P6): "if you come away from a situation like taking on some of the emotion of the person you are speaking to… I think that can be really reflective of how that person is in it as well" (P4).

Barrier: Clinicians Themselves as Barriers

While participants widely agreed that they had the ability to use TIC, some saw *themselves as barrier* to using it, noting "I don't think I'm perfect at recognising trauma" (P4), "recognising… there are limitations for myself… in how to manage [trauma]" (P1) and

seeing trauma as something complicated and complex, where “trying to implement that is always tricky, 'cause it's about kind of where you pitch things and when to do that (P1). Multiple pronounced their poor memory as a barrier to TIC (P4,P8,P9) where “it's really hard to remember specifics” (P8) from the training. Participants’ fears also impeded TIC use. For example, “people are reluctant to name things… even saying the T word in that fear” (P1), and worries about retraumatising were the “hardest thing” (P9) where “the natural urge would perhaps be to not go anywhere near [the trauma]” (P5).

Barrier: Wider Systemic Barriers

Far more than individual barriers, *systemic barriers* were highlighted across sectors as impeding TIC usage, with “workers and services being really stretched” and *“*understaffed” (P5), making TIC use “really difficult” (P5), with one explaining: “I think, pressures are so high on people within services… that sometimes the focus can be on the problem at hand and not thinking wider” (P10). *Time pressures* (P2,P4,P9) were highlighted as a major factor limiting TIC use, based on the belief that “it takes time to talk about [trauma]…I don't want to… open that box then quickly shut it and it be more damaging to our family than if I'm just keeping it shut. So I think that's always a challenge” (P4) and balancing time demands: “when you've got a really long list of people to see… I'd love to be really trauma-informed for every single person we see, but I know in reality we’re up against it.” (P5).

Facilitator: TIC Needs a Systemic Approach

Most participants emphasised that, for TIC to work, *implementation needed to be systemic,* across professionals, teams, services, agencies (P9) and “everyone around that young person” (P5), with some calling for a culture change towards becoming more trauma-informed (P8, P10). There was agreement that a joint approach across services was essential (P5, P9,P10), drawing on all resources around the young person (P9), such as parents, family, carers, school, social workers (P5) and “making sure that everyone around that child is aware

of what's happened… aware of where we are now and what the plan is moving forward, and that we're all doing the same thing" (P9), noting: "I think the biggest barrier is individuals, whether in my team or in the system, not necessarily being aware of the training" (P8) or are "at different levels of being trauma-informed" (P10).

To facilitate systemic change in services, many noted that TIC should be modelled and encouraged '*top down'* (P5,P8,P10): "if it's something that we want embedded then it has to come from the top down and it has to be reflected across all levels of the management team, through our supervision with staff and also how everybody treats each other within the team" (P5).

Facilitator: Building TIC Skills Within Teams

To facilitate shared responsibility, participants proposed *building TIC skills within their own teams* (P8) to decrease the need to refer to experts. Ideas included bringing TIC-related questions to managers meetings (P9), having trauma-informed supervision (P5), "weekly consult" or "having a "trauma-informed champion" (P8), asking questions within the team such as "have you considered trauma? How significant is that event?" (P6), and sharing and displaying TIC resources (P10).

Facilitator: Improved Attitude Towards TIC Use Through Training

Some described questioning their capabilities and skills in "opening that box" of trauma (P4). However, for multiple participants, the TIC training *increased confidence* (P1,P5) and comfort with the topic (P1), reassured and validated their existing skills and knowledge, and gave them "the language around [TIC] to evidence it and to feel confident that that's what I'm doing" (P5).

Recommendations for TIC Training Improvements

Many recommendations of how trainings can be improved were based on participants' understanding of TIC and their experienced barriers and facilitators, namely,

how barriers could be decreased through training and facilitators supported by training or existing facilitators maintained. Below, thee themes describe specific training recommendations noted by participants. Recommendations and conclusions drawn from the data by the author are summarised in the discussion (See Table 3).

Training Needs

Participants noted *specific staff groups* who didn't attend the training but would benefit from it, for example, "ensuring that manages are singing off the same song sheet as you" (P4), "clinical supervisors within the team who do the caseload and clinical supervision" (P6), and "particularly for my admin team…they have such limited training… around trying to understand and manage sometimes very difficult interactions with parents or others" (P12).

Clinicians working in specialist services were keen to receive training around their *specific client group* (P2) and "how they might present differently, like our autistic or ADHD population, if there were adaptations we'd want to make around that" (P1).

A few participants noted that that the TIC training *lacked implementation skills,* with one stating "I struggled to know what I could take from the training to implement with the wider team" (P9), while another had not used TIC since the training (P6).

Need for Repetition

Participants unanimously agreed on the *need for top-up trainings* or to "have like a check in session, maybe a couple of months later, just to see… have you had the opportunity to try anything new and how's it going?" (P9). Participants suggested "online resources… to go to independently to look at that are… clinically sound information and link to what you've learned" (P1) as well as "workbooks/sheets" (P4,P7), "infographics "(P2,P6), one noting that printouts were a "discussion point for a good week amongst all the staff" (P2). Finally,

participants suggested reminders, “newsletters” (P6,P10), “or a mailing list of any updates” (P6).

Helpful Aspects of TIC Training

Specifics of the *training format* were highlighted as helpful, especially interactive “discussion and hearing other people’s point of view” (P4) and case studies to benefit from the multidisciplinary perspectives: “if you had a teacher, a youth worker, a CAMHS worker, a statutory social worker, then me, and we're all looking at the same case study but everyone’s got different views because of their… different training” (P7).

Participants highlighted *particular content* they found helpful, such as specific metaphors, “that ‘window of tolerance’… either you're hypervigilant,…, but on the other end of the spectrum you completely shut down,” or stress visualised as “a cup being filled” (P10). Participants emphasised their new understanding of “different levels of [trauma] interventions”(P1) and “trauma not just being about traumatic experiences and formal PTSD as an entity” (P8). One particularly valued how “[the facilitator] went back to basics… and explained what trauma was, what it might look like, what being informed means” (P9).

Individual attributes of the training facilitator were highlighted as positively contributing to the training, especially the facilitator’s expertise (P1,P5), “infectious” passion (P5) and way of communicating (P2) and encouraging questions (P6).

Finally, TIC learning was facilitated by positive emotions (P9) such as *interest in TIC* (P1,P7,P8) and experiencing the training as enjoyable (P2,P4,P5,P6).

Interrelated results

All three research aims were explored within one interview and themes noted within one table as they are closely interrelated: How participants understood TIC (aim 1) shaped what they saw as facilitators or barriers to behaviour change (aim 2). For example,

participants' understanding of who is responsible for using TIC, influenced whether they noted facilitators as "increasing access to experts" or "increasing expertise within their own team." Many of the described facilitators and barriers to TIC (aim 2), could be increased or mitigated, respectively, through improved training (aim 3), for example, "belief in own capabilities" can be increased through training, and understanding of TIC (aim 1) as a "communication shift" facilitate de-blaming narratives around trauma.

Discussion

The current study aimed to improve trauma-informed care trainings by exploring participants' understanding of TIC after being trained, understand participants' experience of barriers and facilitators to using TIC, and drawing out how TIC training can be improved to aid participants' understanding and use of TIC. Themes that arose from semi-structured interviews were mapped to answer the research questions.

TIC Understanding

Participants' TIC understanding was largely in line with the existing evidence base (SAMHSA, 2014). Participants *realised* the impact of trauma on service users and highlighted how it can impact staff themselves (e.g. inducing fears and negative emotions) and described TIC as a social philosophy or mindset. Participants felt that they were able to *recognise* signs and symptoms of trauma, for example in behaviours (e.g. "the naughty child") in response to trauma and advocate for a communication shift (changed language, narrative) in *response*. Participants critiqued the lack of implementation skills in training on how to *respond*. However, they also described practicing TIC-specific skills to *respond* to trauma and to *resist re-traumatisation* such as trauma-specific questions, client empowerment, general person-centred responses and communication shift.

In line with the critical-realist analytic orientation, participants' perceptions of reality were reported and not challenged. Some participants' understanding of TIC was different to

the dominant evidence-base, for example, believing it necessary to know details of the trauma to apply TIC (P6), while TIC principles include a general 'awareness of the impact of potential trauma' (SAMHSA, 2014), or that TIC should only be done by specialists or needs extensive time, rather than being a general mindset shared by everyone, as the literature describes. A critique of TIC is that it is simply a new label for best-practice person-centred care (Berliner & Kolko, 2016) or gets misunderstood as such. This understanding was shared by some participants who defined TIC as practices common to standard best practice such as consent, empathy, validation, and safeguarding. The author recognises that this finding may be biased by her interpretation of 'best-practice' based on her Clinical Psychologist training. Future trainings should clarify the definition and boundaries of TIC so participants have a shared understanding.

Facilitators and Barriers to TIC Use

Participants highlighted specific facilitators and barriers to behaviour change. A further analysis, more fitting with framework analysis, was conducted as a potential future step to map the current findings onto an evidence-based framework of behaviour change: The COM-B Model (Michie et al., 2011). Details of this can be found in Appendix H. In line with the COM-B model (Michie et al., 2011), results showed how their *physical capabilities* to use TIC behaviour were facilitated by good training (interactive format, facilitator qualities, repetition) and knowledge of TIC-specific skills, while individuals saw their *psychological capabilities* diminished by personal shortcomings (poor memory and skills). *Reflective motivation* encouraged TIC behaviour where individuals had a strong belief in their own capabilities and felt responsibility to use TIC. However, beliefs that TIC was not within their job remit, or experiencing negative impacts of trauma work on themselves created *reflective and automatic motivations* against the use of TIC. Limited resources (understaffing, lack of time) were consistently described as limiting *physical opportunity* to use TIC. Therefore,

systemic change was requested to create *social opportunity* to use TIC. This included joint approaches of the systems around a child, a communication shift towards using TIC language and non-blaming narrative and having a shared social philosophy/mindset of TIC.

Multiple of these findings match aspects needed to implement TIC, as described in other studies, including the need for leadership 'buy in' (Weiss et al., 2017), a common language regarding TIC (Bartlett & Rushovich, 2018), more in-depth training (Choi & Seng, 2015) and training to increased confidence in TIC (Dueweke et al., 2019). Other findings match theoretical principles of TIC, such as increasing client choice and empowerment (SAMHSA, 2014).

Recommendations for TIC Training

Participants made recommendations for training improvements or noted facilitators for TIC which could be addressed through training. See Table 3 for an overview of recommendations. Recommendations are in line with evidence on effective trainings that state a need for clear aims/target skills, instructions, demonstrating/modelling and practicing skills, followed up by on-the-job training/practice with feedback (Parsons et al., 2012). They also relate to constructivist learning theory which posits that prior knowledge and understanding influences learning, and that learning is an active and interactive process (Narayan et al., 2013). Recommendations for individuals, teams or services to increase TIC were not the focus of the current study, but are noted in Appendix N: Supplemental Material 3. Future studies should examine broader intervention functions, beyond trainings, by building on the COM-B model (Michie et al., 2011).

Table 3

Recommendations to Improve TIC Training

TIC training	**Who to train:** • Ensure that all staff across hierarchies and professions are trained in TIC • Ensure that especially managers and supervisors are trained and can lead and role model TIC

	Who facilitates the training:
	• Consider the facilitators qualities. Preferred is:
	  ○ an approachable style, friendly
	  ○ knowledgeable / expert / experienced
	  ○ open to questions
	  ○ passionate / enthusiastic / interested in topic

	Training focus: • Include trainings for specialist client groups, depending on need e.g. ADHD, Intellectual Disabilities
	Training content: • Clear training aims / objectives • "Back to basics", review understanding of basic concepts • Clear definition/understanding of TIC • Clear definition/understanding of trauma • Use of metaphors e.g. "window of tolerance", "stress bucket" • Introduce TIC-language, changing narratives around trauma • Understanding that behaviour can be a way to communicate trauma
	Clarify misconceptions of TIC: • **TIC is more than standard best practice,** differentiate from other approaches • **Clarify who is responsible for using TIC** – and what different levels of support look like • Understand how TIC can be used even under time constraints • Clarify that talking about trauma does not automatically retraumatise
	Training format: • Interactive • Case studies / case discussions • Time for questions • Face to face is preferred over online • Small groups are preferred to larger ones
	Teach TIC-specific skills:

- Specific questions to ask
- Skills to empowering clients
- Make clear what implementation looks like in each specific context

Memory aids:

- Top-up sessions
- Review or reminder sessions

Training resources:

- Handouts, workbooks, worksheets, print-outs
- Online resources
- Newsletters, emails

Discuss staff wellbeing in response to trauma:

- Understand the effect trauma can have on staff
- Share reflections on impact of trauma on staff
- Teach coping skills

Build up staff confidence:

- Emphasise TIC skills they are already using
- Build on existing knowledge and skills

Strengths and Limitations

A strength of this current study is it's evidence-based, systematic approach exploring the understanding and experiences of service users (training participants) as well as the wider literature and guidelines (4Rs) to shape recommendations for improved TIC training. Results highlight how inter-related and mutually influencing the answers to TIC understanding, TIC barriers/facilitators and training improvement were, highlighting the strength of capturing them within one model. Especially in a field that offers largely descriptive research (Hanson & Lang, 2014; Reeves, 2015), this study offers an evidence-based contribution to the discourse. The qualitative approach allowed for exploration of a topic where there is not yet established consensus of the understanding of TIC by professionals using it. The methodology and questions were shaped by existing guidance and professionals with recent TIC training experience.

Key limitations must also be noted. Study participation was likely biased by self-selection through a personal interest in TIC. As is expected with qualitative research, the study cannot claim that results generalise to other settings, but may provide a starting point for improving TIC trainings. The study grouped together professionals from a wide range of services, in line with realistic training provisions. Future studies could benefit from differentiating understanding and facilitators of TIC, based on profession, experience-level and training recommendations for specific services/professionals. A further limitation is that some participants completed previous TIC training. The specific content of these trainings was not recorded, only the amount of training, which varied greatly. It is impossible to determine how much or to what extent these previous trainings influenced participants' understanding of TIC and related experience of barriers and facilitators. Findings of the current study should therefore be considered with caution.

Conclusion

In the context of increased popularity of TIC but dearth evidence on its training and implementation, the current study contributes to the evidence-base of TIC understanding, training and implementation.

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Theoretically Driven Research Project

Candidate: Hjördis Lorenz (hjordis.lorenz@hmc.ox.ac.uk)

Title: Evaluation of a Rumination Intervention for Individuals with PTSD: A Pilot Feasibility Study

Word Count: 5,263

Date: May 2023

Internal Supervisor: Prof Paul Salkovskis (paul.salkovskis@hmc.ox.ac.uk)

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Funding Statement: The study has been funded by Oxford Health NHS Foundation Trust.

Conflict of Interest: none

Ethical Standards Statement: The project was approved by the NHS Health Research Authority (Ref: Ref: 22/WM/0224). The project was conducted in line with ethical guidelines.

Clinical Trial Registration: NCT05625126

Patient Consent Statement: All participant gave informed consent before participating in the study.

Proposed Journal: Journal of Traumatic Stress

Rational for journal choice: The novelty of the current study is that it is the first of its kind to address rumination in a sample of individuals with PTSD, while other studies have focused on populations with anxiety and depression. It therefore seemed suitable to place it in a leading traumatic stress journal by the International Society of Traumatic Stress. See guidelines in Appendix Z.

Abstract

There is growing evidence that rumination contributes to the onset, maintenance, and severity of PTSD, and is conceptualised as a strategy intended to control symptoms/threat within the leading model of PTSD. However, interventions which aim to target rumination in PTSD have yet to be researched.

The study aimed to evaluate the feasibility and acceptability of a novel rumination reduction intervention for individuals with PTSD, and the feasibility of conducting a single case experimental design (SCED) as a consecutive series. The secondary aim was to provide a preliminary estimate of effectiveness of such an intervention in reducing PTSD symptoms.

Sixteen participants on a waiting list for PTSD treatment were randomly allocated to three or five weeks of baseline measures. Participants then completed an online module on coping with rumination, followed by a personalised review call, and two weeks of post-intervention measures.

Quantitative results and descriptive feedback found the intervention acceptable and feasible. However, a SCED design was not deemed feasible in this real-life context, and appeared not as acceptable to participants due to questionnaire burden. Preliminary analyses revealed a decrease in trauma-specific rumination and PTSD symptoms. The study offers an initial indication that a trauma-focused approach to rumination may be helpful. Next steps include refining the intervention based on participant feedback and re-evaluating it.

Key Words: Posttraumatic Stress Disorder; PTSD; Rumination; Repetitive Negative Thinking; Case Series

Evaluation of a Novel Rumination Intervention for Individuals with PTSD: A Pilot Feasibility Study

Rumination is defined as repetitive, self-focused, negative thinking about past experiences (e.g. Nolen-Hoeksema, 1991; Papageorgiou & Wells, 2003). The role of rumination is well established and understood in depression as predicting and maintaining low mood (Broderick & Korteland, 2004; Nolen-Hoeksema, 2000; Nolen-Hoeksema et al., 2007). Rumination functions through repetitive, passive focus on negative aspects of causes and consequences of symptoms of distress without engaging in active coping or problem solving (Nolen-Hoeksema, 1991). In recent years, rumination, has come to be seen as a transdiagnostic concept underlying and maintaining several other psychological disorders, including posttraumatic stress disorder (PTSD; Ehring & Watkins, 2008; McEvoy et al., 2010). A recent systematic review on rumination in PTSD (Moulds et al., 2020) proposed that rumination in the context of PTSD is "characterised by the same features (e.g. abstractness, repetitiveness, 'what if' questions), as rumination in other conditions such as depression." The only established difference is that depressive rumination is general (e.g. 'why do bad things always happen to me') while rumination in PTSD is often more event-focused (e.g. 'why didn't I fight back') (Birrer & Michael, 2011; Speckens et al., 2007).

Posttraumatic Stress Disorder

PTSD is a severe stress reaction that can occur after a traumatic event. It can be diagnosed after exposure to actual or threatened death, serious injury, or sexual violence (APA, 2013). The adult psychiatric morbidity survey of England (McManus, Bebbington, Jenkins, Brugha, et al., 2016) estimated that about a third (31.4%) of adults experienced at least one traumatic event in their lifetime. A significant number develop PTSD: In England, 4.4% screened positive for self-reported PTSD in the past month, young women even higher at 12.6% (McManus, Bebbington, Jenkins, & Brugha, 2016). Symptoms of PTSD are highly

distressing. They are categorised into four clusters: re-experiencing symptoms associated with the trauma, avoidance of stimuli associated with the trauma, negative alterations in mood or cognition, and alterations in arousal and reactivity (APA, 2013). Ehlers and Clark's (2000) cognitive model of persistent PTSD is one of the models that guides current understanding and evidence-based treatment for PTSD (Beierl et al., 2019; Ehlers et al., 2023). The model suggests that PTSD is maintained by a sense of current threat. This current threat stems from the nature of the trauma memory, negative appraisals of the trauma or its sequelae, and strategies intended to control threat/symptoms.

Rumination in PTSD

After a traumatic event, it is common for individuals to dwell on the event and its consequences with thoughts such as 'why did this happen to me? What if I had done something differently?' A leading cognitive model of PTSD (Ehlers & Clark, 2000) proposes that rumination may be one of the strategies intended to control threat/symptoms but inadvertently maintaining these (Ehring, Frank, et al., 2008; Mayou et al., 2002). Individuals may feel that ruminating about the event will help them understand why it happened, hoping to ascertain how a similar event could be prevented in future. However, this focus increases their sense of threat. Rumination may furthermore be an attempt to problem solve (Moulds et al., 2020), however, since rumination involves circular thinking including unanswerable questions which do not lead to any plan or action, rumination does not actually solve any problems. Over time, ruminating may become automatic and habitual. Additionally, rumination is considered a common but unhelpful strategy to attempt to cope with intrusive memories (Clohessy & Ehlers, 1999; Michael et al., 2007), for example, possibly believing that actively focusing on the memories will decrease their uncontrollable occurrence, unintendedly increases intrusive memories (Michael et al., 2007; Newby & Moulds, 2012; White & Wild, 2016). Ruminating about a traumatic event is also associated with negative

emotions such as shame, sadness and hopelessness (Clohessy & Ehlers, 1999; Michael et al., 2007). One study found that rumination fully accounted for the association between emotion regulation difficulties and PTSD severity (Pugach et al., 2020). Rumination may also maintain negative appraisals about the trauma such as 'the world is unsafe' in a similar way to cognitive avoidance which interferes with the formation of updated, more complete trauma memories (Ehlers & Clark, 2000). Studies have shown that rumination increases the risk of PTSD (Wild et al., 2016), and is a strong predictor of PTSD symptoms after traumatic events (Kleim et al., 2007; Murray et al., 2002; Schumm et al., 2022). In summary, in line with the cognitive model of PTSD, rumination is suggested to maintain PTSD by blocking changes to the trauma memory, maintaining negative appraisals, and contributing to unhelpful strategies intended to control threat/symptoms (Moulds et al., 2020).

Rumination Interventions for PTSD

Rumination has successfully been targeted in depression. Watkins and colleagues established rumination-focused CBT for depression which showed good results (Hvenegaard et al., 2020; Watkins et al., 2007, 2011), while other rumination interventions successfully reduced symptom levels of anxiety and depression (Topper et al., 2017). Although researchers agree on the negative impact of rumination in PTSD, and although rumination may be covered in general evidence-based therapy for PTSD, such as trauma-focused CBT (Schumm et al., 2022; Wisco et al., 2013), studies have yet to specifically evaluated strategies to decrease rumination in individuals with PTSD. It is to be hoped that teaching individuals with PTSD coping skills for rumination could decrease rumination and thereby help alleviate PTSD symptom severity (impacting on intrusive memories, unhelpful appraisals, and negative emotions).

The current study aimed to build on existing interventions for depressive rumination to conduct a preliminary evaluation of a novel rumination intervention for individuals with

PTSD. It employs an online format to increase access and scalability. Online delivery can decrease geographical barriers, time constraints, and thresholds to engaging in help, while maintaining high fidelity at low cost (Andersson et al., 2019; Arnberg et al., 2014; Gega et al., 2022).

Research Questions

Primary: Feasibility and Acceptability

1. Is the rumination intervention feasible and acceptable for participants?
2. Does it appear feasible to evaluate the rumination intervention within a real-world PTSD population using a single-case experimental design?

Secondary: Preliminary Effectiveness

3. Does the rumination intervention reduce PTSD-related rumination, specifically does it decrease a) rumination in response to intrusive memories *(primary outcome)* b) rumination in response to a distressing event/trauma, and c) reduce the time spent ruminating? It is hypothesised that there will be no change in scores during the baseline period and a decrease in scores from baseline to follow-up.
4. Does the rumination intervention reduce PTSD symptom severity in individuals with PTSD? No change at baseline and a decrease from baseline to follow-up is hypothesised.
5. Does the rumination intervention reduce depressive symptom severity in individuals with PTSD? A decrease from baseline to follow-up is hypothesised.

Method

Participants

Participants were adults with a provisional primary diagnosis of PTSD, currently on the waitlist for individual PTSD treatment in an NHS Improving Access to Psychological

Therapies (IAPT) Service. Table 1 shows demographic details. Participants' ages ranged from 20 to 62 years. They reported a wide range of traumatic events from physical and sexual assault, road traffic accidents, experience of actual or threatened death, war or undisclosed. Individuals had been on the waitlist for 2 weeks-12 months.

Table 1
Participant Details

ID	Participant details
3-week baseline	
102	*Trauma:* Healthcare worker occupational trauma
104	*Trauma:* War trauma
108	*Trauma:* Multiple life-threatening physical health *Context:* Extensive previous therapy for PTSD
110	*Trauma:* Family member's life-threatening physical health *Context:* Previous therapy for PTSD
114	*Trauma:* Road traffic accident (RTA)
115	*Trauma:* Interpersonal violence involving sexual abuse
117	*Trauma:* Trauma: Child's life-threatening physical health *Context:* Previous therapy, not for PTSD
123	*Trauma:* Multiple events, RTA, family bereavement, childhood trauma
5-week baseline	
103	*Trauma:* Family bereavement, death by suicide
105	*Trauma:* Childhood trauma *Context:* Previous therapy for PTSD
106	*Trauma:* Interpersonal violence involving sexual *Context:* Adverse event, not study-related, prior to week 3.
109	*Trauma:* Physical violence *Context:* Previous therapy for PTSD (CBT)
112	*Trauma:* Not disclosed
116	*Trauma:* Life-threatening physical health
119	*Trauma:* Family bereavement, death by suicide *Context:* Adverse event, not study-related, week prior to module completion
121	*Trauma:* Physical and emotional abuse

Sample size

The current study aimed for a sample size of 14 participants. As this study evaluated the feasibility of a SCED in this population, the sample size was based on recommendations for case series. A review of 586 case series showed a mean of 57.2 cases and a median of 7, where the median is more representative of a sample with significant outliers (Abu-Zidan et al., 2013). Therefore, considering two different baseline groups, 7x2=14 participants were

estimated. Similarly, N=14 is in line with samples in a similar rumination population (e.g. Watkins et al., 2007). Estimating a 20% dropout, as is common in PTSD research (Bradley et al., 2005), the study aimed to recruit 2-3 additional participants.

Table 1

Demographic characteristics of all analysed participants (N=16)

Age: *M (SD)*	42.31 (15.75)
Gender Number (%)	
Female	11 (68.75)
Male	4 (25.00)
Other	1 (6.25)
Ethnicity Number (%)	
White British	11 (68.75)
White and Asian	2 (12.5)
Another White background	1 (6.25)
White & Caribbean	1 (6.25)
Indian	1 (6.25)
Have you been diagnosed with a mental health disorder? Number (%)	
No	8 (50.00)
Yes	8 (50.00)
Yes, PTSD*	3 (18.75)
Yes, depression*	6 (37.5)
Yes, anxiety*	5 (31.25)
Have you had any previous treatment for PTSD? Number (%)	
Yes	4 (25.00)
No	12 (75.00)
IAPT service / NHS trust	
Healthy Minds, Oxford Health NHS Foundation Trust (n)	8
Talking Therapies, Berkshire Healthcare NHS Foundation Trust (n)	8
Months on waitlist (at screening) *M (SD)*	2.57 (3.53)
Months on waitlist Healthy Minds M (SD)	4.69 (4.17)
Months on waitlist Talking Therapies M (SD)	0.65 (0.23)

*Individuals could choose whether to disclose and could note multiple diagnoses

Measures

See Table 2 for a description of included outcome measures. Full measures can be found in Appendix U.

Table 2

Overview of Included Outcome Measures

Demographic questions	Age, gender, ethnicity, previous mental health diagnosis, previous PTSD treatment, IAPT service, time on waitlist was collected.
Rumination measures	*Primary measure:* The ***Response to Intrusion Questionnaire*** **(RIQ**; Clohessy & Ehlers, 1999; Murray et al., 2002; Steil & Ehlers, 2000) is a 19-item self-report measure which examines responses to intrusive memories (same version used as in Beierl, Böllinghaus, Clark, Glucksman, & Ehlers, 2019). For the current study, only the 6-item rumination subscale recommended on the Oxford Centre for Anxiety Disorder and Trauma website, who developed the measure. It has demonstrated adequate reliability and validity with internal consistency between α=.80-.86 studies (Beierl et al., 2019; Ehring, Ehlers, et al., 2008; Kleim et al., 2007). For the current study, "high rumination" for inclusion criteria was defined as individuals marking 2 (often) or 3 (always) on any of the 6 items. ***Repetitive Thinking Questionnaire*** (RTQ; Mahoney et al., 2012; McEvoy et al., 2010), is a transdiagnostic measure of repetitive negative thinking after a distressing event. Items are rated along a 5-point scale: Not at all true (1), Somewhat true (3), or Very true (5). It showed good internal consistency (α=.72–.93), convergent and predictive validity (McEvoy et al., 2010). For the current study, the 10-item short version was used **(RTQ-10; Mahoney et al., 2012)**., 2012) which highly correlated with the full scale (r=.95, p<.001). In agreement with the author (Michelle Moulds, personal communication, 2022) the instructions were changed from "after the event" to "in the past week" to capture changes in thinking. A one-item question assessed **time spent ruminating** per week (estimated minutes/day)
PTSD measure	***PTSD Scale for DSM-5*** (**PCL-5;** Blevins et al., 2015). The PCL-5 is a 20-item measure of symptoms corresponding to the DSM-5 PTSD criteria (American Psychiatric Association, 2013). Psychometric evaluation of the PCL-5 showed strong internal consistency (α=.94), and test-retest reliability (r=.82; Blevins et al., 2015). Symptoms are rated on a scale from 0=*not at all* to 4=*extremely,* with higher scores indicting greater PTSD symptoms. A total score of 33 or above has been recommended as the preliminary clinical cut-off and formed the current study's screening cut-off.
Depression measure	***Patient Health Questionnaire*** (**PHQ-9**; Kroenke et al., 2001). The PHQ-9 is a 9-item self-report questionnaire based on DSM-IV (American Psychiatric Association, 1994) criteria for depression. Scores range from 0=*not at all* to 3=*nearly every day*. Kroenke and team reported good internal reliability (α=.89) and test-retest reliability with a kappa of .84 after 48 hours.
Feasibility and acceptability measures	A one-item **question on adherence (**using the learned rumination techniques) post-intervention was asked, in line with Bowen and colleagues' (Bowen et al., 2009) recommendation to assess actual use to determine acceptability within a feasibility assessment. Questions on **feasibility and acceptability** based on examples by other authors (March et al., 2018; Miner et al., 2016) and in line with recommendations (Bowen et al., 2009).
Exit interview (optional)	An optional exit interview asked about reasons and hesitations to joining, feedback on the questionnaire, module, review call, helpful and unhelpful parts of the study.

Design

The study employs a pilot-design to assess preliminary feasibility and acceptability of a novel intervention in a clinical context. To test whether a single case experimental design could be a feasible, the study also used a *condensed* concurrent multiple baseline A-B design (Barlow et al., 2009; Kazdin, 2010; Morley, 2017). Multiple baselines offer some control by staggering the introduction of the intervention, thereby controlling for measurement reactivity. This is particularly relevant when studying PTSD where outcome measures could trigger symptoms, thereby increasing scores, and where, on the other hand, natural recovery is common (Rosellini et al., 2018). For the evaluation of preliminary effectiveness, a within-subjects design was used.

Involvement of Individuals with Lived Experience

Individual focus interviews were completed with two individuals with lived experience of rumination and PTSD. Participants received £15 reimbursement. They were of diverse genders and ethnicities (Bangladeshi; White British) and aged between 25-55. Based on their feedback, wording and layout of the Participant Information, questionnaires, reminders, and the online intervention were changed to increase sensitivity, understanding and engagement.

Intervention development

The rumination intervention consisted of a one-off 60-90 minute online module focused on reducing event-related rumination and a 30-60-minute telephone review of the module. This format of online plus telephone call is in line with current IAPT guided self-help interventions which have been established for most anxiety disorders but not PTSD. The intervention was based on the current evidence-base for rumination interventions. It uses cognitive behavioural therapy (CBT) techniques adapted for trauma-focused rumination (OxCADAT, 2022) including psychoeducation, self-monitoring, recognising warning signs

for rumination and practicing alternative strategies to these cues, concrete/practical thinking, behavioural activation adapted for reclaiming life after trauma, and self-compassion to reduce rumination. See Table 3 for a content overview. It included interactive exercises, video role plays (OxCADAT, 2022), audio exercises, lived experience testimony, and key takeaways. All written content was also available as audio recording. The module was reviewed by a leading expert on rumination-focused CBT (Prof Edward Watkins), the supervising Clinical Psychologists (JW & PS), and an individual with lived experience of PTSD and rumination (male, 20s, Bangladeshi). See the module in Appendix T.

Table 3

Rumination Intervention Content and Evidence-base

Part	Content		Evidence-base for CBT technique
Part A	**What is dwelling?**		
		Psychoeducation Distinguishing between intrusive memories and dwelling Common reasons for dwelling	(Joubert et al., 2021; McDermott & Cougle, 2021)
Part B	**Why is dwelling unhelpful?**		
		Discovering the effects of dwelling Advantages and disadvantages of dwelling	(Joubert et al., 2021; Newby et al., 2014)
Part C	**How to interrupt the cycle of dwelling**		
	Skill 1	**Spot and label dwelling** *(Common signs of dwelling; externalising)*	
	Skill 2	**"Why" versus "How" thinking** *(concrete vs abstract thinking)*	(Watkins et al., 2009, 2012; White & Wild, 2016)
	Skill 3	**Reminders of the here and now** *(grounding in response to dwelling)*	(Joubert et al., 2021)
	Skill 4	**Creating dwelling-free zones & times**	(Borkovec et al., 1983; Newby et al., 2014; Wahlund et al., 2022)
	Skill 5	**Rebuilding life activities** *(reclaiming life activities)*	(Cook et al., 2019; Kladnistki et al., 2022; Rogiers et al., 2022; Watkins et al., 2011)
	Skill 6	**Testing our predictions through behavioural experiments**	(Wahlund et al., 2022)
	Skill 7	**Extending kindness to ourselves** *(self-compassion in response to dwelling)*	(Frostadottir & Dorjee, 2019)
Part D	**Prevent dwelling**		
		Spot triggers for dwelling IF-THEN plans	(Cook et al., 2019; Joubert et al., 2021; Topper et al., 2017; Umegaki et al., 2021),
Part E	**Summary**		
		Lived experience testimony Summary of coping skills	

Note: Wording represents the wording used in the module. Terms were changed in response to feedback received from individuals with lived experience of what individuals were familiar or more comfortable with e.g. rumination = dwelling; grounding='here and now'; reclaiming life activities = rebuilding life activities; self-compassion = kindness to ourselves.

Procedure

Ethics approval was granted by Health and Care Research Wales (Ref:22/WM/0224), sponsorship was provided by the University of Oxford, and Research and Development approval granted by the participating sites, see Appendices O-Q. The study was pre-registered at ClinicalTrials.gov (ref:NCT05625126).

Recruitment

Participants were recruited between August 2022 and January 2023 from two IAPT services. All eligible individuals on the waitlist for PTSD treatment were contacted by practitioners of the respective sites and, if given consent, were contacted by the researchers and invited to participate. All individuals reviewed the Participant Information, provided informed consent (Appendix S), and completed screening (PCL-5 and RIQ) and demographic questionnaires. See Table 4 for inclusion/exclusion criteria and the CONSORT diagram in Figure 1.

Table 4

Inclusion and Exclusion Criteria

Inclusion Criteria:

- Willing and able to provide informed consent
- Willing and able to complete an online measures, online training and a phone or video call (this includes access to internet and to a computer, laptop, tablet or phone).
- Aged 18-65 years
- English speakers and ability to read and write in English.
- Availability to participate in up to 9 weeks of this study (e.g. not planning to move out of area, upcoming surgery, birth).
- Suspected primary difficulty of PTSD
- Currently on the IAPT waitlist for Step 3 individual PTSD treatment with estimated 9+ weeks left on the waitlist before starting PTSD treatment.
- **Screening:** High rumination: scoring "often" (2) or "always" (3) on any item of the RIQ
- **Screening:** Above cut-off for PTSD symptoms: Scoring 33 or above on the PCL-5 scores

Exclusion Criteria:

- If it appears that a different disorder/mental health condition (not PTSD) is primary (e.g. depression, substance use).
- Any other significant disease or disorder which, in the opinion of the Investigator, may either put the participants at risk because of participation in the trial, or may influence the result of the trial, or the participant's ability to participate in the trial.
- Concurrent one-on-one treatment for PTSD

Note: PCL RIQ=Response to Intrusion Questionnaire (Clohessy & Ehlers, 1999; Murray et al., 2002; Steil & Ehlers, 2000); PCL-5=PTSD Checklist DSM-5 (Blevins et al., 2015).

Randomisation and Study Flow

Participants were randomised, stratified by IAPT site, using *Qualtrics*, to complete either 3 or 5 weeks of baseline measures. This is based on recommendations of a minimum of 3 baseline points necessary to establish experimental control (Barlow et al., 2009; Kazdin, 2010; Kratochwill et al., 2010) and was chosen to minimise questionnaire burden and undue distress through trauma-reminders triggered by questionnaires. A condensed follow-up (only 2 timepoints) was chosen due to practical limitations: Participants on the waitlist and were due to start treatment after the study which took priority over research participation. To maintain integrity of the data, follow-up data should not overlap with treatment start. The research timeline was therefore not extended. Participants received £10 as thank you for their time. Where relevant, risk was assessed by the lead researcher and managed by the respective IAPT service. See Figure 1 for participant flow and Figure 2 for study flow.

Data Analysis

Screening and demographic data were collected verbally and recorded in Excel. The outcome measures and online module were completed using Qualtrics, anonymised, and analysed in SPSS version 29 (IBM Corp., 2017).

Means and standard deviations for measures of adherence, feasibility and acceptability were summarised in a table. To test the feasibility of a SCED, initial Tau-U analysis (Brossart et al., 2018; Parker et al., 2011), a nonparametric rank order correlation statistic, was used. Specifically, within-phase trend and across-phase differences were examined to gain useful descriptive and inferential insights about the data. Composite scores combined all 16 participants into a single weighted average, which were used to compare phase A (baseline) to phase B (follow-up), while controlling for phase A trends if present. An online Tau-U calculator (Vannest et al., 2016) was used. A limitation of the Tau-U analysis is that it has no regard for phase length (Parker et al., 2011). Short phases (e.g. 2 follow-up

datapoints) allow little credibility in individual Tau-U results. Therefore, individual participant analysis were not conducted (these would constitute a future full SCED). See Appendix V for a more detailed description of Tau-U, and Appendix W for plotted data and description of visual inspection (Barlow & Hersen, 1984; Morley, 2017).

To test the preliminary effects of the intervention on rumination and PTSD, paired-sample t-tests were used to compare first (week 1) to last baseline (week 3 or 5), and last baseline to last follow-up. A Bonferroni correction to adjust for multiple tests was not deemed necessary as there was only one primary outcome measure (RIQ). Since depression was a secondary measure, outcomes were only collected at the start (baseline week 1) and end (last follow-up) of the study. Paired-sample t-tests were used to compare pre-post scores.

Figure 1
CONSORT diagram: Participant Flow

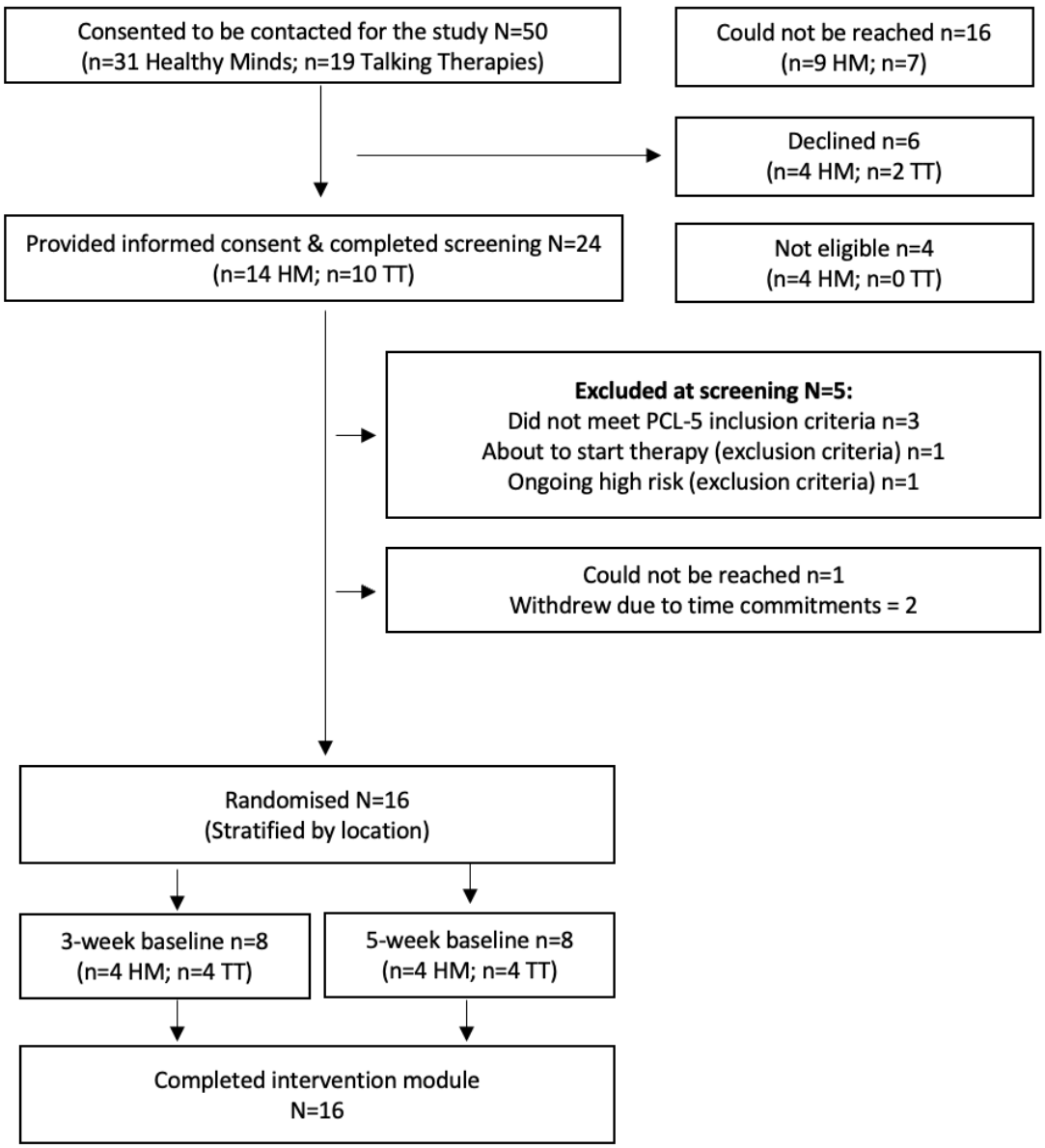
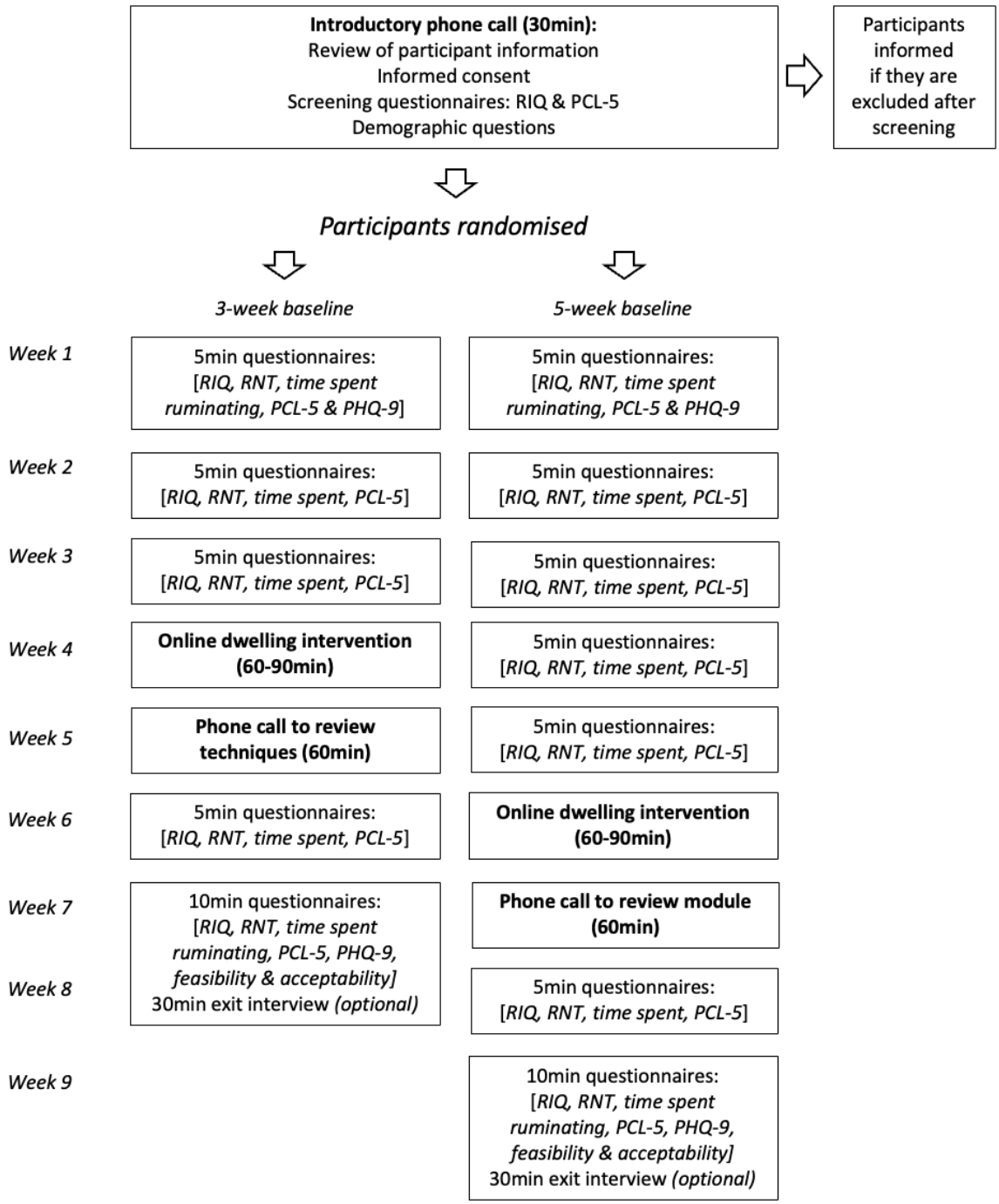


Figure 2
Study Flow



Note: RIQ=Response to Intrusion Questionnaire (Clohessy & Ehlers, 1999; Murray et al., 2002; Steil & Ehlers, 2000) ; PCL-5=PTSD Checklist DSM-5 (Blevins et al., 2015); RNT=Repetitive Negative Thinking Questionnaire (Mahoney et al., 2012); time spent = Question on time spent ruminating (hrs/day); PHQ-9=Patient Health Questionnaire (Kroenke et al., 2001).

Results

All participants completed the intervention and all outcome measures. There was no drop-out or missing data.

Primary Aim: Feasibility and Acceptability

On average, participants stated that they found the module very helpful (*M*=8, *SD*=2.34) and relevant (*M*=8.25, *SD*=2.18) on a scale of 0=not at all to 10=very much. At week 2 post-intervention, most participants stated using the skills learned in the module "often" or "always" (*M*=2.81, *SD*=.66) on a scale from 0=not at all to 3=always. Overall, they stated that they found the skills helpful in dealing with rumination (*M*=7.31, *SD*=2.06), the online module helpful (*M*=7.75, *SD*=2.23), the review phone call very helpful (*M*=8.63, *SD*=1.67), and the learned skills easy to apply (*M*=7.31, *SD*=1.81), all on a scale of 0=not at all to 10=extremely. Most stated that they would (yes) or maybe keep using the skills in the future (*M*=1.19, *SD*=.54) on scale of 1=yes, 2=maybe, 3=no.

Based on written feedback and four exit interviews, it similarly appears that the intervention was feasible and acceptable. The online format was consistently positively received, especially the options of using laptops or mobile phones. However, for four individuals (25% of the sample) the online format did not appear acceptable. Instead, they were guided through the module via telephone call (see 'Adaptations' section below for details). Feedback on the online module varied between 'highly positive, novel and easy to understand', and 'too simple/already familiar'. Individuals expressed that they valued diverse representation in the module's videos/pictures. Multiple individuals noted their PTSD-related difficulties with memory and concentration impacting their understanding of the study and intervention, but praised the added audio-recordings for all module content and written recourses. Skills learned were described as helpful and useful. The coping tools highlighted as most useful were identifying/naming dwelling, grounding to disengage from dwelling, and

compassionate self-talk in response to dwelling. Participants indicated the review call as especially important in helping them adapt coping skills to their personal circumstances, and the value of the researcher's non-judgemental, compassionate approach. See Appendix X for participants' written feedback on feasibility and acceptability. Quotes from exit interviews can be found in Appendix Y.

Feasibility of a Single-Case Experimental Design

Tau-U analysis of composite scores for all 16 participants revealed a significant shift from phase A to B on all measures: RIQ (p<.01), RTQ-10 (p=.02), Time Spent Ruminating (p=.02), and PCL-5 (p<.01). When combining individuals by baseline group (3 vs 5-week baseline), the 3-week baselines showed a significant phase shift on all measures, while the 5-week baselines only demonstrates a significant shift on the RIQ. See Appendix W for graphs.

Based on written feedback and four exit interviews (Appendices X and Y), the format of a case series created some difficulties. Individuals reported that the frequent (weekly) questionnaires triggered PTSD symptoms and increased intrusive memories, leading, for some, to an increase in time spent ruminating. The real-world service context meant that the extensive time needed for baseline and follow-up of a case series was not viable, so only 2 follow-up timepoints were included.

Secondary Aim: Preliminary Effectiveness

Paired sample t-tests revealed no significant changes from first to last baseline on any of the outcome measures. By contrast, paired-sample t-tests revealed a significant decrease in response to intrusions (RIQ; *primary outcome*) from last baseline (M=12.19, SD=4.71) to last follow-up (M=10.31, SD=5.07), t(15)=2.825, p=.013. Similarly, PTSD (PCL-5) significantly decreased from pre (M=56.69, SD=13.53), to post (M=47.44, SD=15.82), t(15) = 2.71, p= .016. The decreases in RNT (PTQ-10; p=.179), time spent ruminating (p=.091), and depression (PHQ-9; p=.145) were not significant. See Table 5 for results.

Table 5
Paired-sample t-test Results for all Outcome Measures

	Baseline				Pre-post Intervention			
Outcome Measure	First baseline *M* (*SD*)	Last baseline *M* (*SD*)	t-test	*p*	Last baseline *M* (*SD*)	Last follow-up *M* (*SD*)	t-test	*p*
RIQ	13.25 (4.70)	12.19 (4.71)	*t*(15)=1.473	0.162	12.19 (4.71)	10.31 (5.07)	*t*(15)=2.825	0.013
RNT	37.06 (7.63)	36.56 (9.67)	*t*(15)=.260	0.799	36.56 (9.67)	34.38 (8.51)	*t*(15)=1.540	0.144
Time Spent	745.56 (1051.86)	652.81 (1156.18)	*t*(15)=.479	0.639	652.81 (1156.18)	265.31 (411.23)	*t*(15)=1.545	0.143
PCL-5	56.69 (13.53)	54.31 (15.32)	*t*(15)=.682	0.505	54.31 (15.32)	47.44 (15.82)	*t*(15)=5.679	<.001
PHQ-9	17.31 (6.28)					15.06 (4.84)	*t*(15)=1.539	0.145

Note: RIQ=Response to Intrusion Questionnaire (Clohessy & Ehlers, 1999; Murray et al., 2002; Steil & Ehlers, 2000); RTQ-10=Repetitive Thinking Questionnaire-Short Form (Mahoney et al., 2012; McEvoy et al., 2010), Time Spent=Time Spent Ruminating/week (in minutes); PCL-5=PTSD Checklist DSM-5 (Blevins et al., 2015); PHQ-9=Patient Health Questionnaire (Kroenke et al., 2001). *M*=mean; *SD*=standard deviation.

Adaptations

Four participants completed the module verbally with the researcher instead of online. One felt overwhelmed by the module due to co-morbid depression, two stated being too busy at work to find time, one described anger-management difficulties and dyslexia-related frustrations. Four completed the post-intervention questionnaire delayed (due to hospital admission or holidays). Three participants started therapy during the intervention-week. With consent, the therapy session content was reviewed with each participant. It was determined that sessions did not address rumination or direct PTSD symptoms, but focused on assessment and grounding work. Data from these participants was therefore not excluded from analysis.

Discussion

The aim of the current study was to conduct a preliminary evaluation of the feasibility and acceptability of delivering a novel rumination intervention for individuals with PTSD.

The majority of participants found the intervention was to be feasible and acceptable, while for a minority (four participants) the *content* appeared acceptable but not the online *format*. The study also explored the feasibility of conducting a single-case experimental design (SCED). The real-world setting did not offer a feasible context for this design, and descriptive feedback revealed that the PTSD population did not find the frequency of measures needed for a case series acceptable. The secondary aim was to evaluate the *preliminary* effects of the intervention on rumination, PTSD and depressive symptoms. There was evidence of overall effectiveness in two respects: Tau-U composite scores showed a decrease in scores from baseline to follow-up phase on all measures, while paired-sample t-tests showed a decrease on PTSD-specific measures from baseline to follow-up. Specifically, t-test results revealed a significant decrease in rumination in response to intrusive trauma memories and in PTSD symptoms, but no significant decrease in generic repetitive negative thinking after a trauma, time spent ruminating, or depression.

Link to Previous Literature

The module was reported as very helpful and relevant. Participants reported practicing the skills learnt in the module, showing good adherence. Participants found the CBT skills helpful in dealing with rumination and easy to apply. This is in line with online interventions of CBT for anxiety and depression which were deemed feasible and acceptable (Păsărelu et al., 2017; Przeworski & Newman, 2006; Reger & Gahm, 2009; Spek et al., 2007).

The online format appeared feasible and accessible for the majority of participants, and multiple individuals praised the easy access via mobile phone and laptop. The coping skills training was set at an appropriate level for most participants, was easy to understand and engage with online. The current findings were thereby consistent with reviews which found high levels of feasibility and acceptability of online therapeutic interventions

(Andersson & Titov, 2014; Lamb et al., 2019). The therapeutic 'review call' appeared to be an essential part of the intervention, rated most highly (quantitatively) and emphasised (qualitatively) as highly beneficial and preventing at least one drop-out. This is in line with reviews showing regular support during online interventions to increase effectiveness and adherence (Dahlin et al., 2022). However, for four participants (25%), the online format did not appear acceptable or feasible due to dyslexia or mental health (e.g. co-morbid depression) and the intervention content was communicated via telephone instead. This has implications for the conclusions that can be drawn regarding acceptability. It appears that, overall, the *content* of the intervention was acceptable to all, while the format was better suited for individuals without co-morbid learning difficulties or significant additional mental health concerns.

Results in terms of outcome measures suggest that the intervention may have merit overall, especially in addressing trauma-specific rumination and PTSD symptoms. This is in line with a review showing CBT as effective in reducing rumination in anxiety and depression (Querstret & Cropley, 2013). The current results are similar to recent findings which show that targeting PTSD maintenance factors even without exposure to trauma memories can decrease PTSD symptom severity (Thew et al., 2023). PTSD has a high rate of natural recovery (Rosellini et al., 2018) which could account for the decrease in scores. However, this is unlikely to explain the current results, as the Tau-U analysis of composite scores for each baseline length (3 and 5 weeks) showed better results for the 3-week baseline. If decrease in scores were primarily due to natural recovery, the opposite would be expected. It must be noted that, while PTSD symptoms decreased, they remained above cut-off for PTSD (Blevins et al., 2015). This is expected as the intervention did not aim or claim to treat PTSD fully.

Limitations

Results should be considered with caution due to a number of limitations. Pilot studies inherently have small samples sizes which are underpowered and carry a greater risk of bias in terms of outcome. The one-item question on ‘time spent ruminating’ showed extreme variability between and within participants with participants expressing difficulty estimating the minutes spent ruminating per week. It may therefore be more user-friendly to set this question as a Likert scale from ‘not at all’ to ‘all the time’. There is also a need for better trauma-focused rumination measures. The RIQ focuses on responses to intrusions, not all of trauma-specific rumination, while the RTQ-10 may be too broad. The RIQ further includes an item ("do you dwell on what you could have done differently") which, although describing a common trauma response, may not always be appropriate as it may be misunderstood as blaming individuals for their trauma.

Theoretical Implications

That PTSD symptom severity significantly decreased even though only rumination was targeted is consistent with Ehlers’s and Clark’s (2000) model which proposes that rumination is a specific maintaining factor in PTSD. Several mechanisms are hypothesised through which rumination may impact PTSD symptoms. These include increased intrusive memories, maintenance of negative appraisals, and rumination as a form of cognitive avoidance which interferes with the formation of updated trauma memories (Michael et al., 2007; Moulds et al., 2020). Furthermore, the primary outcome of rumination in response to intrusions appeared the strongest and most consistent factor to be impacted by the intervention, across analyses. This supports the theoretical understanding that rumination is closely associated with the hallmark PTSD symptom of intrusive memories (Michael et al., 2007; Newby & Moulds, 2012).

Research Implications

The current study provided only initial evaluation of this novel intervention. A SCED design is not recommended as a next step. Although initial analyses were promising, the set-up required for a SCED creates disproportionate questionnaire burden which may increase rumination thus influence the results. Furthermore, the long follow-up needed for a SCED does not appear feasible in the context of real-world waitlists. Instead, a new pilot study would be recommended, based on learning from this study. For this, quantitative data, participant feedback and exit interviews should be taken into account to refine the intervention. For example, the impact of PTSD on memory and concentration should be taken into account by dividing learning into smaller sections, increasing repetition, offering different formats of learning, and even more interactive elements. The one-on-one review call, audio recording of all written materials, summary handouts, and the person-centred approach of the researcher should remain.

Based on feedback and the adaptations that were necessary (telephone versus online module), it appears that the intervention was better suited for some people than others. Specifically, individuals with co-morbid conditions (e.g. depression) appeared to struggle more with the online format and described feeling overwhelmed. The intervention also appeared more useful for individuals who had never had CBT before. Individuals with previous CBT experience described the intervention as too simple but nevertheless acceptable repetition offering novel perspectives. Future studies could therefore target specific sub-groups of individuals with PTSD. Alternatively, the current intervention could be combined with other trauma-specific tools for individuals who previously had generic CBT, such as tools on coping with intrusive memories used by Thew and colleagues (2023), or with a greater focus on reclaiming life activities which could benefit individuals with comorbid depression.

Clinical Implications

The preliminary evidence that a trauma-focused rumination intervention has a stronger impact on trauma-specific rumination (RIQ) than on generic repetitive negative thinking, may indicate that clinical trauma-focus in interventions matters, even though rumination is a transdiagnostic maintenance factor, and that it should be specifically targeted in clinical practice. If future studies support its effectiveness, the intervention could be helpful for individuals on the waitlist, or could be included in other PTSD online interventions which currently don't address coping with rumination, such as internet-delivered cognitive therapy for PTSD (Thew et al., 2023). The NHS is moving towards integrating more online interventions and has already done so on a large scale for anxiety and depressions within IAPT Services. Online PTSD interventions are still being evaluated, with promising results (Ehlers et al., 2023).

Conclusion

The current study offers initial support for the feasibility and acceptability of a therapist-supported online intervention to decrease trauma-specific rumination and PTSD symptom severity in individuals with PTSD. Preliminary results are promising, however further research is needed to evaluate its effectiveness building on this pilot. Future research may enable progression towards an accessible, scalable online intervention to decrease a significant risk and maintenance factor of PTSD.

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Executive Summary of Theoretically Driven Research Project

Background and Aims

After a traumatic event, it is common for people to dwell on what happened and ask themselves questions such as 'why did this happen to me? What if had done something differently?' Dwelling is a common but unhelpful response after trauma. People may use dwelling in an attempt to try to make sense of the event or problem solve, but it often has the unintended consequence of making the problem worse.

After a traumatic event, some people develop post-traumatic stress disorder, which is a very distressing psychological stress reaction. Symptoms include unwanted, intrusive memories (which can feel like re-living the event), avoidance of people, places or things that remind of the trauma, hypervigilance (being jumpy or easily startled, trouble concentrating and sleeping) and changes in mood (such as feeling low or numb). Researchers have found out that dwelling can keep these PTSD symptoms going. For example, dwelling can trigger unwanted memories to pop into our mind, it can stop us from changing beliefs about the world such as 'the world is unsafe' and keep us feeling low. While there are lots of good interventions that address dwelling in depression, none have been developed specifically for PTSD yet.

The current research study developed and evaluated an intervention to decrease dwelling on trauma, for individuals with a preliminary problem identification of PTSD. We wanted to find out whether participants found it feasible (e.g. possible to learn and then apply coping techniques) and acceptable (e.g. did they find it possible to engage with and helpful/useful). We also wanted to see whether a specific research format (called single case experimental design), where each case (person) is looked at individually, would make sense in this setting. As a secondary goal, we wanted to explore whether the intervention could

actually reduce dwelling, symptoms of PTSD, and symptoms of depression. The intervention was completely online/remote so more people would have access to it. For example, if participants had shift-work, needed child-care, or couldn't leave the house, they could complete it from home, at a time that suited them.

How this Research was Conducted

Because this was the first time the intervention was tested, we chose a design that only looked at a small group of people (a pilot study). Participants were invited to participate, told the details of the study, and gave informed consent. Individuals could only participate if it seemed likely that they had PTSD, if dwelling was a problem for them (showed high dwelling scores), were adults, had internet access, were literate, and currently on the waitlist for PTSD treatment at one of the local NHS services we worked with. Sixteen participants fit these criteria and were randomly allocated to complete either three or five weeks of weekly questionnaires. Participants then completed a 90-minute-long online module which taught them about what dwelling is, why people dwell after trauma, and ways to cope with it. All coping skills were based on the currently highest research standards and knowledge of cognitive behaviour therapy, which has shown to be very effective in other treatments. The online module included written and audio exercises, role played videos of therapy sessions, a video testimony someone with lived experience of PTSD, and a downloadable summary. Participants could also listen to the audio of all written text if they preferred. Next, all participants received a telephone call from the researcher to review the coping skills and think together how to adapt them to their specific context, for example, how to apply coping skills while sitting at a desk at work, or how to use them when struggling to fall asleep. Participants then filled out weekly questionnaires for two more weeks. The last one also asked them how they found the study, what they found helpful, or what could be improved.

All sixteen participants completed the study. Participants were an average of 42 years old, most were female (69%) and White British (69%), and had been on the waitlist for PTSD treatment for an average of 2.6 months. Half of the participants had been formally diagnosed with a mental health disorder (19% with PTSD) and a quarter had had previous PTSD treatment.

Findings

Participants gave positive feedback and stated that they found the intervention, and especially the review call, very helpful and relevant, and the coping skills easy to use. From our data, we concluded that the intervention appeared feasible and acceptable. Using a single case experimental design, where participants have to complete weekly questionnaires for a long time, did not seem like a good fit for this research.

Since we only had a small group of participants, we can only draw preliminary conclusions from the results. We found that outcomes significantly changed from the weeks before the intervention (baseline) to the weeks after the intervention. The change from before the intervention to after seemed particularly strong (was significant) for trauma-specific dwelling (dwelling in response to unwanted trauma memories) and PTSD symptoms. The study also had some limitations, for example, one question on how many minutes people spend dwelling each week could be improved to make it easier to answer.

Conclusions and Implications

Future research should build on the questionnaire outcomes and feedback from this study to refine and improve the intervention and who it might best be suited for. We hope that this research brings us a step closer towards understanding how we can help individuals who dwell after a traumatic event.

Connecting Reflective Narrative

This section contains reflections about the process of completing these research projects, including challenges and lessons learned.

Personal

Personal health issues heavily impacted my DClinPsych research and all aspects of my training. I was diagnosed with Long Covid during my first year and struggled with it for over a year, requiring extended leave, a phased return to work, and 6-month research extension to the DClinPsych. The course, and especially my course tutor Prof Paul Salkovskis, were incredibly supportive throughout his process, modelling in words and actions the importance of looking after our health and wellbeing as Clinical Psychologists. Being a patient in the NHS's novel 'Post Covid Clinic' also offered a change of perspective and re-iterated the importance of involving both experts by profession and experts by experience in the development and research of interventions.

Systematic Review

I designed my theory-driven research project (TDRP) before the idea of the systematic review was born. Reading theoretical background research for my TDRP's rumination intervention made me realise that there was a gap in the literature and indicated the value a synthesis could provide. While my TDRP and SRL address similar concepts of repetitive negative thinking, they allowed me to approach the same maintenance factor from different perspectives: diagnosis-specific versus transdiagnostic. It was an interesting experience in research, as each perspective has its merits and can be supported by evidence, but places different emphasis on what is important (diagnosis-specific vs transdiagnostic treatment). It made me reflect how researchers too often rigidly adopt one perspective and only work from that assumption. I valued the opportunity this DClinPsych offered to practice

cognitive flexibility and open-mindedness, an important skill for a researcher and psychologist.

The online-format of the reviewed studies highlighted how interventions can be made more accessible, which is critical in the current mental health crisis marked by long waiting lists and a shortage of therapists. By designing, evaluating, and disseminating online treatments, Clinical Psychologists can implement their unique clinical-research skills and be part of increasing access in a cost-effective way.

Service Improvement Project

Motivated, not by prior belief in Trauma Informed Care, but by the frustrations of its vagueness and over-use as "buzzword", this Service Improvement Project (SIP) challenged me differently than evaluating something I already believed in. The interviews and recommendations let me reflect on the balance of idealised research implementation and real-world context of a well-meaning, often understaffed, overworked NHS.

The SIP highlighted the leadership competencies of a Clinical Psychologist in training other healthcare professionals in evidence-based approaches. However, results of the study also emphasised that Clinical Psychologists are only one of many multi-disciplinary professionals that need to work together with the same care approach to provide holistic care to our clients. It highlighted that Clinical Psychologists don't work in isolation but that good client-care is achieved through collaboration and a joint approach.

Theory Driven Research Project

My clinical experience and theoretical knowledge likely contributed to the success of the theory driven research project. After a year-long placement in IAPT and a specialist placement with PTSD, I was had a good understanding of the IAPT context I was recruiting from and was very familiar working with PTSD, which likely influenced my participant interactions: I was comfortable responding to trauma-related distress, normalising trauma-

responses, and could use my inter-personal skills to prevent drop out. Reviewing up-to-date PTSD literature let me implement it in my practice and intervention design. The project exemplified how Clinical Psychologists can truly act as scientist-practitioners, using practice experience to guide research, and vice versa. The research also reiterated the importance of including service user and it was humbling to learn from their experience and pay even closer attention to sensitive wording and diversity.

Aiming to keep my research relatively small due to the novelty and other training demands, I soon realised that developing an intervention for a pilot study was almost as much work as developing it for a larger trial as everything, from evidence-base for the intervention, design of an online module, ethics, recruitment, risk management, review and decisions on outcome measures, needed to be considered just the same. It was therefore a very large (possibly too large) undertaking for a DClinPsych project, primarily driven by my passion for improving PTSD treatments.

Connecting theme

All studies share the aim of improving access to post-trauma support, in the context of increasing demand for psychological therapy. The projects also contribute to a developing more effective ways of responding to trauma, for example by decreasing cost and therapist time through online interventions (SRL), targeting transdiagnostic maintenance factors (TDRP), or ensuring that individuals are not re-traumatised when using our services (SIP). This illustrates a substantial contribution Clinical Psychologists can offer towards increasing access and efficacy of evidence-based treatment.

Conducting this research has greatly developed my skills as a researcher as *all* designs and analyses I applied were new to me, in an attempt to learn and grow my research skills. This was the first time I conducted a systematic review, qualitative analysis and Tau-U analysis. This meant that I learned while doing, and would likely design parts differently, but

feel enriched in my skills going into the workforce. The process allowed me to reflect on the challenges of research but also on our highly privileged position within the NHS to integrate research into clinical practice and vice versa.

Post qualifying, I will work as a in a trauma specialist team which will allow me to continue building on the current research and implementing evidence-based learning intro NHS trauma care. Through this role, I will be involved in in teaching trauma informed care across the trust, letting learning from my SIP guide my practice, and will be supervising Trainee research to develop effective PTSD training in another trust. By publishing my research I further hope to contribute to the global discussion on improving post-trauma care.

Acknowledgments

First of all, I would like to thank my course tutor and research supervisor, Prof Paul Salkovskis. I am extremely grateful for his time, care, and never-ending humour. His constant guidance and encouragement throughout the DPhil was invaluable, especially when my Long Covid impacted all facets of life including course training, clinical work, research and personal wellbeing. He invariably believed in me and prioritised my health over work. It has been a privilege to learn from and be supported by this world-class expert and leader in clinical psychology.

I would also like to thank my research supervisors Prof Jennifer Wild, Dr Ciorsdan Anderson, and Dr Carmen Chan for their helpful discussions thinking through the design and analysis of research and valuable feedback during the writing process. I have felt lucky to work under the supervision of these caring and inspirational researchers and clinicians. Thank you also to all course staff who helped with research steps along the way.

I am very grateful to See Heng Yim (Vanessa) for her enormous help second rating and thinking through my systematic review. I am grateful to all local collaborators who helped set up my theory-driven research project and recruit participants: Louisa Dosanjh, Dr Charlie Wykes, Dr Graham Thew, and Harry Huntington. Thank you to the individuals with lived experience of PTSD who consulted on the project and all participants who volunteered to take part. Thank you also to my Service Improvement Project participants and the staff members who joined our focus group in preparation for the project.

I would like to thank my cohort who was a source of invaluable support as we helped and encouraged each other throughout the DClinPsych training. Specifically, thank you to my tireless "study buddies" Alice, Catherine, Kat and Ranjeet, for long nights and weekends spent motivating each other and thinking through research impasses together. Thank you to all my friends and family. And finally, I'd like to thank my partner Thom for being my rock

throughout this DClinPsych journey, with his unwavering belief in me, and invaluable encouragement and support.

Appendices

Appendix A: Systematic Review Search Terms

Searches completed on 18.02.2023

PsycINFO

Subject headings:

- Searched "Online" – led to **"online therapy"** focused subject heading
  Includes e-therapy, cybercounseling, internet counselling, teletherapy
- Searched "rumination" – led to **"rumination** (cognitive process)" focused subject heading
- Looked up "Repetitive negative thinking" – suggested "rumination" and anxiety, depression etc so
- Looked up "worry" – only suggested anxiety so selected nothing

Search completed:

Field search title AND abstract : online OR computer* OR "computer-based" OR virtual OR internet OR internet-delivered OR mobile-based OR "web-based" OR technology-based OR digital OR "app-based" OR "mobile adj3 app" NOT "digital imag*"

OR

"online therapy" *(Subject heading)*

AND

Field search title AND abstract: ruminat* OR "perseverative cognition" OR "perseverative thinking" OR "perseverative negative thinking" OR "repetitive negative thinking" OR "repetitive thinking" OR "repetitive negative thought*" OR "repetitive thought*" OR brooding OR worry OR "post-event processing" NOT "rumination syndrome"

OR

"rumination" *(Subject heading)*

AND

Field search title AND abstract : Intervention* OR therap* OR mindfulness* OR treat* OR counsel* OR psychoeducation* OR "psycho-education*"

AND

Human only

AND

English only

MEDLINE

Subject headings

- Searched “Online” – led to **“internet-based interventions”** focused heading
- Searched “rumination” – led to **“rumination, cognitive”**
- Looked up “Repetitive negative thinking” – suggested pessimism, depression, thinking. Included nothing
- Looked up “worry” – only suggested anxiety, depression so selected nothing

Search completed: Field search title AND abstract

Field search title AND abstract : online OR computer* OR "computer-based" OR virtual OR internet OR internet-delivered OR mobile-based OR "web-based" OR technology-based OR digital OR "app-based" OR "mobile adj3 app" NOT "digital imag*"

OR

“internet-based interventions” *(Subject heading)*

AND

Field search title AND abstract : ruminat* OR "perseverative cognition" OR "perseverative thinking" OR "perseverative negative thinking" OR "repetitive negative thinking" OR "repetitive thinking" OR "repetitive negative thought*" OR "repetitive thought*" OR brooding OR worry OR "post-event processing" NOT "rumination syndrome"

AND

Field search title AND abstract : Intervention* OR therap* OR mindfulness* OR treat* OR counsel* OR psychoeducation* OR "psycho-education*"

OR

“rumination, Cognitive” *(Subject heading)*

AND

Human only

AND

English only

Embase

Subject headings

- Searched “Online” – no useful results related to my search
- Searched “internet based” – found **“web-based intervention”** – focused heading. Includes internet-based intervention, internet-intervention, online-based intervention, online-intervention, web intervention
- Searched “rumination” – found **“cognitive rumination”** – focused. Includes mental rumination, “rumination, cognitive”, ruminative thinking, thought rumination
- Searched “rumination” – found **“brooding (rumination)”** – focused. Includes ruminative brooding
- Searched “worry” – led to “patient worry”. Nothing included
- Searched repetitive negative thinking – led to thinking, anxiety, depression. Nothing included.

Search completed: Field search title AND abstract

Field search title AND abstract : online OR computer* OR "computer-based" OR virtual OR internet OR internet-delivered OR mobile-based OR "web-based" OR technology-based OR digital OR "app-based" OR "mobile adj3 NEAR/3 app" NOT "digital imag*"

OR

“web-based intervention” *(Subject heading)*

AND

Field search title AND abstract : online OR computer* OR "computer-based" OR virtual OR internet OR internet-delivered OR mobile-based OR "web-based" OR technology-based OR digital OR "app-based" OR "mobile adj3 app" NOT "digital imag*"

AND

Field search title AND abstract : ruminat* OR "perseverative ADJ2 cognition" OR "perseverative ADJ2 thinking" OROR "repetitive ADJ2 thinking" OR "repetitive thought*" OR brooding OR worry OR "post-event processing" NOT "rumination syndrome"

OR

“cognitive rumination” *(Subject heading)*

AND

Field search title AND abstract : Intervention* OR therap* OR mindfulness* OR treat* OR counsel* OR psychoeducation* OR "psycho-education*"

AND

English only

AND

Humans only

SCOPUS

Scopus specific

- Use curly brackets { } if you want to search for an exact phrase
- **Punctuation:** Commas, hyphens,?, ! etc., are ignored
- Preceding (Pre/n): The first word must be no more that (n) words apart from the second word
- Within (W/n): It doesn't matter which word comes before the other
- Boolean searching is available – choose from the drop down boxes when search fields are added, or type in the operators (**AND**, **OR**, **AND NOT**). Take care if using multiple operators as they are processed in the following order of precedence: OR, AND, AND NOT.

Subject heading: "Scopus does not use subject headings, so you have to think of alternative terms/synonyms, etc."

Only option "**Title, abstract, keyword"**

"Title, abstract, keyword": online OR computer* OR {computer-based} OR virtual OR internet OR internet-delivered OR {mobile-based} OR {web-based} OR technology-based OR digital OR {app-based} OR {mobile W/3 app} AND NOT {digital imag*}

AND

"Title, abstract, keyword": ruminat* OR **{**perseverative cognition**}** OR {perseverative thinking} OR {perseverative negative thinking} OR {repetitive negative thinking} OR {repetitive thinking} OR {repetitive negative thought*} OR {repetitive thought*} OR brooding OR worry OR {post-event processing} AND NOT {rumination syndrome}

AND

"Title, abstract, keyword": Intervention* OR therap* OR mindfulness* OR treat* OR counsel* OR psychoeducation* OR {psycho-education*}

AND

Advanced search **limiter:**

- Source type: journal (not book, report etc)
- Document type: article (not letter, review etc)
- Publication stage: final (not in press)
- Language: English

CINAHL

- Putting quotation marks around phrases tells the database to search for these words as a phrase and not as individual words.

Subject headings: tick "suggested subject terms"

- Searched "Online" – led to **"internet-based interventions"** focused heading = "Major concept"
- Searched "rumination" – led to **"rumination (cognition)"** = major concept
- Searched "worry" – led to **"worry"** under the heading emotions = major concept
- Searched "repetitive negative thinking" – found nothing related

Can only do separate "title" and "abstract" searches. Need to search all twice: Title OR ABSTRACT because they don't have one joint term

Title: online OR computer* OR "computer-based" OR virtual OR internet OR internet-delivered OR mobile-based OR "web-based" OR technology-based OR digital OR "app-based" OR "mobile W3 app" NOT "digital imag*"

OR

Abstract: online OR computer* OR "computer-based" OR virtual OR internet OR internet-delivered OR mobile-based OR "web-based" OR technology-based OR digital OR "app-based" OR "mobile W3 app" NOT "digital imag*"

OR

"internet-based interventions"

AND

title: ruminat* OR "perseverative cognition" OR "perseverative thinking" OR "perseverative negative thinking" OR "repetitive negative thinking" OR "repetitive thinking" OR "repetitive negative thought*" OR "repetitive thought*" OR brooding OR worry OR "post-event processing" NOT "rumination syndrome"

OR

Abstract: ruminat* OR "perseverative cognition" OR "perseverative thinking" OR "perseverative negative thinking" OR "repetitive negative thinking" OR "repetitive thinking" OR "repetitive negative thought*" OR "repetitive thought*" OR brooding OR worry OR "post-event processing" NOT "rumination syndrome"

OR

"rumination (cognition)"

OR

“worry”

AND

Title: Intervention* OR therap* OR mindfulness* OR treat* OR counsel* OR psychoeducation* OR "psycho-education*"

OR

Abstract: Intervention* OR therap* OR mindfulness* OR treat* OR counsel* OR psychoeducation* OR "psycho-education*"

AND

Limiter:

- English
- Source type: academic journal

Appendix B: Extended Overview of Reviewed Interventions and Results

Table 3

Extended Overview of Interventions and Results

Study	Intervention	Between-group effect
(Amir & Taylor, 2012)	**Attention Modification Program (AMP**) designed to facilitate attentional disengagement from threat relevant cues and brief **computer-delivered cognitive and behavioural treatment (CCBT)** modules aimed at educating participants about the core concepts of CBT. AMP: Train attentional bias away from threatening stimuli (based on cognitive theory). CCBT: Psychoeducation, cognitive restructuring, exposure, breathing & relaxation, activity scheduling, relapse prevention.	
Design	Pre-post design (single arm)	
Online method	Treatment was entirely computer-delivered and completed at the participant's home. Included instructions, videos.	
Support	Standardized weekly contact via email or telephone by a research assistant, focused on technical difficulties, no discussion of content	
(Andersson E. et al., 2017)	**Internet-based extinction therapy (IbET).** Psychoeducation and the operant conditioning model of worry. Three extinction techniques to systematically block the reinforcing contingencies of thinking comforting thoughts: (a) mindfulness-stance to catastrophic thoughts (i.e., describing the catastrophic thoughts in a non-evaluating style), (b) thinking the worst thought (i.e., responding to the catastrophic thoughts with even worse thoughts), and (c) acceptance of uncertainty (i.e., responding to catastrophic thoughts with the fatalistic stance that the feared outcome may very well happen and is essentially not under the participant's control). Plus relapse prevention plan. Includes daily worry diary and homework tasks / quizzes. Rationale for extinction: in order to stop worry, the patient needs to do a competing response that blocks the temporary relief coming from the comforting thought. By doing this competing response, the patient will eventually extinguish the catastrophic thoughts, consequently decreasing the amount of worry.	PSWQ between-group effect size at posttreatment *d*=1.39, 95% CI [1.01, 1.77]
Design	RCT (with WLC)	
Comparator	WLC	
Online method	Secure web-platform. Written material and worksheets.	
Support	Written support by therapist, response within 1 working day, reminders if inactive. All therapists were clinical psychology students in their final year of the 5-year psychologist program	

(Andersson E. et al., 2021)	**Internet-based extinction therapy (IbET).** Based on a model where excessive worry is explained as an operant process consisting of the interplay between two types of cognitions: catastrophic thoughts and comforting thoughts. In the IbET treatment, the patient is instructed to use competing responses incompatible with thinking comforting thoughts, thereby extinguishing the reinforcement of the catastrophic thought.	PSWQ: IbET v. waiting-list post treatment *d*=1.34, 95% CI 1.00–1.66 (using ITT). IbET was superior to control *d*=0.38, 95% CI 0.09–0.67)
Comparator	**Active control comparison:** Internet-based stress-management program aimed to at reducing worry and be equally credible, equal therapist attention. Content: take control over the worry through relaxation techniques	
Design	RCT (superiority trial, active comparator and WLC)	
Comparator	WLC	
Online method	Secure web-platform. Written material and worksheets.	
Support	Written support by therapist through website's messaging system. All therapists were clinical psychology students in their final year of the 5-year psychologist program	
(Andersson et al., 2012)	**Internet-based psychodynamic psychotherapy (IPDT).** Based on book Make the Leap. The reader was guided through a program called SUBGAP, which stands for (1) Seeing unconscious patterns that contribute to emotional difficulties, (2) Understanding these patterns, (3) Breaking such unhelpful patterns, and (4) Guarding against patterns and/or relapses in the future. Plus applying the knowledge to solving the dilemmas of working life, improving personal relationships. Understanding the relationship between unconscious patterns and anxiety/worry.	PSWQ: IPDT within group effect size pre-post *d*=1.16 (CI: 0.56-1.73); ICBT within group effect size pre-post 0.87 (CI:0.25-1.46); WLC within group effect size pre-post *d*=0.72 (CI: 0.12-1.25). Also reported pre-3mFU and 12mFU.
Design	RCT (superiority trial where two active treatments were compared with a WLC)	
Comparator	**Internet-based cognitive behavioural therapy (ICBT) for GAD.** This included psychoeducation, applied relaxation, worry time, cognitive restructuring, cognitive distancing, problem solving, worry exposure, interpersonal problem solving, sleep management, and relapse prevention; Waitlist control	
Online method	Online platform. **IPDT:** Written text and discussions to write and send such writings to the guiding therapist using an encrypted communication platform. No homework. **ICBT:** included downloadable audio recordings for applied relaxation. All modules included homework.	
Support	**For IPDT:** Therapist's aim was to guide through the programme by giving feedback and encouragement in response to the weekly communications, often within 24h. Therapists were 3 therapists in their final year of a 5-year clinical psychology program and one licensed psychologist. All therapists had been trained in psychodynamic treatment, including supervised case experience conducting psychodynamic therapy. They also identified themselves as having a psychodynamic orientation. **For ICBT:** Therapist's aim was to guide through the programme. They provided weekly feedback to homework and answered questions. Two were licensed psychologists who had previous experience guiding Internet treatment for GAD, and 3 were psychology students in their final year. All therapists had received training in CBT and identified themselves as having a CBT orientation.	

(Dahlin et al., 2016)	**Internet-based acceptance and commitment therapy (ACT).** The treatment is primarily based on functional analysis, acceptance, mindfulness and valued action and ultimately aims to help people take a more accepting approach to anxiety and worry as well as living in accordance to one's values instead of reacting with avoidance. Includes psychoeducation on worry and anxiety and post-treatment planning.	
Design	Pre-post single arm (pilot)	
Online method	Online treatment platform. Modules matched with (paper) workbook exercises, some exercises in daily life. Uses animations, text with voice-over, audio and video to enhance the ways to present the treatment material. Designed with web-designers for visual progress feedback.	
Support	(The therapist can log on to the platform and monitor the patient's progress through the program. Participants were instructed to contact the psychologist at least once a week via email to give a short rapport of how the work was progressing and if they had any problems or concerns regarding the treatment. Therapists would reply within 48 hrs, to give feedback on the work and help. In addition, one or two telephone contacts of 15 min duration were scheduled during the treatment period and a live session at the end of treatment. By: clinical psychologist graduate students	
(Dahlin et al., 2016)	**Therapist-guided internet-delivered acceptance-based behaviour therapy (ABBT). O**nline treatment program focused on worry and consists of seven online modules. The central components are mindfulness, acceptance and valued action. Builds on Dahlin et al. (2016) pilot, same intervention.	PSWQ: There was a significant between group effect size in favour of the intervention group, Cohen's *d*=0.87 (0.35, 1.33)
Design	RCT (WLC)	
Comparator	Waitlist control group	
Online method	Online modules. Interactive with text, audio, animation and video. Additional workbook and CD for practice.	
Support	Support through secure messaging system. 15min per week focused on validation of the work and struggles reported, problem-solving and clarification if the participant had problems understanding or working with something in the treatment and finally reinforcing progress and encouraging continued work. By: Clinical psychologist graduate students	
(Dahlin et al., 2020)	**Self-help program targeting excessive worry.** The content includes psychoeducation, functional analysis of problematic behaviours, acceptance, mindfulness, taking valued action, and relapse prevention. Theory: Treatment components characteristic of **ACT**, but also used standard **behaviour therapy** techniques such as functional analysis. Did however not include standard cognitive therapy techniques, making the approach different from most CBT formulations of GAD. Builds on RCT: Dahlin, 2016 above, testing with less therapist support.	
Design	Single arm pre-post	
Online method	Secure website. Included animations and films, exercises and writing assignments as a way to enhance the information given in the program.	

Support	The aim was less therapist-intensive alternative to Dahlin, 2016 (RCT). Support on demand and automatic encouraging messages. Therapist: Psychology student was in his last year of a 5-year psychology program.	
(Dahlin et al., 2022)	2 treatments, each with scheduled support or support on demand: Worry-specific & weekly support; worry-specific & support on demand; self-tailored & weekly support; self-tailored & support on demand. **Worry specific: ACT based on acceptance, mindfulness, and valued action strategies. Self-tailored:** participants were presented with 14 modules, and instructed to select seven modules that they thought would suit them best. Education and exercises. **Appears mixed ACT and CBT**. Covers anxiety, depression, worry, sleep, cognitive restructuring, relaxation, mindfulness, acceptance, relapse prevention	PSWQ between-group difference for support type was *d*=0.14, in favour of weekly support over on the support on demand condition. The between-group difference for support type was *d*=0.14, in favour of weekly support over on the support on demand condition. The between-group effect for treatment was small and insignificant *d*=0.10, in favour of the worry-specific program over the self-tailored treatment. Small and insignificant *d*=0.10, in favour of the worry-specific program over the self-tailored treatment. The between-group effect for treatment was small and insignificant *d*=0.10, in favour of the worry-specific program over the self-tailored treatment.
Design	Pilot randomised factorial design trial	
Online method	Secure platform, interactive design (audio, video, written content).	
Support	Weekly support: participants were instructed to send a report of their work each week and received feedback within 48 h. They could ask questions at other times as well. Aimed support max 15min/week; Support on demand: participants went through the treatment on their own and to contact the support if they needed help or clarifications in any way. Four M.Sc. clinical psychology students, in their last term of a five year clinical program, provided the support under the supervision of an experienced clinical psychologist. The supporters were also instructed to use validation and give positive feedback on the work, and when possible, to refer to the information in the treatment modules.	
(Draper et al., 2008)	**CBT for GAD plus techniques that target intolerance of uncertainty, metacognitive beliefs, and acceptance and mindfulness.**	
Design	Multiple case series design	
Online method	Website with modules.	
Support	Occasional contact for reminders via telephone. No counselling or explanation of treatment modules was provided during these contacts. Not specified by whom.	

(Heckendorf et al., 2019)	**Gratitude training.** "Upwardly-spiralling" working model of gratitude. Based upon **positive psychological, resource-oriented and cognitive-behavioural principles**, and were adapted to the gratitude realm. Content: perception of positive moments in everyday life and within one's biography (Awareness), evaluating such events as being positive and thankworthy is encouraged and a modification of the users' dysfunctional cognitions concerning gratitude is offered (Cognition). A third element aims to intensify the emotional experience of gratitude (Emotion). The fourth core element encourages participants to express their feelings of gratitude and take action (Behaviour).	Between: Significant decrease of RNT (PTQ) at post-intervention *d*=0.61 [0.36,0.86] and 3-month FU, *d*= 0.75 [0.50,1.00], as compared to WLC.
Design	RCT (WLC)	
Comparator	Waitlist control	
Online method	Smartphone app and online-based gratitude training. Online gratitude training (weekly sessions) with a mobile gratitude app (daily exercises).	
Support	Had e-Coach for reminders, feedback on demand regarding difficulties or ambiguities in conducting individual exercises as well as support on demand with technical difficulties.	
(Hirsch C.R. et al., 2018)	**Cognitive bias modification for interpretation (CBM-I),** either with or without RNT priming prior to training. The training task involves repeated practice in listening to ambiguous event descriptions, which are resolved in a benign manner, each followed by a 'comprehension' question that requires confirmation of the positive resolution. In this way, participants are repeatedly but unobtrusively guided toward anticipating and generating positive resolutions of ambiguous situations. All online sessions began with either an RNT induction (primer group) or neutral task (non-primer group or control). Then, participants listened to 50 audio clips, imagined themselves in each described situation, and then answered a comprehension question. Situations related to common worry-related (GAD group) and rumination-related (MDD group) themes.	Between groups: CBM-I was associated with significantly lower worry scores (PSWQ) than the control condition at follow-up (Hedges' gfollow-up= .29), but not at post-intervention (Hedges' g=.15). Thus, at follow-up, worry scores were lower following CBM-I than the control condition. CBM-I was significantly associated with lower rumination scores than the control condition at both post training time points (Hedges' gV post =.31; Hedges' gfollow-up= .51).
Design	Randomised controlled experiment (two intervention, one active control). Not classified as trial.	
Comparator	Control condition: involved exposure to the same ambiguous material, but without being guided to either a negative or positive resolution.	
Online method	One initial visit followed by nine sessions completed at home using a purpose-built online platform. RNT induction or neutral story task followed by 50 training or control scenarios.	
Support	Without support	
(Hirsch et al., 2020)	**Cognitive bias modification for interpretation (CBM-I).** Specifically: **Interpretation training condition with prior activation of RNT (CBM_RNT)** and comparator: **training condition augmented with positive outcome generation and imagery (CBM_ENH). Both:** Prior to the first CBM-I session, participants received either a mental imagery training exercise delivered by the experimenter (CBM_ENH) or a neutral filler task (CBM_RNT and control). All online sessions began with either an RNT induction (CBM_RNT and CBM_ENH) or a neutral task (control). Then, participants listened to 40 (CBM_ENH) or 50 (CBM_RNT and control) audio clips (henceforth scenarios), imagined themselves in each described situation, and then answered a comprehension question.	Between CBM-i and control for **PSWQ** at post: Not significant (hedge's g= .27). Between CBM-I and control for **PSWQ-PW**: Significant at post (hedge's g=.35) and at FU (hedge's g=.40). Between for **RRS:** not significant.

	CBM_RNT = as Hirsch et al., 2018. **CBM_ENH:** A second form included additional instructions to actively generate positive resolutions to ambiguous descriptions, and to imagine oneself in that situation.	Between for **RTQ-T:** .Significant at post (g=.41) and FU: (g=.31). Also compared the two interventions. No significant effects on RNT/worry/rumination.
Design	RCT (2 interventions, 1 control)	
Comparator	Active control group the same ambiguous scenarios were presented but without specific guidance as to their resolution.	
Online method	Online platform	
Support	Without support	
(Hoorelbeke & Koster, 2017)	**Cognitive control training (CCT).** Consisted of PASAT Paced Auditory Serial Addition Task) training (participants are presented with a continuous stream of auditory digits and have to continuously respond to the sum of the last two heard digits, by clicking on the corresponding response button, which has been proposed to activate the prefrontal cortex, a key cognitive control region, in a stressful context. Speed was adapted based on performance.	Main effect of time (pre-post) for brooding Partial Eta2 = 0.27; Cohen's d= 1.22. Brooding time x group interaction Partial Eta2 = .13; Cohen's *d*= .77.
Design	RCT (active control)	
Comparator	Active control: Low cognitive load training: participants had to immediately respond to the last heard digit.	
Online method	Online in-browser using a millisecond software web license.	
Support	No support	
(Joubert et al., 2021)	Targeting rumination and worry. Content: psychoeducation, self-monitoring, three rules of thumb to differentiate between helpful and unhelpful rumination and worry, activity planning, structured problem solving, and attention shifting, and identifying, testing and challenging meta-cognitive beliefs about RNT. Drawn from different **CBT perspectives**, including Rumination-Focused CBT, Mindfulness-based Cognitive Therapy (MBCT), Metacognitive therapy	Large within-subject effect sizes were found between pre- and post-treatment for RNT (Hedges' g=2.26)
Design	Single arm pre-post	
Online method	3-lesson unguided online treatment program. Illustrated, comic-style story about two fictional characters who learn how to manage frequent worry and rumination. Each lesson consisted of lesson slides following the characters' stories, introduction of treatment skills, and examples. Downloadable summary and action plan.	
Support	No support	
(Kladnistki et al., 2022)	**Transdiagnostic internet cognitive behavioural therapy (iCBT) for mixed anxiety and depression**. Comic-style illustrated lessons. CBT skills: psychoeducation about anxiety, depression, and the CBT cycle, behavioural activation, thought monitoring, cognitive restructuring, graded exposure, strategies to manage rumination and worry, and relapse prevention. Access to extra resources on: activity planning, assertiveness, good sleep, pleasant activity scheduling, hunt for the positives, panic attacks, worry time, worry stories (imaginal worry exposure), thought challenging, medications, and structured problem solving. Included downloadable summary and homework. Same intervention as Newby et al. (2014).	Large between-group effect sizes on the RTQ (g=−1.04 (95%CI=−1.56 – −0.51)
Design	RCT (Compared to TAU)	

Comparator	Compared to Treatment as usual (TAU)	
Online method	Clinic website	
Support	Clinicians contacted participants via email and/or phone after completion of Lessons 1 and 2 to encourage adherence. Contact with participants was also initiated following patient request, in response to a significant increase in depression scores/risk	
(Knabb et al., 2021) Study 1	**Christian Meditation Program for Trauma-Based Rumination.** Video of the Bible verse, theme, goals, and tasks for the week. Used classic Christian writings that aligned with the key mental skills of attention, present-focus, awareness, and acceptance. Sought to help participants shift from unhelpful (e.g., "why" and "what if" questions about the traumatic event and questioning God's availability or absence in the context of the traumatic event) to helpful (e.g., meditating on Scripture and reciting a short prayer) forms of rumination in response to trauma-related intrusive memories and symptoms. To do so, we focused on helping practitioners to develop the aforementioned mental skills during formal and informal Christian meditative practice.	No significant time x condition interaction on the RIQ partial η2=.02, or on the PTQ partial η2=.04 (ITT analysis).
Design	RCT (WLC)	
Comparator	Waitlist control	
Online method	Online in Qualtrics. Modules, audio recordings, handouts, questions to assess attention and knowledge.	
Support	Sent reminder emails at least twice per week	
(Knabb et al., 2021) Study 2	**Christian Meditation Program for Trauma-Based Rumination** (see above).	No significant time x condition interaction.
Design	RCT (WLC)	
Comparator	Waitlist control	
Online method	(Online modules. See above)	
Support	(See above)	
(Newby et al., 2014)	Transdiagnostic **internet cognitive behavioural therapy (iCBT)** for mixed anxiety and depression. Components that were designed to target RNT and positive beliefs were: psychoeducation, self-monitoring, identification and cognitive restructuring of positive and negative beliefs about RNT, behavioural activation, structured problem-solving, attention shifting, worry time, and imaginal exposure to worry scenarios.	RTQ: Between group pre-post: g= .90 (.47 1.33)
Design	RCT (WLC)	
Comparator	Waitlist control	
Online method	On website: Illustrated online lessons and a corresponding lesson summary which includes practical homework exercises.	

Support	Clinician assisted. The primary clinician was an administrative assistant, who was supervised by a Therapist= PhD-level Clinical Psychologist. CBT group participants received regular email and/or phone contact with their Clinician until they completed lesson 2, after which contact was made in response to patient request. All emails requiring clinical advice were responded to by the Therapist, if scores deteriorated below a cut-off, the therapist contacted participants via telephone.	
(Paxling B. et al., 2011)	**CBT for GAD**. Psychoeducation, applied relaxation, worry time, cognitive restructuring, cognitive distancing, problem solving, sleep management.	PSWQ: Between group effect size *d*=1.11.
Design	**RCT** (WLC)	
Comparator	Waitlist control	
Online method	Secure website containing written online modules and audio recordings.	
Support	(Therapists in final year of psychology training guided through the programme by providing weekly written email feedback on homework to participant and reminders. Time spent: 10-15min/week/participant. They had received 1 week of training in CBT treatment for GAD).	
(Querstret D. et al., 2017)	**Internet-based Mindfulness for Work-Related Rumination**, Fatigue, and Sleep. Uses mindfulness-based stress reduction (MBSR) and Mindfulness-based cognitive therapy (MBCT). This includes formal meditation skills (e.g., body scan, mindful movement, sitting meditation, and "three minute breathing space") and informal mindfulness activities.	Affective rumination partial eta squared=0.11,.Main effect of group partial Eta2 = 0.30.
Design	RCT (WLC)	
Comparator	Waitlist control	
Online method	Interactive online sessions, videos, audio. Online guided by mindfulness practitioners. Email reminders.	
Support	No personal contact with instructors	
(Robinson E. et al., 2010)	Clinician-assisted **internet based CBT (iCBT) for GAD.** Best practice CBT for GAD including: challenging meta-beliefs about worry, graded exposure, challenging core beliefs, and relapse prevention. Supplementary material on managing sleep, low mood, panic and on assertiveness, problem solving.	PSWQ between intervention (clinician assisted) and active control (technician assisted) *d*=0.07
Design	RCT (comparator and WLC)	
Comparator	Comparison: Technician-assisted; Waitlist control	
Online method	Six online lessons, including case examples, printable summary and homework assignments, automatic emails, and additional resource documents.	
Support	Clinician assisted: The clinician was a qualified and registered clinical psychologist. CA group participants had weekly email or telephone contact with the clinician and access to an online discussion forum where they could post questions to the clinician about the program content. The clinician was provided with the same guideline script as the technician but was also instructed to answer participants' questions via forum, email, or telephone. The clinician was instructed to actively engage with each participant in treatment including goal setting, problem solving, and discussion of strategies for overcoming hurdles to progress. Technician assisted: The technician had	

	no prior experience with research programs, no qualifications in health care or counselling. weekly email or telephone contact. The technician was given a guideline script which identified the topics covered in each lesson of the program and activities participants should be encouraged to practice for each lesson. The technician was instructed to contact each TA group participant weekly to provide encouragement and support, and where possible to respond to participants' general questions by referring them to the materials in the program. The technician was not permitted to provide clinical advice. Both: Max 10min /participant/week.	
(Rosmarin, 2010)	**Spiritually integrated treatment (SIT)** for subclinical anxiety in the Jewish community. Two principal categories of strategies were identified: cognitive (e.g., reading inspiring stories and excerpts from Jewish religious literature) and behavioural (e.g., spiritual exercises to increase gratitude, and prayer). Segments: Introduction, informed that the purpose of the program is to strengthen the perspective that God is completely knowing, powerful, kind, and loving; presented with Jewish stories and asked to read them out loud; spiritual exercises; prayer for increased trust in God. Asked to practice spiritual exercises, especially when feeling anxious.	Significant pre-post group x time interaction on worry (ITT), Eta squared =.11 where the SIT group reported significantly lower levels of worry than the WLC group. From pre-FU (6-8 weeks) there was a significant group x time interaction on worry Eta squared=.21. Levels of worry were significantly lower in the SIT and PMR groups compared to the WLC group; the difference between SIT and PMR groups approached significance (*p*=.06) with the SIT group reporting less worry.
Design	RCT (Active control and WLC)	
Comparator	Active control: Progressive Muscle Relaxation; Waitlist Control.	
Online method	Study website. Guided audio-video programme.	
Support	Daily email reminders. No therapist contact	
(Titov et al., 2009)	**Clinician-assisted computerized cognitive behavioural treatment (CaCCBT).** Illustrated story of overcoming GAD using CBT. Content: Symptoms and treatment of GAD and the basic principles of cognitive therapy, instructions about challenging positive and negative beliefs about excessive worry, education and guidelines about practicing graded exposure, education and guidelines about challenging core beliefs, relapse prevention. Additional resources: guidelines about assertiveness, health anxiety, skills descriptions.	Between group PSWQ (ITT): Cohen's *d*=0.96 . (Note: small sample size, no power analysis)
Design	RCT (WLC)	
Comparator	Waitlist Control	
Online method	Online sessions, weekly homework, contribute to a moderated online discussion forum with other participants.	
Support	Clinician-assisted: weekly email contact from a Clinical Psychologist	

(Wahlund et al., 2022)	Simplified, condensed, online **metacognitive intervention (MCI), using metacognitive therapy** primarily aimed at reducing negative beliefs about worry (condensed, simplified for online version) Includes: Psychoeducation, metacognitive model of worry with case examples, then, modify any negative metacognitive beliefs about worry e.g. detached mindfulness and attention training, worry postponement, restructuring of negative metacognitive and positive beliefs about worry, behavioural experiments to modify metacognitive beliefs and dysfunctional worry-management strategies, relapse prevention.	Cohen's *d* PSQW fixed effect (describe the average effects) *d*=1.64, showed significant between-group differences for the average pre- to post-intervention change, favouring MCI relative to WL.
Design	RCT (WLC)	
Comparator	Waitlist control	
Online method	Online platform: Eight consecutive modules, including written information (approximately 60 pages) and MP3-files with instructions for homework exercises.	
Support	Access to a therapist via written communication	

Note. PSWQ=Penn State Worry Questionnaire (Meyer et al., 1990); PSWQ-PW= Penn State Worry Questionnaire-Past Week (Stöber & Bittencourt, 1998); PTQ=Perseverative Thinking Questionnaire (Ehring et al., 2011); RIQ=Response to Intrusion Questionnaire (Clohessy & Ehlers, 1999; Murray et al., 2002; Steil & Ehlers, 2000); RRS=Ruminative Response Scale (Nolen-Hoeksema & Morrow, 1991; Treynor et al., 2003); RTQ-10=Repetitive Thinking Questionnaire-Short Form (McEvoy et al., 2010b); WRRQ= Work-related Rumination Questionnaire (Cropley et al., 2012). Other acronyms: CBT=cognitive behavioural therapy; CT=cognitive therapy; FU=follow-up; GAD=generalised anxiety disorder; ITT=intent to treat; MDD=major depressive disorder RCT=randomised controlled trial; RNT=repetitive negative thinking; WLC=wait-list control.

Appendix C: Systematic Review Quality Appraisal and Details on Decision Making

Table 4

QualSyst Tool (Kmet et al., 2004) Quality Appraisal Results

Author, Year		Criterion 1	Criterion 2	Criterion 3	Criterion 4	Criterion 5	Criterion 6	Criterion 7	Criterion 8	Criterion 9	Criterion 10	Criterion 11	Criterion 12	Criterion 13	Criterion 14	Sum score
	QualSyst tool (Kmet et al., 2004)	Question / objective sufficiently described?	Study design evident and appropriate?	Method of subject/comparison group selection *or* source of information/input variables described and appropriate?	Subject (and comparison group, if applicable) characteristics sufficiently described?	If interventional and random allocation was possible, was it described?	If interventional and blinding of investigators was possible, was it reported?	If interventional and blinding of subjects was possible, was it reported?	Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?	Sample size appropriate?	Analytic methods described/ justified and appropriate?	Some estimate of variance is reported for the main results?	Controlled for confounding?	Results reported in sufficient detail?	Conclusions supported by the results?	
	Clarifications based on Goodison (2022)	Hypotheses =2 points. Don't need primary	If need a control group to answer study question, would also detract a point here	Do you feel you know clearly where participants were from and how they were identified?	Age, sex as minimum	If they report they did not randomise = N/A	If all measures are self-report or only one group = N/A. If possible to blind investigators but not reported = 0	If possible but no blinding reported = 0. Not possible to blind participants to psychological tx is N/A		A priori power analysis = 2 points. When not - see Cohen's power table. Can give 2 if appropriate. Set 0.80 as sufficient power.	Multiple testing addressed where necessary?	Standard deviation (ED) counts as does standard error (SE). Only 1 point if only given time points, not difference				
		Rating: 2=yes, 1=partial, 0=no, N/A	Rating: 2=yes, 1=partial, 0=no, N/A	Rating: 2=yes, 1=partial, 0=no, N/A	Rating: 2=yes, 1=partial, 0=no, N/A	Rating: 2=yes, 1=partial, 0=no, N/A	Rating: 2=yes, 1=partial, 0=no, N/A	Rating: 2=yes, 1=partial, 0=no, N/A	Rating: 2=yes, 1=partial, 0=no, N/A	Rating: 2=yes, 1=partial, 0=no, N/A	Rating: 2=yes, 1=partial, 0=no, N/A	Rating: 2=yes, 1=partial, 0=no, N/A	Rating: 2=yes, 1=partial, 0=no, N/A	Rating: 2=yes, 1=partial, 0=no, N/A	Rating: 2=yes, 1=partial, 0=no, N/A	

(Amir & Taylor, 2012)	2	2	2	2	N/A	N/A	N/A	2	1 No a priori power analysis. (N=14 completed, d=1.4; N=21 ITT, d=0.82). Not specified what alpha level or if one or two tailed analysis. If assume alpha=0.5 two-tailed then completer power=95, if assume alpha 0.1 the power = .80 = both sufficient. For ITT alpha of 0.5 gives power of 0.7-0.75 which is not sufficient. Or if alpha is 0.1 then power is 0.5 which is not sufficient.	1 Did multiple tests but did not report bias considerations.	2	N/A	2	2	0.90
(Anderss on E. et al., 2017)	2	2	2	2	2	N/A	N/A	2	2	2	2	N/A	2	2	1.00
(Anderss on E. et al., 2021)	2	2	2	2	2	N/A	N/A	2	2	2	2	N/A	2	2	1.00
(Anderss on et al., 2012)	2	2	2	2	2	N/A	N/A	2	1 Sufficient power for intervention vs waitlist. Not for comparison	2	2	N/A	2	2	0.95

									between two active interventions.							
(Dahlin et al., 2016) Pilot	1 No hypotheses, not clear what measured only effectiveness, vague, target population not named	2	2	2	N/A	N/A	N/A	2	2 No power analysis. But was only a pilot study, they didn't aim to test a full trial.	2	2	N/A	2	2	0.95	
(Dahlin et al., 2016) RCT	2 Aim does not mention that primary outcome is worry, only focus on GAD. "symptoms associated with GAD". Vague but judged as specific enough compared to studies that don't mention any target.	2	2	2	2 "Using an online true random-number service" is specific enough in line with Kmet guidelines.	N/A	N/A	2	2 No power analysis conducted. Used Cohen's table to assess appropriate sample size and was deemed appropriate.	2	2	N/A	2	2	1.00	

(Dahlin et al., 2020)	1 Aim does not match the primary outcome measure. Aim stated as "the aim of this open pilot study was to evaluate if Oroshjälpen can be delivered with automated and minimal clinical support" which sounds like feasibility study but primary outcome measure in methods is PSWQ.	2	1 Participants taken from previous WLC introduces bias - already didn't drop out and completed 9 weeks of measures where they showed some improvement. Kmet critieria "selection criteria not ideal". May distort results (e.g. already showed that don't drop out, high committment. (Needed to review different study to understand original recruitment since participants were taken from previous RCT).	2	N/A	N/A	N/A	2	2 Did not do any power analysis but aim was only a pilot	2	2	N/A	2	2 Say "The results indicated that support on demand and automated messages can be an alternative to weekly contact with a therapist during internet-based treatment." But only measured single-arm in this study. Assume based on success of RCT, but didn't do direct comparison. Still appropriate based on Kmet "if made in addition to rather than	0.90

														instead of those strictly supported by data,and if including indicators of their interpretative nature (e.g., “suggesting”)	
(Dahlin et al., 2022)	1 Doesn't specify population, "explore the effects" / "compare treatments", unclear what target outcome is.	2	2	2	2	N/A	N/A	2	2 Was meant to be a pilot, did not assess non-inferiority. They did not consider non-inferiority, which would have required a much larger sample.	2	2	N/A	2	2	0.95
(Draper et al., 2008)	2 Aim "investigate internet-based intervention for GAD" vague but judged as specific enough as mention GAD target	1 want to "investigate efficacy" using case series design. Don't note purpose, population, case series design or specific intervention in intro (only later in method details/discussion)	2	2	N/A	N/A	N/A	2	2 Aim was a case series. N=3 is very small but acceptable	2	2	N/A	2	2	0.95

(Heckendorf et al., 2019)	2	2	2	2	2 "Computer-generated randomization list" but didn't specify where. Specific enough based on Kmet criteria	N/A	N/A	2	2	2	2	N/A	2	2	1
(Hirsch C.R. et al., 2018)	2	2	2	2	2 (From additional paper it referenced - original study secondary analysis is based on)	N/A	N/A	2	2 (From additional paper it referenced - protocol paper of the study)	2	2	2	2	2	1
(Hirsch et al., 2020)	2	2	2	2	2	N/A	N/A	2	2	2	2	2	2	2	1
(Hoorelbeke & Koster, 2017)	2	2	1 Recruited "via advertisement and lab database" - unclear where advertised and what the database includes, not even category of population/s given	2	2	2	2	2	2 Powered only to assess pre-post of main intervention, not of comparison between RCT groups. But in line with primary hypothesis.	2	2	2	2	2	0.96
(Joubert et al., 2021)	2	2	2	2	N/A	N/A	N/A	2	2 Very small but set up as pilot, so acceptable.	2	2	N/A	2	2	1

(Kladnisti et al., 2022)	2	2	2 (From additional paper it refereced - original study secondary analysis is based on)	2	2 (From additional paper it refereced - original study secondary analysis is based on)	N/A	N/A	2	2 From additional paper it referenced - original study secondary analysis is based on. Power based on intervention and an active control which was not included/analysed in current study. Still in line with Kmet criteria	2	2	N/A	2	2	1
(Knabb et al., 2021) Study 1	2	2	2	2	2	N/A	N/A	2	1 No power analysis. Sample size seems small. Size noted in limitations	1 Multiple ANOVAS after first ones not significant, did not consider multiple testing bias	2	N/A	2	2	0.91
(Knabb et al., 2021) Study 2	2	2	2	2	2	N/A	N/A	2	1 No power analysis. Sample size seems small. Size noted in limitations	1 Multiple ANOVAS after first ones not significant, did not consider multiple testing bias	2	N/A	2	2	0.91
(Newby et al., 2014)	2	2	2	2	2	N/A	N/A	2	2 power analysis described in previous paper and referenced.	2	2	N/A	2	2	1

(Paxling B. et al., 2011)	2 Says "could alleviate symptoms associated with GAD". Vague but specific enough as mention GAD symptoms	2	2	2	2	N/A	N/A	2	2	2	2	1 (only confounder of medication considered, no other. Did not report baseline differences).	2	2	0.96
(Querstret D. et al., 2017)	2	2	1 "To organizations with which the university had relationships to request they promote the study to their staff". Not explained, may introduce bias	2	2	N/A	2 "Participants were blinded to group membership, as they were not able to choose which group they were allocated to and they were not aware that the study was designed as a waitlist control trial." Explicitly note blinding & take precautions for it.	2 (Did not report validity or reliability of measure, especially since only used 2 sub-scales, but Kmet does not consider this limiting if reference is provided).	2 No a-priori power analysis. Size seems reasonable, medium effect size. Appears still in line with Kmet.	2	2	2 controlled for confounding demographics	2	2	0.96
(Robinson E. et al., 2010)	2	2	1 Confusing that say MINI was used to assess for GAD but don't clearly say it as exclusion/inclusion	2	2	N/A	N/A	2	2	2	2	2	2	2	0.96

			criteria or name any cut-off. Later pre-treatment use GAD-7 to assess GAD and not all participant meet cut-off.												
(Rosmarin, 2010)	2	2	2	2	2 "Using a computer-generated allocation sequence; no blocking or stratification rules were utilized." But still mention some details so in terms of Kmet suitable for 2 points	N/A	N/A	2	2 Did a power analysis. However, this does not match standard effect size tables for Cohen's *d* of required effect sizes. Based on their description their sample size is sufficiently powered. Based on our perception, it is not. Does not match either Kmet "1/2 partial" or "2/2 yes".	2	2	2 Bonferroni post hoc tests were conducted	2	2	1.00
(Titov et al., 2009)	2	2	2	2	2	N/A	N/A	2	1 Sample seems small and there was no power analysis done	2 Used Bonferroni correction	2	2	2	2	0.96

(Wahlund et al., 2022)	2	2	2 Vague recruitment but acceptable based on Kmet "social media platforms and sent to mental health care providers across Sweden"	2	2	N/A	N/A	2	1 Power analysis completed, but sample smaller than needed, but at 90% power. Did not calculate/report 80% power.	2	2	1 Inter-rater agreed after IRR- they didn't mention if there's sig difference between baseline characteristics, and it looks like there's diff in baseline GAD level, unsure if significant, as they did not provide SD of that data. Didn't control for it.	2	2	0.92

Note: Sum score = Sum of points awarded to the study divided by the number possible to achieve (without N/A)

Notes on QualSyst Tool (L. M. Kmet et al., 2004) based on agreements with second rater

Possible ratings of N/A, 0, 1 or 2

Judgement calls / decisions made:

Item 1: Question / objective sufficiently described?

- 2 - "Symptoms of X", "symptoms associated with X" is specific enough as target descriptor e.g. symptoms of GAD
- 2 - even if no target population is mentioned but clear aims/hypotheses
- 2 - even if don't state measurement of RNT
- 1 – if not clear what outcome is targeted e.g. "explore effects" but don't say of what

Item 2: Study design evident and appropriate?

- 2 – to show/explore/assess "effectiveness" pre-post analysis is enough, even if it's a pilot

Item 3: Method of subject/comparison group selection or source of information/input variables described and appropriate?

- 2 - if name website where recruited from
- 2 – if online area defined, even if vaguely e.g. social media
- 2 - if state general population e.g. healthcare providers
- 2 – even if don't specify how people found the websites (some commonly known)
- 1 – if don't say where online/no details on website
- 1 – if say from a specific database but don't give any indication who may be in that database / any population

Item 4: Subject (and comparison group, if applicable) characteristics sufficiently described?

- *No comments*

Item 5: If interventional and random allocation was possible, was it described?

- N/A – for all pre-post single-arm interventions / no control groups / no randomisation needed or possible
- 2 – if RCT/random allocation and it is described how it was done: noting randomisation strategy/method even if they don't state the specific website

Item 6: If interventional and blinding of investigators was possible, was it reported?

- Investigator blinding refers to blinding towards the intervention.
  Does not refer to blinding of randomisation.
  No investigators could be blinded towards outcome measures for RNT since they were all self-report
- N/A – investigator blinding is not possible (in most cases)
- 2 – if explicitly noted that investigators were blinded towards the intervention (only possible for non-therapeutic interventions)

Item 7: If interventional and blinding of subjects was possible, was it reported?

- N/A – for therapeutic interventions where participants can determine which group they are in blinding is not possible (most studies)

- 2 – if explicitly stated that participants were and could be blinded (e.g. if 2 active interventions, if participants don't know the study has a waitlist)

Item 8: Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?

- *No comments*

Item 9: Sample size appropriate?

- 2 – if small / no power analysis / under powered but labelled/aimed/classified as "pilot study"/"preliminary study"

Item 10: Analytic methods described/ justified and appropriate?

- 1 – only if analysis not reported and have to be guessed but appear appropriate

Item 11: Some estimate of variance is reported for the main results?

- *No comments*

Item 12: Controlled for confounding?

- 2 – if note difference at baseline and account for it e.g. Bonferroni test
- 1 – if note difference at baseline and don't account for it
- 1 – if don't assess / describe difference at baseline "confounding not considered, but not likely to have seriously distorted the results."
- 2 – if assessed difference at baseline and there was no difference
- N/A – if single arm / no control group so there would be no comparison of baselines

Item 13: Results reported in sufficient detail?

- *No comments*

Item 14: Conclusions supported by the results?

- *No comments*

Appendix D: Systematic Review Highlights
In line with journal requirements

- Novel review of online interventions to decrease repetitive negative thinking (RNT)
- A wide range of interventions significantly decrease worry, rumination or RNT
- Results support online interventions as feasible and effective

Appendix E: Journal Guidelines
Journal proposed for the Systematic Review of the Literature: **Behaviour Research and Therapy**

Relevant Instructions to Authors:

Aims and Scope
The major focus of *Behaviour Research and Therapy* is an experimental psychopathology approach to understanding emotional and behavioral disorders and their prevention and treatment, using cognitive, behavioral, and psychophysiological (including neural) methods and models. This includes laboratory-based experimental studies with healthy, at risk and subclinical individuals that inform clinical application as well as studies with clinically severe samples. The following types of submissions are encouraged theoretical reviews of mechanisms that contribute to psychopathology and that offer new treatment targets; tests of novel, mechanistically focused psychological interventions, especially ones that include theory-driven or experimentally-derived predictors, moderators and mediators; and innovations in dissemination and implementation of evidence-based practices into clinical practice in psychology and associated fields, especially those that target underlying mechanisms or focus on novel approaches to treatment delivery. In addition to traditional psychological disorders, the scope of the journal includes behavioural medicine (e.g., chronic pain). The journal will not consider manuscripts dealing primarily with measurement, psychometric analyses, and personality assessment.

For systematic reviews it is recommended that the PRISMA guidelines are followed, although it is not compulsory.

While regular-length papers have no explicit limits in terms of numbers of words, tables/figures, and references, authors are encouraged to keep their length below 35 total pages. A paper's length must be justified by its empirical strength and the significance of its contribution to the literature.

Summary of Manuscript Structure

- A title page with names and contact details for all authors;
- Corresponding author. Clearly indicate who will handle correspondence at all stages
- Highlights - Highlights are mandatory for this journal as they help increase the discoverability of your article via search engines. They consist of a short collection of bullet points that capture the novel results of your research
- Abstract - A concise and factual abstract with a maximum length of 200 words.
- *Keywords* - Immediately after the abstract, provide a maximum of 6 keywords
- The text (usually Introduction, Methods, Results, Discussion)
- Tables - Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end
- References - Reference style: American Psychological Association 7th Edition
- Appendix (if any).
- *Acknowledgements*
- *Funding sources*
- *Subdivision* - unnumbered sections
- *Appendices*

Appendix F: Interview Questions Topic Guide

Semi-structured Interview Protocol and Questions

Verbal interview via Teams. Recorded for transcription purposes.

Introductions and Warm up

1. Introduction
2. Purpose of the interview: Understand your experiences of the TIC and your feedback on the training. There are no right or wrong answers. We are simply interested in your thoughts and experience.
3. Confidentiality and anonymity: interview recording for analysis, consent for recording. Use of non-identifiable quotes. No identifiable data will be shared with your service (or anyone besides the research team).
4. Interview duration: ca 45min
5. After the interview: You will received a 10 pound voucher and a debriefing sheet.
6. Survey: Ask participants to complete online Qualtrics survey for demographic data.
7. What will happened with the results: report written for Oxford Health / doctorate in Clinical Psychology/ possible publication. Results fed back to services/team managers.
8. Any questions before we start?

Questions

Questions related to research aim 1: participant's understanding of TIC after being trained. Theory-based questions building on the 4R's definition of TIC (SAMHSA, 2014).

1. What does "trauma-informed care" mean to you?
   (realise)

2. Do you feel you are able to recognise trauma when it presents in one of your clients? If yes, how?
   (recognise)

3. When you identify trauma in a client you are working with (or indirectly through your staff and service), how do you respond?
   (respond)

4. How can you tell if you or others are working in a trauma-informed way?
   (respond)

5. What do you think re-traumatisation is?
   (resist)

6. What would you do to prevent it re-traumatisation?
   (resist)

Questions related to research aim 2: participants' experience of barriers and facilitators to implementing/using TIC.

7. Do you think the TIC training made a difference in your clinical work?
   If yes, in what way? If no, could you tell me a bit more?
   (facilitator / barrier)

8. Are there any things that got in the way of implementing trauma-informed care?
   (barriers)
   Did you experience any barriers to change because of:
   a. your own perspective/beliefs/awareness/ knowledge/skills?
   b. clients/service users/carers/clients' family
   c. the team around you/team culture?
   d. the wider system/trust/community/society?

9. What would help you maintain your trauma-informed care skills in the future?
   (facilitate sustained implementation)

Questions related to research aim 3: How the training can be improved to aid participants' understanding and use of TIC.

10. How do you think the TIC training could be improved?
    (recommended improvements)
    - Any content you would have liked to cover?
    - Any format of learning that would have made it better e.g. role play, case studies?
    - Any structure of the training that you would change e.g. length, timing, frequency, top-up session, group size etc?
    - Is there anyone else you think should attend this training? (e.g. manager, support staff etc)
    - Is there anything you would definitely want to keep in the training (e.g. tools, topics, content)

Closing of Interview

Is there anything related to the TIC or the training that we haven't covered which you think it is important to share or discuss further?

Appendix G: Position Statement

I am a White, female, non-British migrant to the UK, in my early 30s, originating from a middle-class family in Central Europe.

I do not have any children. I have experience working with children in mental health services (UK), as well as social care and school setting abroad, not within the British system. I have no personal experience of mental health or social care services as a child but lived experience of young family members with mental health difficulties.

I have primarily conducted quantitative research including previous quantitative doctoral work (PhD in Experimental Psychology) in the area of PTSD and have some experience conducting interviews for research purposes, however am completely new to thematic analysis. My quantitative experience has greatly shaped my thinking around research questions, making qualitative approach a major learning process.

At the start of this research, I held a negative bias against trauma-informed care due to its conceptual vagueness and use as value-signalling buzzword in many settings, but set out to contribute to its clarification and evidence-base by grounding findings into a theory-based framework.

As part of my Clinical Psychology degree I have completed a foundation course in Systemic Family Therapy and have experience of keeping a year-long reflective log and using personal as well as group reflection and reflexivity. Keeping a reflective log throughout the qualitative research process has helped process frustrations, changes in thinking and my relationship to the data.

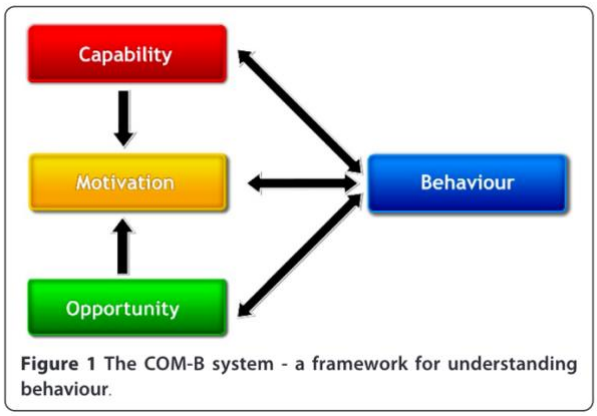
I have recently completed training as a Clinical Psychologist where the extensive teaching and supervision within the profession likely contributed to my understanding of what can be expected and defined as generic good practice and person-centred care. However, with such recent training and as one of the most highly qualified professions within the National Health Service (NHS), my perspective is likely skewed.

Appendix H: Behaviour Change Framework for Themes

A Behaviour Change Approach

Psychological theories can guide, structure and inform behavioural change, such as increased TIC use, in an evidence-based way. The widely used COM-B model (Michie et al., 2011) posits that the three essential factors of capabilities (C), opportunities (O) and motivations (M) are essential for behaviour (B) change to occur. See Figure 1. Capabilities includes physical (skills, training, practice) and psychological capabilities (knowledge, understanding, awareness, memory); opportunities consist of physical (resources, environmental context) and social opportunities (culture, social norms); and motivation incorporates reflective (thoughts, beliefs about capabilities) and automatic motivation (emotions). The model can be used to identify facilitators to behaviour change. The current study defines behaviour as t**he way a**n individual or group conducts oneself in response to the environment (Merriam-Webster, n.d.) which includes awareness, responses and inhibited responses.

Figure 1
The COM-B Framework



Note. 'The COM-B system - a framework for understanding behaviour' (Michie et al., 2011).

Overview of Themes and Subthemes

Six key themes were set by the COM-B model corresponding to capability, opportunity and motivational components which impact behaviour change. Twelve subthemes were derived from the participant interviews which impact the behaviour of trauma-informed care. For an overview see Figure 2.

CAPABILITY

Physical Capability

Importance of TIC-Specific Skills

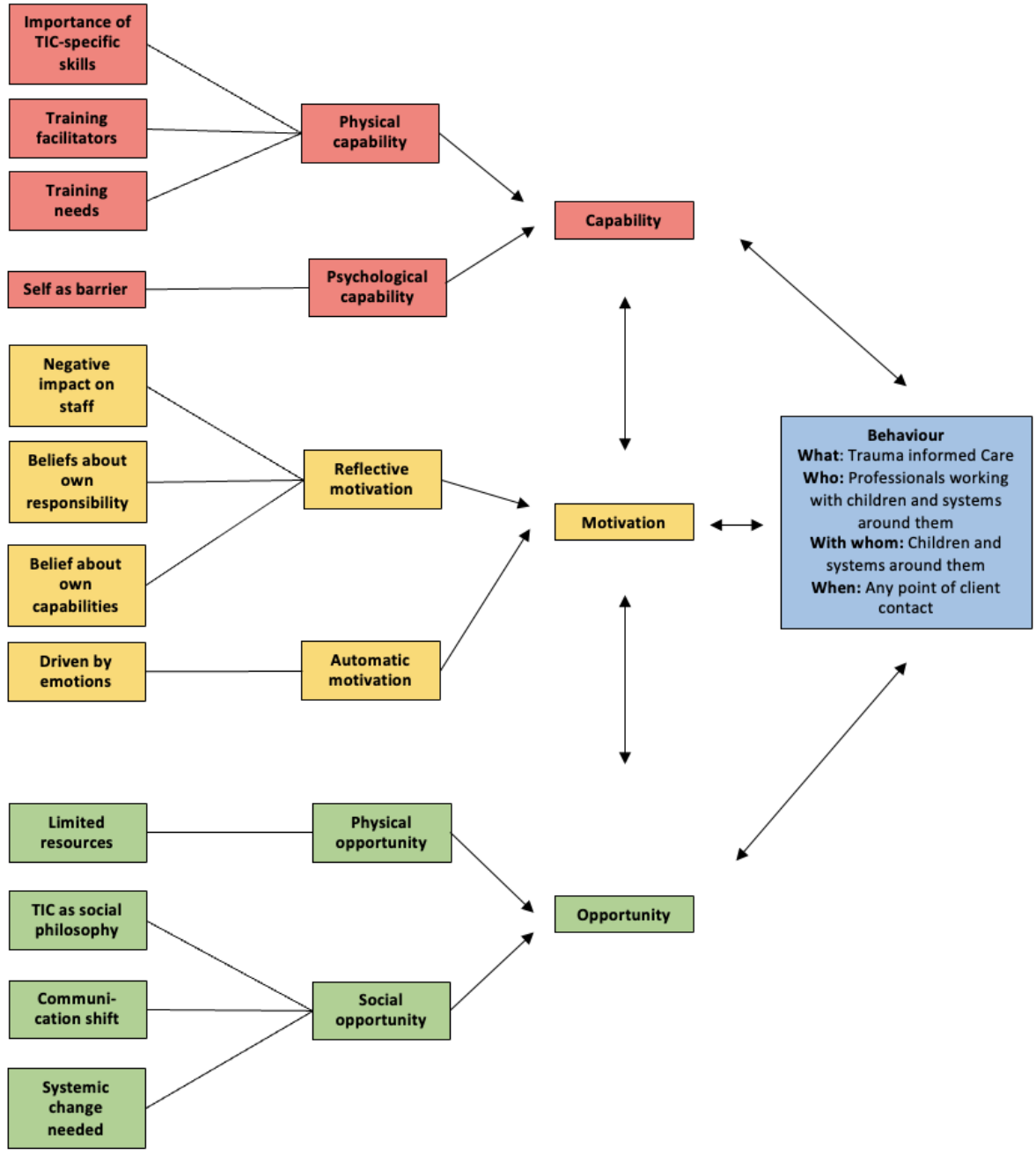
Participants varied in their understanding of what TIC should look like in practice. Some listed *specific trauma-informed skills*, such as "looking for adverse childhood experiences… anything they felt that happened, that it had a big impact on them" (P5[1]), with one team using a "trauma crib sheet" as "a prompt, what to ask and what to look for when going through those… tricky conversations." (P9). One emphasised the importance of consciously trying to prevent re-traumatisation by "checking out with the person what distresses them so you can make sure that it's not a trigger for them" and not unnecessarily asking people to retell their trauma (P4,P8,P9)

There was a pattern of TIC-specific behaviours of *empowering clients* and being client-led (P7). This included "getting permission for beginning that conversation and… understanding what… they want to do next after sharing something like that" (P4), "giving some control… back to that child" (P5).

[1] P = participant with the number referring to their unique identifier to preserve anonymity

Figure 2

Schematic of Themes and Subthemes Following the COM-B Model



Notes. The COM-B model (Michie, van Stralen, & West, 2011) was expanded with current subthemes. See an expanded schematic with more detailed subthemes in the Supplementary Material 2.

Others described their TIC understanding and implementation in ways that could be construed as *standard best practice*, such as validating client's experiences (P1) normalising (P7), using empathy (P8) and offering reassurance, not blaming the child (P7), and not

making assumptions (P1) but asking questions when unsure (P1). TIC was described as all-encompassing approach “putting the young person first and making sure all their needs are met” (P2).

Training Facilitators

Specifics of the *training format* were highlighted as helpful, especially interactive “discussion and hearing other people’s point of view” (P4) and case studies to benefit from the multidisciplinary perspectives: “if you had a teacher, a youth worker, a CAMHS worker, a statutory social worker, then me, and we're all looking at the same case study but everyone’s got different views because of their… different training” (P7).

Participants highlighted *particular content* they found helpful, such as specific metaphors, “that ‘window of tolerance’… either you're hypervigilant,…, but on the other end of the spectrum you completely shut down,” or stress visualised as “a cup being filled” (P10). Participants emphasised their new understanding of “different levels of [trauma] interventions”(P1) and “trauma not just being about traumatic experiences and formal PTSD as an entity” (P8). One particularly valued how “[the facilitator] went back to basics… and explained what trauma was, what it might look like, what being informed means” (P9).

Participants unanimously agreed on the *need for top-up trainings* or to “have like a check in session, maybe a couple of months later, just to see… have you had the opportunity to try anything new and how's it going?” (P9). Participants suggested “online resources… to go to independently to look at that are… clinically sound information and link to what you've learned” (P1) as well as “workbooks/sheets” (P4,P7), “infographics “(P2,P6), one noting that printouts were a “discussion point for a good week amongst all the staff" (P2). Finally, participants suggested reminders, “newsletters” (P6,P10), “or a mailing list of any updates” (P6).

Individual attributes of the training facilitator were highlighted as positively

contributing to the training, especially the facilitator's expertise (P1,P5), "infectious" passion (P5) and way of communicating (P2) and encouraging questions (P6).

Training Needs

Participants noted *specific staff groups* who didn't attend the training but would benefit from it, for example, "ensuring that manages are singing off the same song sheet as you" (P4), "clinical supervisors within the team who do the caseload and clinical supervision" (P6), and "particularly for my admin team…they have such limited training… around trying to understand and manage sometimes very difficult interactions with parents or others" (P12).

Clinicians working in specialist services were keen to receive training around their *specific client group* (P2) and "how they might present differently, like our autistic or ADHD population, if there were adaptations we'd want to make around that" (P1).

A few participants noted that that the TIC training *lacked implementation skills,* with one stating "I struggled to know what I could take from the training to implement with the wider team" (P9), while another had not used TIC since the training (P6).

Psychological Capability

Self as Barrier

While participants widely agreed that they had the capability to use TIC, some saw *themselves as barrier* to using it, noting "I don't think I'm perfect at recognising trauma" (P4), "recognising… there are limitations for myself… in how to manage [trauma]" (P1) and seeing trauma as something complicated and complex, where "trying to implement that is always tricky, 'cause it's about kind of where you pitch things and when to do that (P1). Multiple pronounced their poor memory as a barrier to TIC (P4,P8,P9) where "it's really hard to remember specifics" (P8) from the training.

MOTIVATION

Reflective Motivation

Negative Impact on Staff

Participants voiced concerns over the *negative emotional impact of trauma on themselves* and other staff (P1,P8,P10) and the potential for it to "trigger own trauma" (P6), describing: "some days if somebody is ringing me upset, I… sometimes don't want to talk about [trauma]… I do, but I don't want to … it's a lot to take on some days" (P4). Proposed solutions included broaching this topic in trainings and team conversation, exemplified by their recent TIC training: "we spoke about… the impact of trauma on the practitioner… about stress and burnout and… ways that we deal with that feeling in our practice…it's something that we don't talk about enough, especially when we're starting to feel burnout as practitioners (P4). Others suggested utilising self-reflection (P1,P6): "if you come away from a situation like taking on some of the emotion of the person you are speaking to… I think that can be really reflective of how that person is in it as well" (P4).

Beliefs About Own Role and Responsibility

A central theme was the question of who was responsible for using trauma-informed care. Some saw it as a significant barrier that they didn't have better access to TIC "experts", someone "more specialised" (P4) where children with trauma would "normally be referred on" (P7). A few merged this with their understanding of TIC as a *specialist topic* and not within their job: "we have to be clear what our remit is within our service and providing trauma work… isn't really something that we're set up to do" (P1), setting TIC equivalent to trauma work which "isn't ours to deal with" (P1).

Others viewed TIC as a topic *everyone is responsible.* The majority suggested that that therefore "everyone should attend the training" (P2,P3,P8,P10), arguing that "it'd be really helpful for us to all be at the same training and learning about the same topics so then

we have that shared knowledge. ‘Cause often there’s like four people sometimes working with one person, so I think consistency is really helpful” (P4) and indicating a shared responsibility to know and use TIC and prevent re-traumatisation (P4). One criticized that only individuals who were already interested in TIC attended the training (P5), placing the responsibility of using TIC on those with personal interests in the area, to which others suggested that training should be mandatory (P1,P7).

To facilitate shared responsibility, participants proposed *building TIC skills within their own teams* (P8) to decrease the need to refer to experts. Ideas included bringing TIC-related questions to managers meetings (P9), having trauma-informed supervision (P5), “weekly consult” or “having a “trauma-informed champion” (P8), asking questions within the team such as “have you considered trauma? How significant is that event?” (P6), and sharing and displaying TIC resources (P10).

Beliefs About Own Capabilities

Some described questioning their capabilities and skills in “opening that box” of trauma (P4). However, for multiple participants, the TIC training *increased confidence* (P1,P5) and comfort with the topic (P1), reassured and validated their existing skills and knowledge, and gave them “the language around [TIC] to evidence it and to feel confident that that's what I'm doing” (P5).

Automatic Motivation

Driven by Emotions

Participants’ *fears* impeded TIC use. For example, “people are reluctant to name things… even saying the T word in that fear” (P1), and worries about retraumatising were the “hardest thing” (P9) where “the natural urge would perhaps be to not go anywhere near [the trauma]” (P5). In contrast, TIC learning was facilitated by *positive emotions* (P9) such as interest in TIC (P1,P7,P8) and experiencing the training as enjoyable (P2,P4,P5,P6).

OPPORTUNITY

Physical Opportunity

Limited Resources

Systemic barriers were highlighted across sectors as impeding TIC usage, with "workers and services being really stretched" and *"*understaffed" (P5), making TIC use "really difficult" (P5), with one explaining: "I think, pressures are so high on people within services… that sometimes the focus can be on the problem at hand and not thinking wider" (P10). *Time pressures* (P2,P4,P9) were highlighted as a major factor limiting TIC use, based on the belief that "it takes time to talk about [trauma]…I don't want to… open that box then quickly shut it and it be more damaging to our family than if I'm just keeping it shut. So I think that's always a challenge" (P4) and balancing time demands: "when you've got a really long list of people to see… I'd love to be really trauma-informed for every single person we see, but I know in reality we're up against it." (P5).

Social Opportunity

TIC as Social Philosophy

Many participants described TIC as a general mindset or perspective (P1), rather than specific behaviour. This included the being aware and mindful of trauma (P5), recognising potential trauma and its impact on the young person or their system (P1,P6) and how trauma should be considered within next steps of care (P5). Emphasis was given to "holding in mind" the young person and family's experience (P9,10), their story, environment and context (P5,P10). In addition, TIC included being "incredibly mindful" (P8) of potential triggers for re-traumatisation (P6,P8).

Communication Shift

TIC was experienced across participants as a *change of narrative* (P5,P8) around the

young person, which included *TIC-specific language* (P2,P8) as a way of demonstrating that change of perspective and to "reframe what traumatic experience is" (P8). A TIC-narrative should de-blame and emphasise that the trauma "shouldn't have happened and wasn't their fault" (P5) and "lend itself to be more client-centred" (P8).

TIC also recognises *behaviour as a way for young people to communicate* (P1,P7) or respond to trauma (P2,P4), for example, reframing "young people who are 'naughty', 'don't follow instructions' or are 'aggressive'," to recognise "a child that's in distress" (P5), and describe behaviours as "attachment seeking, not an attention seeking" (P10), in short, using what is known about the child's experience and the system around them (P4) to understand their behaviour (P2,P4,P5,P7,P10). One pronounced that TIC also meant encouraging others to change their language away from "negative labels" and "helping the young person understand their behaviour differently" (P5).

Systemic Change Needed

Most participants emphasised that, for TIC to work, *implementation needed to be systemic,* across professionals, teams, services, agencies (P9) and "everyone around that young person" (P5), with some calling for a culture change towards becoming more trauma-informed (P8, P10). There was agreement that a joint approach across services was essential (P5, P9,P10), drawing on all resources around the young person (P9), such as parents, family, carers, school, social workers (P5) and "making sure that everyone around that child is aware of what's happened… aware of where we are now and what the plan is moving forward, and that we're all doing the same thing" (P9), noting: "I think the biggest barrier is individuals, whether in my team or in the system, not necessarily being aware of the training" (P8) or are "at different levels of being trauma-informed" (P10).

To facilitate systemic change in services, many noted that TIC should be modelled and encouraged '*top down'* (P5,P8,P10): "if it's something that we want embedded then it has

to come from the top down and it has to be reflected across all levels of the management team, through our supervision with staff and also how everybody treats each other within the team" (P5).

Interrelated results

All three research aims were captured within one model as they are closely interrelated: How participants understood TIC (aim 1) shaped what they saw as facilitators or barriers to behaviour change (aim 2). For example, participants' understanding of who is responsible for using TIC, influenced whether they noted facilitators as "increasing access to experts" or "increasing expertise within their own team." Many of the described facilitators and barriers to TIC (aim 2), could be increased or mitigated, respectively, through improved training (aim 3), for example, "belief in own capabilities" can be increased through training, and understanding of TIC (aim 1) as a "communication shift" facilitate de-blaming narratives around trauma.

Appendix I: Lay Summary

Adverse childhood experiences, such as traumatic events, for example being abused or neglected, have been shown in research to have a negative impact on people's mental and physical health later on. Individuals who have experienced trauma are vulnerable to becoming distressed or re-traumatised as a result of healthcare experiences. Understanding this led to the development of 'trauma-informed care' (TIC), for service providers to better equip themselves to respond to clients' needs by being 'aware, sensitive, and responsive to the potential impact of trauma'. Instead of asking clients "what's wrong with you", and only focusing on the problem, services should ask "what happened to you" and try to understand the client's past experience, what they went through and their context (e.g. family situation). TIC is meant to be used by all staff, so for example, by admin who greet clients at the door, therapists and leaders, and across all services, whether it's a school, mental health service, GP practice or hospital.

British services have been advised by the government to use TIC and train their staff in using it. However, previous research suggests that staff are often confused about what TIC actually means, how to put it into practice, and how trainings can be improved.

For this reason, a service that provides TIC training sought advice on how to improve their training. They had already trained staff who work with children and young people (e.g. in schools, social work, mental health services and charities) in TIC but wanted to know (1) training participants' understanding of TIC after being trained, (2) their experience of what helps and hinders them using TIC in practice, and (3) recommendations to improve the training. Semi-structured interviews were completed with 9 professionals across British health, social and education services. The study used a qualitative approach, so not numbers-based, but trying to understand people's subjective experiences.

The study found that participants' TIC understanding was in line with existing guidelines, although with minor disagreement over who is responsible for using TIC and what trauma means. Depending on how they understood TIC, they described different things that helped or stood in the way of using TIC. For example, if they thought TIC was only for specialists, then they said a barrier was not having access to enough specialists in their team. Many of the things that could help people use TIC, or currently stand in the way of them using it, could be changed through good training. The study therefore made a list of recommendations of how the training can be improved.

The study is important because it described how people understand TIC, what can be done to increase TIC use and how to improve trainings.

Appendix J: Clinical Impact Statement

Following information was added in line with journal guidelines.

Clinical Impact Statement

Individuals who experienced trauma are vulnerable to becoming distressed or re-traumatised through healthcare experiences. Trauma-informed care (TIC) was developed for service providers to better equip themselves to respond to clients' needs by being 'aware, sensitive, and responsive to the potential impact of trauma'. However, staff are often confused about what TIC means, how to put it into practice, and how trainings can be improved. This research evaluated a current TIC training and gives practical, theory-driven advice on how TIC trainings can be improved for staff to better understand TIC and be able to put it into practice.

Author contributions (CRediT statement)

Hjördis Lorenz: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Visualization, Writing—original draft, Writing—review & editing. **Carmen Chan:** Conceptualization, Methodology, Resources, Supervision, Validation, Writing—review & editing. **Ciorsdan Anderson:** Conceptualization, Methodology, Resources, Supervision, Writing—review & editing

Author Note

The project was approved and registered by Oxford Health NHS Foundation Trust Quality and Audit Team as service evaluation, and thus no ethical approval was needed. HL was funded by the Oxford Health NHS Foundation Trust for a Doctorate in Clinical Psychology. The authors have declared that they have no competing or potential conflicts of interest. We are grateful for all participants of the focus group and interviews.

Appendix K: Journal Guidelines
Relevant sections of submission guidelines for the journal proposed for the Service Improvement Project: **Psychological Trauma: Theory, Research, Practice, and Policy**

Journal Scope
Psychological Trauma: Theory, Research, Practice, and Policy® publishes empirical research on the psychological effects of trauma. The journal is intended to be a forum for an interdisciplinary discussion on trauma, blending science, theory, practice, and policy.

The journal publishes empirical research on a wide range of trauma-related topics, including:

- Psychological treatments and effects
- Promotion of education about effects of and treatment for trauma
- Assessment and diagnosis of trauma
- Pathophysiology of trauma reactions
- Health services (delivery of services to trauma populations)
- Epidemiological studies and risk factor studies
- Neuroimaging studies
- Trauma and cultural competence

The journal publishes articles that use experimental and correlational methods and qualitative analyses, if applicable.

All research reports should reflect methodologically rigorous designs that aim to significantly enhance the field's understanding of trauma. Such reports should be based on good theoretical foundations and integrate theory and data. Manuscripts should be of sufficient length to ensure theoretical and methodological competence.

Summary of Submission Guidelines
Length. Manuscripts for ***Psychological Trauma: Theory, Research, Practice, and Policy*** can vary in length, but may not exceed 28 double-spaced manuscript pages (including title page, abstract, manuscript body, references, and tables/figures.) Manuscripts that exceed this length may be returned without review. Authors do have the option of electronically archiving supplemental material, such as tables and figures, in order to assist them in keeping their articles to the required length.

While Psychological Trauma primarily publishes original empirical studies, we are also open to reviewing high-quality literature reviews and clinical, qualitative, theoretical, and policy articles. Replication studies are welcome if they provide conclusive results.

Prepare manuscripts according to the *Publication Manual of the American Psychological Association* using the 7th edition. Manuscripts may be copyedited for bias-free language (see Chapter 5 of the *Publication Manual*). Review APA's Journal Manuscript Preparation Guidelines before submitting your article.

Double-space all copy. Other formatting instructions, as well as instructions on preparing tables, figures, references, metrics, and abstracts, appear in the *Manual*. Additional guidance on APA Style is available on the APA Style website.
Tables. Use Word's insert table function when you create tables. Using spaces or tabs in your table will create problems when the table is typeset and may result in errors.

Author contributions statements using CRediT.
The *APA Publication Manual* (7th ed.) stipulates that "authorship encompasses…not only persons who do the writing but also those who have made substantial scientific contributions to a study." In the spirit of transparency and openness, *Psychological Trauma* has adopted the Contributor Roles Taxonomy (CRediT) to describe each author's individual contributions to the work.

Abstract and keywords.
All manuscripts must include a structured abstract divided into the following sections, with headings: objective, method, results, and conclusions. The abstract should be no longer than 250 words and should be followed by five keywords, or brief phrases.

Clinical Impact Statements
Authors are asked to include a short statement of no more than 100 words, written in conversational English, that summarizes the article's findings and why they are important to practice. This new article feature allows authors greater control over how their work will be interpreted by a number of audiences (e.g., practitioners, policy makers, news media). This text should appear in your manuscript, below the abstract, in a section titled "Clinical impact statement."

Openness and transparency.
Authors should state all sources of financial support for the conduct of the research (e.g., This research was supported by Award XX from the Eunice Kennedy Shriver Institute of Child Health and Human Development) in the author note. If the funding source was involved in any other aspects of the research (e.g., study design, analysis, interpretation, writing), then clearly state the role. If the funding source had no other involvement other than financial support, then simply state that the funding source had no other role other than financial support. Authors should also provide a conflict of interest statement in the author note disclosing any real or potentially perceived conflict(s) of interest, including financial, personal, or other relationships with other organizations or companies that may inappropriately impact or influence the research and interpretation of the findings. If there are no conflicts of interest, this should be clearly stated.

Participant description and informed consent.
The method section of each empirical report must contain a detailed description of the study participants, including (but not limited to) the following: age**,** gender**,** ethnicity**,** nativity or immigration history**,** socioeconomic status**,** clinical diagnoses and comorbidities (as appropriate)**,** any other relevant demographics**.** In both the abstract and in the discussion section of the manuscript, authors should discuss the diversity of their study samples and the generalizability of their findings. The method section also must include a statement describing how informed consent was obtained from the participants (or their parents/guardians), including for secondary use of data if applicable, and indicate that the study was conducted in compliance with an appropriate Internal Review Board.

References.
List references in alphabetical order. Each listed reference should be cited in text, and each text citation should be listed in the references section.

Appendix L: Supplemental Material 1: Additional Illustrative Quotes for Themes

CAPABILITY

Physical Capability

Importance of TIC-Specific Skills

Specific trauma-informed skills
"I suppose they very easily could just skip over life events that have happened and just deal with the presenting need of the anxiety or low mood or whatever… and not ask the questions and not even consider it, so I'm hopeful that they're not doing that, hopefully they are considering the potential for trauma." (P6[2])

As central to TIC, one participant summarised "being really curious about trauma as a starting point and thinking about what the impact is and then use that to… inform what we're doing next" (P5) and the importance of naming and acknowledging trauma (P1). One quoted the TIC maxim "What's wrong with you vs what happened to you", describing it as powerful way to refocus on their story and environment (P10).

Not unnecessarily asking people to retell their trauma (P9), "we have to think about whether that assessment is clinically indicated, therapeutically indicated, and what are the risks of doing it versus not doing it. Because actually getting somebody to retell their story over and over again as we do, like, can lead to re-traumatisation. So we are incredibly mindful of that." (P8), and not "discussing trauma without the goal of therapeutically understanding the trauma" (P4).

TIC-specific behaviours of empowering clients
Giving the child options and involving them in decisions, "or if you do have to tell people, who you're telling them, why you're having to tell them" (P5).

Participants emphasised the need to acknowledge the trauma (P1) and give clients the space to talk and choice over next steps: "I suppose, if I was the young person who had told somebody about a traumatic event, if they then never acknowledged it again or they then never did anything with that information or did lots of stuff without information but didn't tell me, that's probably really re-traumatising in terms of not having control over your own story or what happens to it" (P5).

TIC understanding as standard best practice
TIC was described as all-encompassing approach "putting the young person first and making sure all their needs are met" (P2) with definitions of "continuing doing what is needed at that time, being… willing to be flexible…(P2) and "just taking a really sensitive approach to what we're doing… being really careful in the way that we manage it" (P5) as well as ensuring safety (P5), logging safeguarding concerns (P2) and noting boundaries and confidentiality (P7). Some participants set TIC equivalent to other approaches, such as "that person-centred approach" (P2) or wondering about the attachment the child may be experiencing (P4). While

[2] P = participant with the number referring to their unique identifier to preserve anonymity

one stated that in their TIC approach “I don't think I respond in any particularly different way now… I've always been able to empathically respond to people” (P8).

Training Facilitators

Specifics of the training format that were helpful
“I quite like a live example… it kind of helps me… relate specific things that we can try” (P9). The majority of participants would have preferred training in person instead on online, as was necessary during the Covid-19 pandemic: “I suppose, when you're… doing it online, sometimes people are not… contributing as much as they would do face to face, not sharing experiences.” (P6). Multiple would have appreciated it to be “longer, like all day… I'd like to expand on a few more areas,” (P2) or even that it’s too short for its purpose “I don't think you could become trauma informed from a 2 hour introduction” (P7).

Particular content participants found helpful
[No additional quotes]

Need for repetition and top-up trainings
“Just keeping that as a sort of hot topic to consider and to ask questions of the team: ‘and have you considered trauma?’ ” (P6).

“Having an introduction is great, but I think having more is helpful, especially because you can't become trauma informed over a small period of time” (P7), “you just want a deeper understanding” (P10).

Participants noted that they found “laminated printouts” (P5), “worksheets” (P7), “diagrams and flow charts” (P7) useful. They described the visuals as particularly helpful: “that's something you could share with somebody as well” (P10), “we've printed them out and we put them all up in the staff room… it was a discussion point for probably a good week amongst all the staff" (P2).

Individual attributes of the training facilitator
“[The facilitator] got a lot of knowledge around and there's something that's maybe a bit infectious about that, yeah, the passion to do that sort of work.” (P5), “[the facilitator’s] style of delivery as well, just helped it feel accessible too, and she has that very warm, engaged way of…talking with others about a very tricky subject” (P1).

Training Needs
Training for specific staff groups
Newcomers should be trained, “it really ought to be part of people’s inductions” (P5).

Training for their specific client group
“How can you help people who are non-verbal with a severe learning disability too?” (P2) or focus on different ages “I wanted to explore more… with adults, 'cause [the training] is very… child focused” (P7).

Training lacked implementation skills
Participants proposed learning implementation through case studies to “just sort of talk through it, like how the [TIC] process has helped them, what helped them…” (P2) and “how

you could, sort of, specifically implement a strategy alongside that type of case scenario" (P9).

Psychological Capability

Self as Barrier

Some participants' understood TIC *as something complicated/complex,* "trying to implement that is always tricky, 'cause it's about kind of where you pitch things and when to do that and having time because it feels like, to me, trauma is a kind of topic that needs time, needs, thought, needs kind of reflection. It's not something you can, just… implement and off everybody goes... it brings about lots of feelings in people." (P1).

MOTIVATION

Reflective Motivation

Negative Impact on Staff

Negative emotional impact of trauma on themselves

"We spoke about… the impact of trauma on the practitioner… about stress and burnout and… ways that we deal with that feeling in our practice and I really enjoy talking about that… and I think it's something that we don't talk about enough, especially when we're starting to feel burnout as practitioners. Like, I never hear anybody in the office speaking about how they feel burnt out from… these trauma informed conversations." (P4).

Some participants suggested to use self-reflection: "I just love all that the reflective practice… giving me time to think about how I'm feeling in the situation, 'cause I think that's quite often a tell-tale sign. Like if you come away from a situation like taking on some of the emotion of the person you are speaking to a like, I think that can be really reflective of how that person is in it as well." (P4). "You know, if it feels difficult to talk about something, what is that? What's going on for us in that moment kind of thing? So if I'm finding it hard to talk about, you know, within my supervision, or with my colleagues about a situation, if that was related to trauma or abuse, or you know whatever it might be, that would be a little flag to me. I guess to check in with myself" (P1).

Beliefs About Own Role and Responsibility

TIC as a specialist topic

Trauma was seen as a "quite specific difficulty" (P1), stating "we don't directly deal with loads of trauma, so it's not going to be an everyday conversation" (P6) or question whether it is separate work incompatible with their primary commissioned work "I think there's… the fact that that services need to prioritise the work they do. [Neuro-specialisation] is our focus and sometimes it might feel well the trauma stuff isn't ours to deal with, you know. But then you know I'd be saying, well, no, it is." (P1) and the need to refer any trauma externally "if I work with children that have trauma, normally they would go to CAMHS" (P7).

As TIC facilitators, multiple noted having access to an expert, "somebody… who has more than just the average level of trauma informed knowledge is helpful… just anything more specialized… is really good." (P4) and having trauma informed supervision (P5), especially when "recognising… if there are limitations for myself or others in how to manage that…

then seeking support from colleagues in different services" (P1).

Everyone is responsible
"So yeah, basically, the biggest barriers I would say are not everyone having had the training and not having the renewal of the training. To me, it should kind of be a service requirement. And then uhm having somebody in the team that can, I guess, keep that practice and keep it very fresh" (P8).

One emphasised that "all of the interactions we have with these young people can be therapeutic and can be an intervention and that we can use some trauma informed care as a way of doing that" (P5). Others cast even broader "I think any grade, any level could do with that. I think schools and GP's, I think parents even, I think young people even. So I don't think there's anyone that this training should not be delivered to" (P8), indicating a shared responsibility as system around a young person.

One raised the barrier and critique of only individuals already interested and using TIC attending the training "and there was perhaps people that weren't there who should have been there. Trying to be really diplomatic about it." (P5).

"It's all of our responsibility to keep the [TIC] conversation going. And I think us speaking this morning has reminded me again that I have a responsibility to do that too" (P9).

Building TIC skills within their own teams
Ideas included bringing TIC-related questions to managers meetings (P9), ask questions within the team such as "have you considered trauma? How significant is that event?" (P6) being able to talk about it in supervision, with colleagues (P1), having "weekly consult" or "rotating training" and having a "trauma informed champion" (P8) within each team "or a psychologist in your team who is very rehearsed and versed in that practice, you could have someone kind of almost calling you out when language isn't particularly in line with trauma informed care or, you know, identifying when a formulation doesn't quite meet the… the trauma informed care principles" (P8) or "question person" to discuss TIC questions and explore whether "we are thinking in a trauma informed way to whether we've completely missed it" (P9). Other ideas included sharing and hanging up TIC resources (P10) within the team.

One described the training as "really helpful in distinguishing… what is the kind of thing that's everyone responsibility, what other things that are more specialist within a team, and then what things are even more… specialist or higher level of needs that… we need to be referring to others. So again sharing that responsibility and thoughtfulness about what that young person needs is really important… and recognizing that I don't need to be doing the top layer. That's not my role within my job, kind of thing. So that was definitely really helpful" (P1).

Beliefs About Own Capabilities

Increased confidence
Training increased confidence by giving participants "the language around [TIC] to evidence it and to feel confident that that's what I'm doing." (P5) and left one participant "empowered that I… knew what I was doing" (P5).

Automatic Motivation

Driven by Emotions

Fears
[No additional quotes]

Positive emotions
[No additional quotes]

OPPORTUNITY

Physical Opportunity
Limited Resources

Systemic barriers
One participants described how “people are really under pressure” and being “up against a waitlist so things don't happen in the kind of sequence that you’d hope they did. That actually things don't change 'cause there's just a wait for other services to come on board” (P5) and “there's just such on waiting lists all the time to get advice” (P4). It was suggested that, in this environment, TIC can be “really difficult” as TIC is “such a subtle approach in which you need to be really… thoughtful and mindful and plan about what you're doing and you're saying that… perhaps gets lost” (P5), with the service pressures directly limiting their ability to apply TIC: “I think, pressures are so high on people within services at the moment that the focus… that sometimes the focus can be on the problem at hand and not thinking wider” (P10).

Time pressures
“We have quite a short window of time to build a rapport with somebody… we have our questions, we know what we need to get… and probably what we interpret as maybe just a question might be something very different for a patient that's experienced trauma” (P9). Within this the perception that talking about trauma and applying TIC takes time, which many services don’t have: “we're always focused on time scales and I think trauma is such a deep-rooted area like it takes time to talk about it and I want to give it time, I don't want to kind of open that box then quickly shut it and it be more damaging to our family than if I'm just keeping it shut. So I think that's always a challenge” (P4).

“Social workers particularly, they're lovely, but they’re just… overworked, and they just don't seem to have the time to support families as much as they can” (P2).

Social Opportunity

TIC as Social Philosophy
Emphasis was given to “holding in mind” the young person and family’s experience (P9), their story, environment and context (P10), thereby shifting thinking from “what’s wrong with you”, to “what happened to you” (P10). In addition, being “incredibly mindful” (P8) of what the potential triggers to re-traumatisation are (P6,P8). Using this philosophical stance included a social responsibility of “making other people aware” of trauma and TIC, whoever

else is working with the young person (P5). It was important to consider a child's wider context (P10), environment (P5) such as understanding what's going on in families (P9,P10).

Considering that mental health difficulties could be trauma-based (P5).

Using this philosophical stance extended to a social responsibility of "making other people aware" of trauma (P5).

Communication Shift

This communication shift was taken a step further towards others by "helping the young person understand their behaviour differently" and "supporting people to change the language that they're using" and "getting them to think of it more from that perspective rather than… the negative label that might come" (P5)-

Change of narrative

One participant explained the rational for changing the narrative where, "if the narrative doesn't change, that young person and people still…aren't able to make sense of why they do what they're doing, and perhaps that's a trauma response, and they continue to have maybe quite a punitive… response to that child for what they're doing… that would probably be quite re-traumatizing as well" (P5). Instead, changing the story around the child "in the hope that it might invite support" (P5).

Behaviour as a way for young people to communicate

TIC was seen as a "way to look at a behaviour compassionately and trying to think: What is the system around the behaviour? What is going on underneath, which may not be as blatant as we may think." (P4), for example, is it behaviour to "protect themselves?" (P7). Some described using "unexpected" (P4) or "risky behaviours" (P4,P10) as trigger to ask more questions and using what is known about the child's experiences too understand their behaviour (P2,P5,P7).

Systemic Change Needed

It was argued that for such systemic change *"*to be really successful" (P8), all parts of the system needed to be trained in TIC. "I think the biggest barrier is individuals, whether in my team or in the system, not necessarily being aware of the training" (P8) or are "at different levels of being trauma informed" (P10). The benefit of everyone being trained would be that "you could be really clear that what you're giving actually is at trauma informed approach, not just using that label for any piece of work so it ticks a box" (P5), especially in the context of TIC as a buzzword in many services.

Participants emphasised not working in isolation but seeking "information" (P6) and "support from and liaising with other services" (P1), "sharing that responsibility with others," , "thinking about it together,", "sharing that responsibility and thoughtfulness about what that young person needs is really important " (P1) and enduring safe system around child (P9).

It was pointed out that this needed "buy in" (P5) from the family, being "very reliant on the family quickly sort of trusting us" (P9) and that "direct barriers with the child or the family is sometimes a foot in the door" (P5). Multiple highlighted that TIC required close communication with parents, schools and teachers and asking them directly what they have noticed (P5,P6,P10).

One criticised how frequent responses to trauma placed the responsibility for change on the child and them "having to do something" instead of it being placed "on all us, it's the adults having to make a shift for them, and that just providing that safe and stable environment alone might be enough" (P5) with another supporting the idea of TIC as "adapting the environment" for the child (P2).

Top down change needed

"If managers are informing our direction, like, I think it needs to drip down from the top." (P4), "everybody needs to be using it and that those of us in more senior positions can be encouraging it and demonstrating it" (P5).

Appendix M: Supplemental Material 2: Expanded Schematic of Themes

Figure 1

Expanded Schematic of Themes and Subthemes Following the COM-B Model



Notes. The COM-B model (Michie, van Stralen, & West, 2011) expanded with themes and subthemes based on the current study.

Appendix N: Supplemental Material 3: Recommendations for Individuals, Teams, and Services

Table 3

Recommendations to Facilitate Behaviour Change Towards TIC Use for Individuals, Teams and Services

Individuals	**Continued learning:** • Attend trainings
	Memory aids: • Store and review own resources • Set reminders for oneself to use TIC
	Mitigate the impact of trauma: • Use self-reflection to spot impact of trauma • Utilise supervision to discuss the impact of trauma • Seek support for TIC where necessary
Teams	**Build expertise within teams:** • Assign a TIC champion • Consider TIC within team meetings, case discussions, managers meetings • Explicitly note that all are responsible for TIC • Include TIC in supervision • Have regular or "rotating" training • Weekly TIC consults or TIC supervision • Share TIC resources within the team • Display resources in physical team locations
	Scaffold TIC-specific skills • "Crib-sheet" of TIC questions to ask
	Connect to experts • Clear access to TIC experts
	Support staff • Create safe environment to disclose impact of trauma on staff / burnout / fatigue
	Recommendation 4
Health, education & social services	**Ensure that staff have the necessary resources**: • Stuffiest staffing • Shorter waitlists • More time to allow use of TIC • Easier access to trauma specialists • Encourage and enable staff to attend TIC training
	Emphasise TIC values across services: • Share TIC awareness/mindset/perspective • Agree on joint approach / all using TIC
	Ensure managers are leading TIC top-down • Managers modelling TIC

• Supervisors and managers encouraging TIC
Create trauma-informed environments: • Ensure all parts of the client's support team are working in a trauma informed way (e.g. school, social worker, parents)
Use TIC language: • Share language and narrative shift from "what's wrong with you" to "what happened to you" • Narrative of client that takes trauma into account • Share understanding that behaviour can be a way to communicate trauma

Appendix O: Sponsorship Approval

RESEARCH SERVICES
UNIVERSITY OF OXFORD

Research Governance, Ethics & Assurance
Boundary Brook House
Churchill Drive
Headington, Oxford
Oxon
OX3 7GB

To whom it may concern

Date: 06/09/2022

Title: Evaluation of a rumination intervention for individuals with PTSD: A case series

PID: 16419

Protocol Date 6th September 2022/Version:1

The above study has been designed by Dr Jennifer Wild and colleagues at the University of Oxford and funded by the Oxford Institute of Clinical Psychology Training. I confirm that the University will accept the role of Research Sponsor of this Study and will comply with the requirements of the UK Policy Framework for Health and Social Care Research October 2017.

Insurance-provided indemnity arrangements are in place for the project with Newline Underwriting Management Ltd., at Lloyd's of London.

Sponsorship is confirmed subject to the condition that the following are sent to Research Governance, Ethics & Assurance for review prior to submission to the Research Ethics Committee. Failure to do so may compromise insurance cover for the project.

- Any minor or substantial amendments
- Any extension to the study end date
- Addition of any new research site or patient identification centre

In addition, annual progress reports, the end of study notification and final report must be copied to Research Governance, Ethics & Assurance.

Lastly, where they exist, University Core SOPs must be followed by default for all clinical research sponsored by the University. Further information can be found here: https://researchsupport.admin.ox.ac.uk/ctrg/resources

Any communications relating to Research Sponsorship should be directed to the undersigned.

Yours faithfully

DocuSigned by:
Ronja Bahadori
A882F4C4C5154C5...

Dr Ronja Bahadori

Tel: +44 (0)1865 616480, Email: https://researchsupport.admin.ox.ac.uk/contacts/rgea#/

Appendix P: Ethics Approval

Ymchwil Iechyd a Gofal Cymru
Health and Care Research Wales

NHS
Health Research Authority

Dr Jennifer Wild
Department of Experimental Psychology, University of Oxford
OX1 1TWN

Email: approvals@hra.nhs.uk
HCRW.approvals@wales.nhs.uk

21 October 2022

Dear Dr Wild

HRA and Health and Care Research Wales (HCRW) Approval Letter

Study title:	**Evaluation of a rumination intervention for individuals with PTSD: A case series**
IRAS project ID:	**318316**
Protocol number:	**n/a**
REC reference:	**22/WM/0224**
Sponsor	**N/A**

I am pleased to confirm that **HRA and Health and Care Research Wales (HCRW) Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

Please now work with participating NHS organisations to confirm capacity and capability, in line with the instructions provided in the "Information to support study set up" section towards the end of this letter.

How should I work with participating NHS/HSC organisations in Northern Ireland and Scotland?
HRA and HCRW Approval does not apply to NHS/HSC organisations within Northern Ireland and Scotland.

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report (including this letter) have been sent to the coordinating centre of each participating nation. The relevant national coordinating function/s will contact you as appropriate.

Please see IRAS Help for information on working with NHS/HSC organisations in Northern Ireland and Scotland.

How should I work with participating non-NHS organisations?
HRA and HCRW Approval does not apply to non-NHS organisations. You should work with your non-NHS organisations to obtain local agreement in accordance with their procedures.

What are my notification responsibilities during the study?

The standard conditions document "*After Ethical Review – guidance for sponsors and investigators*", issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics, and is updated in the light of changes in reporting expectations or procedures.

Who should I contact for further information?
Please do not hesitate to contact me for assistance with this application. My contact details are below.

Your IRAS project ID is **318316**. Please quote this on all correspondence.

Yours sincerely,



Margaret Hutchinson
Approvals Specialist

Email: approvals@hra.nhs.uk

Copy to: *RGEA*

List of Documents

The final document set assessed and approved by HRA and HCRW Approval is listed below.

Document	*Version*	*Date*
Contract/Study Agreement template [R82384_mNCA_Jan_2021_draft]		
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [UoO Insurance Policy]	1	29 July 2022
Interview schedules or topic guides for participants [Outcome measures overview_Incl_Exit interview topic guide_V1_6.9.22]	1	06 September 2022
Interview schedules or topic guides for participants [Study intervention overview_V1_6.9.22]	1	06 September 2022
IRAS Application Form [IRAS_Form_12092022]		12 September 2022
IRAS Application Form XML file [IRAS_Form_12092022]		12 September 2022
IRAS Checklist XML [Checklist_12092022]		12 September 2022
Letter from funder [Confirmation of Funding]	1	20 April 2022
Letter from sponsor [Sponsor letter]	1	06 September 2022
Letters of invitation to participant [Recruitment Email_V1_6.9.22]	2	18 October 2022
Organisation Information Document [OID outline]	1	11 October 2022
Other [Email template if individual not eligible]	2	30 September 2022
Other [Participant reminder for questionnaire completion_V1_6.9.22]	1	06 September 2022
Other [Participant debriefing_V1_6.9.22]	1	06 September 2022
Other [Content Rumination Intervention Module]	1	30 September 2022
Other [Email templates to IAPT about study participation]	1	30 September 2022
Other [Response to REC 19.10.22]	1	19 October 2022
Participant consent form [Remote Consent Form_V1_6.9.22]	2	18 October 2022
Participant information sheet (PIS) [Participant Information Sheet_V2_18.10.22]	2	18 October 2022
Research protocol or project proposal [Clinical trial protocol_V1_6.9.22]	1	06 September 2022
Schedule of Events or SoECAT [Schedule of Events]	1	06 September 2022
Summary CV for Chief Investigator (CI) [CV for Chief Investigator]	1	30 May 2022
Summary CV for student [CV for student]	1	18 June 2022
Summary CV for supervisor (student research)		

Appendix Q: Research & Development Approvals from Participating Sites

Professor Andrea Cipriani
Associate Director of Research & Development
Warneford Hospital
Warneford Lane
Oxford
OX3 7JX
Email: research@oxfordhealth.nhs.uk

21/11/2022

Confirmation of Capacity and Capability

Re: Evaluation of a rumination intervention for individuals with PTSD: A case series
Research and Development Reference: 16419
IRAS Reference: 318316
Research Ethics Committee Reference: 22/WM/0224
Sponsor: University of Oxford

Dear Dr Jennifer Wild,

On behalf of Oxford Health NHS Foundation Trust, I am pleased to confirm Trust Capacity and Capability for the above research as outlined in the application received.

The study is not supported by a Research Delivery Team

The study team members are as follows: Hjordis Lorenz

Approved Documents

Protocol Version 1 dated 06/09/2022 is recognised as the most current to date.

The documents approved for use at this Trust are as listed in the following approval documents:
Health Research Authority Letter dated: 21/10/2022
Research Ethics Full Approval Letter dated: 20/10/2022

Any subsequent, relevant amendments are additionally included to date.

Metrics and Recruitment

First participant target date: 31/12/2022
Recruitment target figure: 1 - 14
Recruitment target date: 28/02/2023
Anticipated study end date: 28/02/2023

To comply with national research performance requirements the Trust will monitor and publish recruitment for your study:
1. Performance of the recruitment of the first participant.
2. Recruiting planned participants to time and target.

Reporting recruitment via Siteline

As confirmed during the study set-up study accruals will be recorded via Siteline. It was agreed that **Hjordis Lorenz** will update the records at least one a month and no later than 7th of each month (e.g. by 7th August upload accruals for July etc.)

Should you feel at any time that you will be unable to realistically achieve your contracted recruitment target, please get in touch with the Research Team on research@oxfordhealth.nhs.uk as soon as possible.

Conditions of Approval

The following conditions apply to this approval:

a) The study is conducted in compliance with all the relevant legislation and the relevant OHFT policies.
b) All staff working on the study have the appropriate training and experience and have responsibilities formally delegated to them.
c) Should you plan to leave your position in OHFT, you will notify RD immediately of your plans, to enable discussions around the future of study conduct.
d) The Trust expects the named Principal Investigator to allocate regular support time to the study; this must be agreed with the research team prior to the study commencing. This may be reviewed by RD at any time.
e) All relevant documents will be maintained and will be sent to research@oxfordhealth.nhs.uk, to facilitate compliance checks, formal audits and regulatory inspections.
f) You will notify RD via the email above of any protocol amendments.
g) You will promptly inform RD via the email above of the end of the study.
h) You will respond in timely manner to RD periodic checks email.

I wish you every success with the study.

Yours sincerely,



Professor Andrea Cipriani
Associate Director of Research Development

Healthcare from the heart of your community

Berkshire Healthcare NHS
NHS Foundation Trust

Louisa Dosanjh
Talking Therapies
Berkshire Healthcare

Research & Development
Psychology Department · University of Reading
Whiteknights Road · Earley · RG6 6AL

t: **0118 378 5650**
f: **0118 378 5705**
e: **research@berkshire.nhs.uk**

23/11/2022

Dear Louisa Dosanjh

RE: CONFIRMATION OF CAPACITY AND CAPABILITY

Study Title: Evaluation of a rumination intervention for individuals with PTSD

BHFT REF: 2022-23 **IRAS Project ID**:318316 **Non- Portfolio study**

I am pleased to confirm that Berkshire Healthcare NHS Foundation Trust (BHFT) has the capacity and capability to undertake the above named research study. This confirmation is dependent on formal approval from the HRA, which includes a favourable ethical opinion (where required) from a National Research Ethics Service Committee if applicable. The HRA approved documents should be provided to us, and where appropriate, all localised patient facing documents.

Berkshire Healthcare NHS Foundation Trust agrees to start this study on 22/11/2022 as previously discussed with you. This confirmation of capacity and capability is dependent on you and the sponsor commencing the study within 3 months from the date of this letter. If the study does not commence by 22/12/2022 then please notify the R&D office as the Trust position may have changed and this confirmation of capacity and capability may need to be reassessed. This study ends on 28/02/2023.

Recruitment

You are required to inform us the number of participants recruited on a monthly basis until the end of the study. The Trust's involvement in your study will end on 28/02/2023. Please provide us with the end of study report when you finish your study activities and do contact the R&D department should you have any concerns research@berkshire.nhs.uk

Access to NHS for Research Purposes

Completion of a Research Passport Application may be required for researchers who do not hold a substantive or honorary contract with an NHS organisation. Research activity should not take place at this site until either a Letter of Access or Honorary Research Contract has been issued for individuals where this applies. Please contact the R&D office to check if this is required.

From the **1 July 2015 Berkshire Healthcare NHS Foundation Trust** is a **smoke free** organisation.
To help protect our staff and people who use our services from the harmful effects of tobacco smoke, please do not smoke anywhere on our sites, or during appointments when our staff are at your home. If you would like support to quit please speak to your healthcare professional or contact **Smoke Free Life Berkshire** on **0800 622 6360** or text **QUIT** to **66777**

Governance & Compliance

It is the Trust's expectation that the study will comply with all applicable and relevant laws, such as the General Data Protection Regulation (GDPR) May 2018, the Human Tissue Act (2004), the Mental Capacity Act (2005) and adheres to the UK Policy Framework for Health and Social Care Research (2018), the principles of (ICH) Good Clinical Practice (GCP) and the NHS Confidentiality Code of Practice (Nov 2003) and if applicable the Clinical Trial regulations.

Berkshire Healthcare Foundation Trust R&D Website

In order to comply with the UK Policy Framework for Health and Social Care Research (2018) and your ethical approval we will list your study on our Trust's website.

Please note that the Trust, as host organisation, is required to monitor research to ensure compliance with the UK Policy Framework and other legal and/or regulatory requirements and you may be asked to provide access to authorised individuals from the R&D office for monitoring or audit purposes.

In working with the Trust there is an expectation that the following are provided to the R&D office in a timely manner;

- date of first participant recruited
- ongoing recruitment figures
- copy of reports to the HRA/REC
- any substantial or non-substantial changes relevant to the BHFT
- final report on completion of the study
- any publications arising from the study
- immediate notification of changes in involvement of key site personnel

If you wish to discuss this further, please do not hesitate to contact the R&D Office.

Kind regards



Kate Penhaligon

Head of Research and Development

From the **1 July 2015 Berkshire Healthcare NHS Foundation Trust** is a **smoke free** organisation.
To help protect our staff and people who use our services from the harmful effects of tobacco smoke, please do not smoke anywhere on our sites, or during appointments when our staff are at your home. If you would like support to quit please speak to your healthcare professional or contact **Smoke Free Life Berkshire** on **0800 622 6360** or text **QUIT** to **66777**

Appendix R: Participant Information Sheet

Trainee Clinical Psychologist: Hjordis Lorenz hjordis.lorenz@oxfordhealth.nhs.uk
Principal Investigator: Jennifer Wild jennifer.wild@psy.ox.ac.uk
Official study title: Evaluation of a rumination intervention for individuals with PTSD: A case series

PTSD Rumination Intervention

PARTICIPANT INFORMATION SHEET

We'd like to invite you to take part in our research study.
Before you decide, it is important that you understand why the research is being done and what it would involve for you. Please take time to read this information, and discuss it with others if you wish. *If there is anything that is not clear, or if you would like more information, please ask us (hjordis.lorenz@oxfordhealth.nhs.uk).*

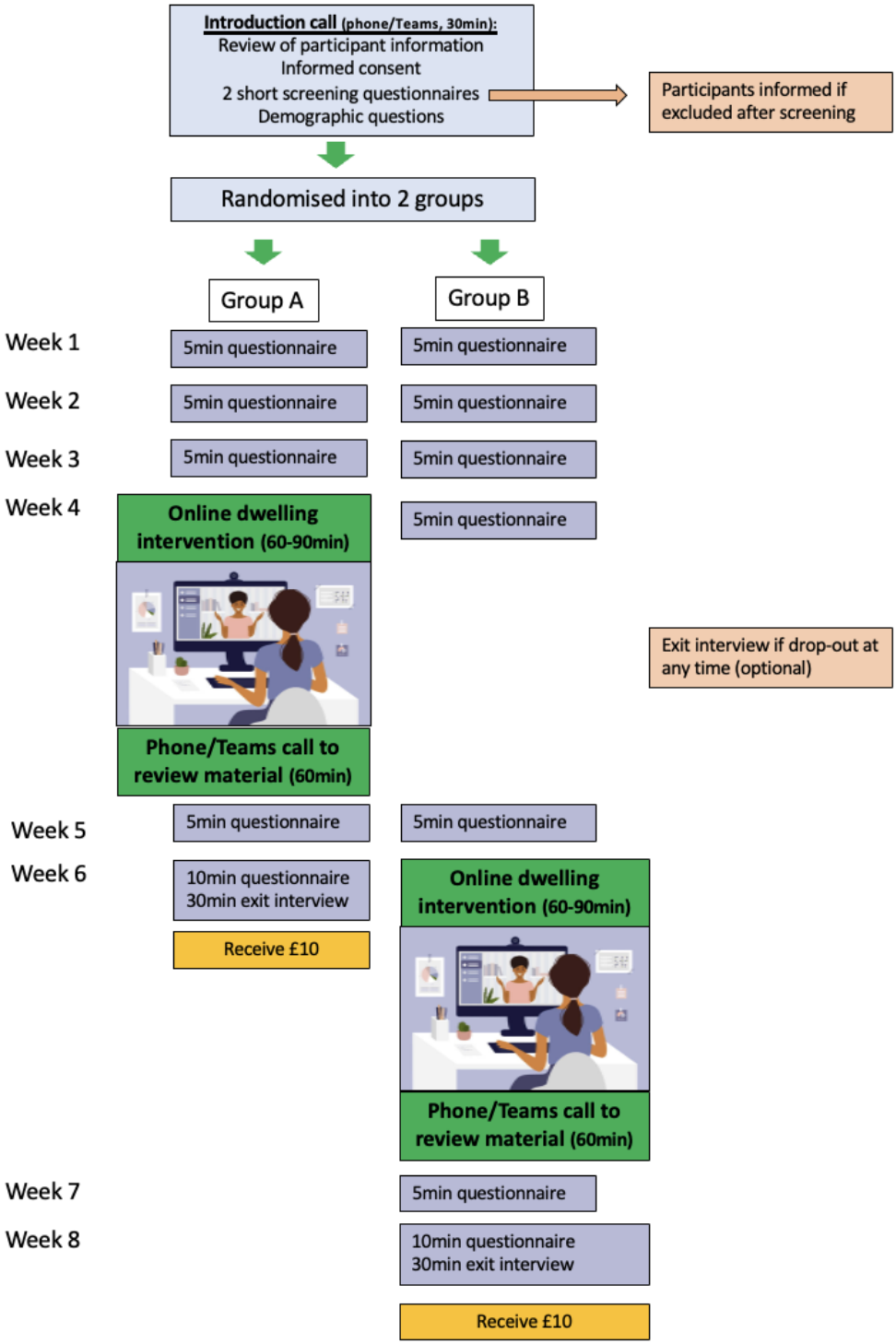
What is the purpose of the study?
We are evaluating a brief online intervention to help you cope with dwelling.

What is dwelling?
We all dwell from time to time. That is, chew over the past. But after traumatic events, dwelling is common and hard to stop. Dwelling in relation to PTSD is defined as unproductive thinking around the trauma, such as having negative thoughts and unanswerable questions that go round and round your mind, questions like "why did this happen to me?", "what if I had done something differently?" "why couldn't I prevent it?"
Research has found that dwelling can keep PTSD symptoms stuck and make recovery more difficult. (In research, dwelling is often called 'ruminating').

Why have I been invited?
The intervention is designed for individuals who have experienced a traumatic event and are now dwelling on this event
Specifically, it is for individuals with posttraumatic stress disorder (PTSD) who are currently on the waitlist for 1:1 treatment. We hope to give you some knowledge and coping skills that will help you deal with dwelling while you wait for treatment.
Do I have to take part?
No, taking part is entirely voluntary.
You can withdraw if you later change your mind, without giving a reason
Withdrawal will not affect your therapy or place on the waitlist

What will happen to me if I decide to take part?

See the flow chart for an overview of the study.



During the study:
First, you will be asked to have a brief phone or MS Teams call with our researcher Hjordis Lorenz.

a) She will talk you through the study and make sure you understand what it would include and answer any questions you may have.

b) If you'd like to participate, Hjordis will then talk you through each item of our consent form to ask if you agree and give consent. If you don't, that's completely okay and you don't have to give a reason why. You can end the call at any time.

c) If you've given consent, Hjordis will go through two short screening questionnaires with you to see if the intervention would be a good fit for you.
If the study does not seem the right fit, you will unfortunately not be able to participate but we can still share the dwelling resources with you if you'd like.

d) If it looks like the intervention will be a good fit for you, Hjordis will ask you a few questions about your background. These will be stored securely and only connected to you via an ID number.

2. If it looks like our intervention could be a good fit for you, you will be randomly allocated, like tossing a coin, to start the dwelling intervention in 3 weeks or to start in 5 weeks. The decision of when you will start will be made by chance.
3. You will then be asked to complete a set of **short weekly online questionnaires** every week for 3 weeks or for 5 weeks depending on when your intervention will start. This is to help us to determine how symptoms fluctuate over time and to better evaluate the effect of the intervention.
   All weekly ones will only take 5 minutes and ask the same questions about dwelling.
   The questionnaires may feel repetitive, however, it's incredibly valuable for research to see if there is a pattern or change.

   Both groups will receive the same intervention.
4. In the 4th or 6th week (depending on your group) you will receive our **online dwelling intervention.** It's an interactive module with explanations and information about dwelling, videos, examples and exercises for you to practice skills to cope with dwelling. It should take around 60-90 minutes to complete but you can take breaks and come back to it.
5. After the online module, you'll receive a phone call of up to **60-minutes** from one of our clinicians to review the material, discuss anything that was unclear and practice techniques together. We are flexible and will adapt this call to fit your schedule.
6. We will then ask you two complete 2 more weekly online questionnaires (the same as before) and will also ask your opinion on how you found your participation with some short questions and a short telephone or MS Teams call (exit interview) that will take a maximum of 30 minutes.
7. Once you have completed all this, **you will receive £10** as thank you for your time.
8. You can always contact us if you have any questions or concerns.
9. If you would like to withdraw from the study, you can do so by emailing the research team (hjordis.lorenz@oxfordhealth.nhs.uk) and request for your data to be removed from the study. This will only be possible whilst the questionnaires are open (during the time of the study); after this, data will be, anonymised and included in the analysis, and it will be impossible to determine which data is yours for removal.
10. At the end of the study, you will receive a written summary of the study's purpose and our findings.

After the study:

1. After the study, all quantitative data will be anonymised and written up for publication in a peer-reviewed journal. The research being undertaken will also contribute to the fulfilment of a doctoral thesis. Anonymised data may be presented at conferences or fed back to participating services.
2. After the study, your personal data will be destroyed. The anonymised data (where you can't be identified) may be kept and deposited into a research repository. Your consent form will also be kept securely and separately from the anonymous data.

What should I consider?

You may be excluded from participation if the study doesn't seem to be a good fit for you at this time. If this is the case, we will notify you via email and send you our training.

- resources to review in your own time; they may or may not be relevant for you in the future.
- If we become concerned about your or someone else's safety we will give you a call and signpost you to other services.
- You will need your own laptop/computer/mobile phone with internet ability to complete the online questionnaires and online intervention.
- This is a small study, so we are only looking for 14 people to participate.
- Please note that participation in this study is not treatment or therapy.
- If you choose to participate in the current study, you will keep your current spot on the waitlist of Talking Therapies/Healthy Minds (you will not receive your individual therapy faster or slower because of participating in the current study.

Are there any possible disadvantages or risks from taking part?

- The questionnaires or dwelling intervention **may cause initial temporary distress** because they ask you about your symptoms and how you are feeling, which might make you think about your trauma. We understand this may or may not cause you to feel distressed. We would like to reassure you that the intervention is aimed to reduce these difficult feelings and you will have the support of the researcher and her team, if necessary, for the duration of the study.
- Parts of the intervention we are evaluating have been previously evaluated with young adults who reported it to be helpful for reducing dwelling after difficult events. We are evaluating this specific intervention with adults with PTSD for the first time. Therefore, please be aware that we do not know what the outcome will be, which is why we are conducting this research.
  We have taken all reasonable precautions to ensure that the intervention will not cause you any harm. The material is based on a previous intervention aimed to help young adults in high risk professions to overcome dwelling and has been reviewed by multiple clinical psychologists and individuals with lived experience of PTSD.

What are the possible benefits of taking part?

The dwelling intervention and supporting phone call **may help you to better deal with dwelling**. This **could help to reduce your symptoms of PTSD and low mood.**

By participating, you may also **help others in your position**, who have gone through trauma and struggle with dwelling, as the results of this study hope to inform future interventions.

Will I be reimbursed for taking part?

Yes. **You will receive £10 as thank you for your time**, after you have completed the last set of questionnaires.

Who is funding the study?

The study is funded by the Oxford Health NHS Foundation Trust via the Clinical Psychology Doctorate training course: Oxford Institute of Clinical Psychology Training and Research (OxICPT).

What will happen if I don't want to carry on with the study?

- Participation is voluntary and you may change your mind at a later stage.
- Withdrawal will not affect the care you receive, such as your 1:1 IAPT therapy.
- If you wish to withdraw, you can simply notify us via email. If we don't hear from you, we will follow-up via email or mobile phone. If we are unable to reach you, we will assume that you are withdrawing.
- If you withdraw from the study, unless you state otherwise, any data that has been collected whilst you were in the study will be used for research as detailed in this participant information sheet. You are free to request that your data are destroyed at any time during the study and we will destroy your data. The researchers aim to contact all participants who withdraw/drop out, for an exit interview. This is optional and you don't have to complete it.
- You will only receive the £10 reimbursement after you have completed the last set of questionnaires. If you do not complete the online intervention, you will automatically be excluded from the study, but will be followed up to confirm your withdrawal.

How have patients and the public been involved in this study?

Individuals with lived experience of PTSD and dwelling have provided advice and opinions on the content of the dwelling intervention, which has been taken into account. They have also reviewed all the invitation email, participant information sheet, consent form, reminder emails and we have incorporated their feedback.

Who has reviewed the study?

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee, to protect participants' interests. This study has been reviewed and given favourable opinion by the Oxford Health NHS Research Ethics Committee.

The study was also reviewed and approved by your IAPT service (Talking Therapies or Healthy Minds).

Will my taking part in the study be kept confidential?

- Your information will be kept confidential within the research team. The only exception is if we receive information from you that suggests you or somebody else may be at risk of harm, we will inform somebody to make sure that you and the people around you are safe. This means that you may receive a call from our researcher Hjordis or from your IAPT team (Talking Therapies or Healthy Minds) to check in on how you're doing. If we are very concerned about you, we may also need to inform your GP or others to help keep you safe. Your IAPT service may also make a note of this on your record.
- Your local IAPT service (Talking Therapies or Healthy Minds) will be informed via encrypted email that you are participating in this study and whether or not you complete the study. No other information (questionnaire results, content of telephone conversations) will be shared with the service, unless they pertain to risk (harm to yourself or others).
- In addition, responsible members of the University of Oxford or the NHS Trust may be given access to data for monitoring and/or audit of the study to ensure that the research is complying with applicable regulations.
- Your GP will not be notified of your participation in this study as your participation is independent from your other mental health support.
- We will not have access to your clinical notes or medical records.
- For further information see the "What will happen to my data" section below.
- All responses will be kept fully confidential.
- You will be asked to verbally provide informed consent. This will then be emailed to you in a secure, encrypted way.
- Your name, email address and mobile number will be stored separately to any of your questionnaire responses. You will be allocated a study code by the research team which will be used to link your two survey responses instead of your name.
- Your IAPT service (Talking Therapies or Healthy Minds) will make a note on their records that you are participating in this study, whether you completed your participation, and details if we become aware of any risk of harm to you or others.
  No other data will be shared with the services.

What will happen to my data?

UK Data protection regulation requires that we state the legal basis for processing information about you. In the case of research, this is 'a task in the public interest.' The University of Oxford, based in the United Kingdom is the data controller and is responsible for looking after your information and using it properly.

- Your email address and mobile number will also be used to send you the questionnaires, link to the online module and reminders, and your mobile number will be used to call you for the follow-up telephone call to review the intervention material. These contact details will be destroyed after the end of the study (after we sent you a summary of our findings).
- We will be using information from you in order to undertake this study and will use the minimum personally-identifiable information possible (for example, ask about your age not date of birth and only questions we need for the study). Your personal information (i.e. contact details) will be deleted after the end of the study. In other words, we will not keep identifiable information about you after the study has finished. This excludes consent forms, which will be held securely at the University of Oxford for 5 years after the end of the study.
- Anonymised data (where you cannot be identified) will also be held securely by the University of Oxford. Your consent form and your anonymised data will be kept separately. Anonymised data, where they cannot be identified, may be used in future research.

- UK Data protection regulation provides you with control over your personal data and how it is used. When you agree to your information being used in research, however, some of those rights may be limited in order for the research to be reliable and accurate. Further information about your rights with respect to your personal data is available at https://compliance.web.ox.ac.uk/individual-rights

You can find out more about how we use your information by contacting our research team at hjordis.lorenz@oxfordhealth.nhs.uk

What will happen to the results of this study?
At the end of the study, you will receive a summary of the purpose of the study and our results/findings via email.
This research will be written up for a doctoral dissertation and may be submitted for publication in an academic journal and presented at conferences. Anonymised data may be uploaded into an online repository or shared with participating responsible researchers. No identifiable information will ever be shared outside the research team.

What if there is a problem?

The University of Oxford, as Sponsor, has appropriate insurance in place in the unlikely event that you suffer any harm as a direct consequence of your participation in this study NHS indemnity operates in respect of the clinical treatment which is provided.

If you wish to complain about any aspect of the way in which you have been approached or treated, or how your information is handled during the course of this study, you should contact Prof Jennifer Wild, tel: 01865 618612 jennifer.wild@psy.ox.uk or you may contact the University of Oxford Research Governance, Ethics & Assurance (RGEA) office on 01865 616480, or the director of RGEA, email ctrg@admin.ox.ac.uk.

- If you are experiencing psychological distress we will recommend you contact the following services:
    - Your IAPT team (during office hours)
    - Your GP (during office hours)
    - NHS 111
    - The Samaritans (for listening support)
- If you need immediate urgent support, please call 999 or visit your local A&E department

If you have any questions or would like more information, please contact Hjordis Lorenz via email at hjordis.lorenz@oxfordhealth.nhs.uk

Appendix S: Consent Form

Trainee Clinical Psychologist: hjordis.lorenz@oxfordhealth.nhs.uk
Principal investigator: Jennifer Wild jennifer.wild@psy.ox.ac.uk
Study: Evaluation of a rumination intervention for individuals with PTSD: A case series

REMOTE CONSENT FORM*

PTSD Rumination Intervention
Researcher to seek and record informed oral consent, after participant has had sufficient time to think about whether they want to take part.
Researcher to inform individual that they are not obligated to give a reason if they decline consent. Please check the boxes to record that the question has been asked by the researcher and that the participant has responded in the affirmative:

1. I confirm that I have read the information sheet dated 18.10.2022 (version 2) for this study. I have had the opportunity to consider the information, ask questions and have these answered satisfactorily.	
2. I understand that your participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected.	
3. I understand that relevant sections of my data collected during the study may be looked at by individuals from University of Oxford, from regulatory authorities where it is relevant to my taking part in this research. I give permission for these individuals to have access to your records.	
4. I understand that the information you provide as part of this study will be kept confidential and that the only exception would be if the researchers were concerned that I, or someone else, might be at immediate risk of serious harm.	
5. I understand that my anonymised data (where I cannot be personally identified) can be written up, for example for a doctoral dissertation or for publication. 6. I agree that my anonymised data can be shared with a data repository, such as Ox-data or UK data archive, and other responsible researchers.	
7. I understand that anonymised data (where I cannot be personally identified) from the study be used in future research, here or abroad. I understand this research may involve commercial organisations.	
8. I agree to take part in this study.	

_____
Name of Participant

_____ _____ _____
Name of Researcher taking consent Date Signature

**1 copy for participant (e.g. emailed securely to participant); 1 for researcher site file (original)*

Appendix Z: Rumination Intervention Module

Start of Qualtrics module

Overcome Overthinking



Welcome! You have volunteered to take part in our online intervention on how to overcome unhelpful overthinking.

Did you know that "dwelling" is another word for over-thinking?

Multiple choice.

- Knew that already
- News to me

We are delighted to be working with you and look forward to getting you started.

This online module will give you a better understanding of what dwelling is, why it happens and how to overcome it.

This module has 5 parts:

Part A What is dwelling?	**Part B** Why is dwelling unhelpful?	**Part C** How to interrupt the cycle of dwelling	**Part D** Preventing dwelling	**Part E** Summary

Please note your ID number: _____

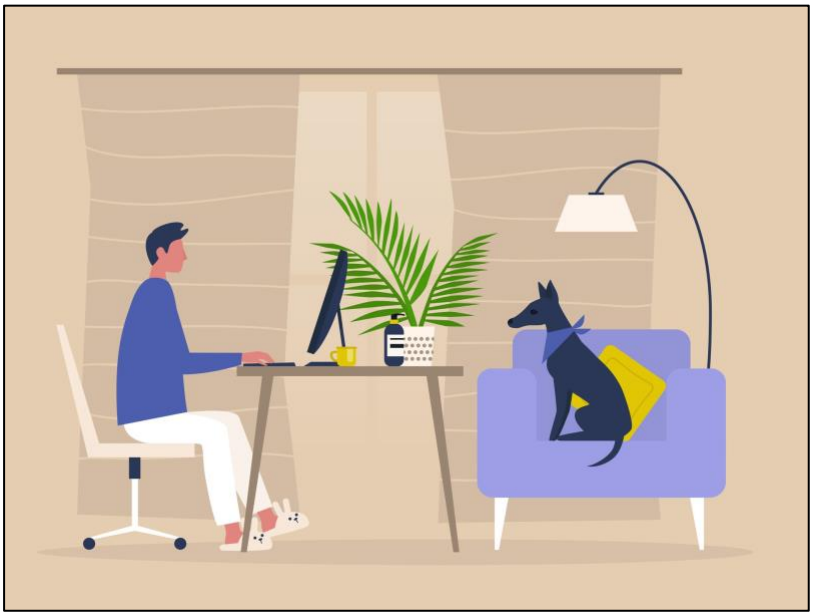
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This module:

Aim: to learn to spot and overcome dwelling, using a range of cognitive behavioural techniques.

Format: The module has some interactive exercises, videos and some education.

Time: It will take about 60-90 minutes. Don't worry – you can take a break whenever you'd like.



Note: If it ever feels like too much to read, spot the this symbol at the top of the page, where you can listen to a recording of the written text.

If you have any questions at any time, please feel free to contact: Dr Hjordis Lorenz at hjordis.lorenz@oxfordhealth.nhs.uk

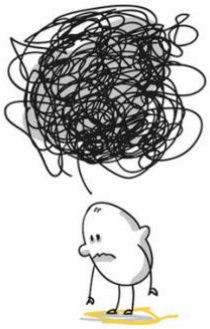
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Part A: What is Dwelling?

Thinking about trauma and loss is a completely normal process. It can be helpful or unhelpful, depending on how it is done. When your thinking gets stuck and goes around and around in circles, it tends to be unhelpful.

When we are **dwelling** on our trauma, we are over-thinking the past. The more technical term for dwelling, which you may have heard of, is "ruminating."

After a traumatic event, it's **very common** to dwell on the trauma and its consequences.



Why do people dwell on the past?

Thinking about an upsetting event is very common and natural and can be an attempt to make sense of it. Often it is an automatic response and people don't choose to dwell or even notice they are doing it.

Dwelling is sometimes triggered by trauma memories or trauma reminders but it can also start voluntarily. For example, sometimes, it can be an attempt to understand or make sense of what happened.

Dwelling is often linked to thoughts about self-blame (e.g. "it was all my fault"), injustice (e.g. "why do bad things happen to me?") or betrayal (e.g. "why didn't anyone help?"). Often there are no answers or solutions to these questions and thinking about them doesn't make us feel better.

Once dwelling gets going, it's very hard to stop and it can take up a lot of time. Many of us know this from experience.

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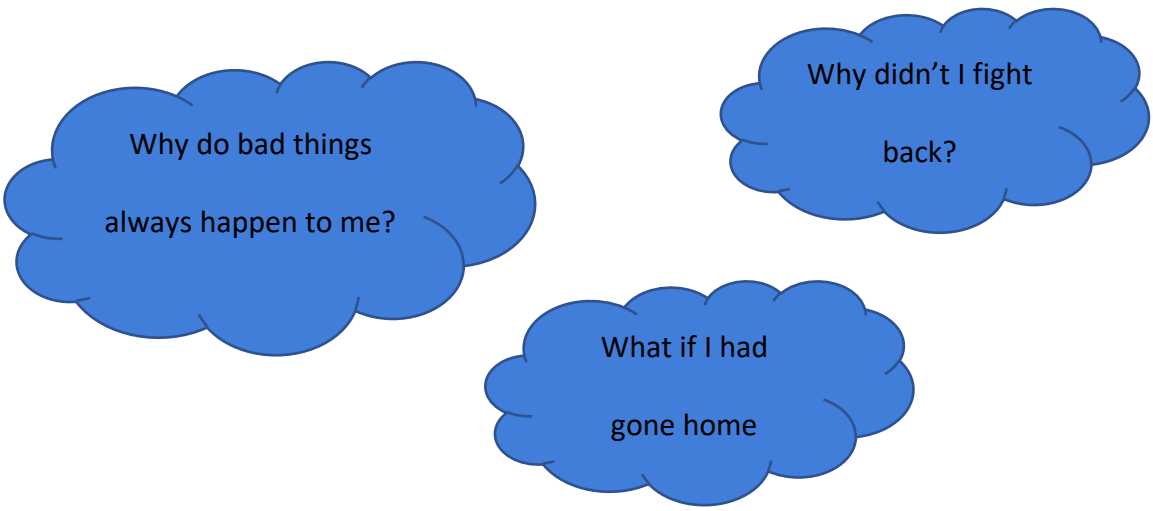
Dwelling



Picture credit: OxCADAT Resources

Thoughts linked to dwelling are often questions with **"why"** and **"what if"** that have no answers.

For example, people may think:



You may find it helpful to call to mind a recent time you were dwelling about the past.

Signs that you may have been dwelling are:

1. You were thinking on the same topic for more than 30 minutes.
2. Unanswerable questions went through your mind like the ones in the blue thought bubbles above.
3. Your thoughts led to no plan or action.

Once you have called to mind a recent episode in which you were dwelling, please take a moment to make a note of some of the things that went through your mind at the time.

Open response text (optional response)

PAGE BREAK

Distinguishing Between Intrusive Memories and Dwelling

Sometimes unwanted memories of trauma can trigger periods of dwelling. Other times, dwelling about a trauma we've experienced can trigger unwanted memories. It can be helpful to distinguish between memories and dwelling.

- **Memories that pop to mind unbidden and are unwanted are called intrusive memories.** They are common after the kind of trauma you've experienced and usually pop to mind in response to a trigger. They are one of the central and very common symptoms of PTSD.

  Intrusive memories make you **re-experience** a sensory aspect of your trauma, for example something you saw, smelled, heard or felt during the event.



- **Dwelling** is different to having a memory about the trauma. Dwelling includes thoughts that go round and round in your head. They are thoughts about the trauma, not memories.

  Dwelling often includes unanswerable questions such as "why didn't I intervene earlier?", "how would my life be different if the trauma hadn't happened?".

  People often dwell after trauma but people can dwell about other things in life like a relationship or meeting that didn't go well. Dwelling is also a common symptom of depression and other mental health difficulties.



  BOTH dwelling and unwanted memories are hard to control.

PAGE BREAK





So, why do we dwell?

It's very common and understandable to dwell on trauma after it happens. However, dwelling on a trauma and loss, where our thoughts get stuck on the same thing, is often unhelpful.

Learn more about why people may dwell on their trauma. Tick which applies to you.

- Some people think dwelling may help them to solve problems.
  Point to consider: Since unhelpful dwelling typically leads to no plan or action, how effective is it really at solving problems?
    - Applies to me
    - Somewhat applies to me
    - Doesn't apply to me

- Some people worry that if they stop thinking about the trauma then it becomes "less real" or that it means they are accepting the bad thing that happened.
  Consider how memory works: If you stop thinking about a friend, does that make them less real? If you stop thinking about a crime reported in the news, does that mean you accept the crime? Stopping to think about the trauma will never mean it didn't happen or that you accept it.
    - Applies to me
    - Somewhat applies to me
    - Doesn't apply to me

- Some people dwell because it can feel like they're "doing something" about the event ("if I only think about it hard enough, I'll find the answer, I'll understand the reason, I can learn from my mistakes")
    - Point to consider: It is natural to want to 'do something' when we feel in distress. However, when you are dwelling are you actually doing something to solve the problem or to make yourself feel better?
      Also consider: does dwelling ever take time away from doing something that would actually make you feel better, such as sleeping, exercising or speaking to a friend?
        - Applies to me
        - Somewhat applies to me

        - Doesn't apply to me

- Some people dwell because it feels familiar and safe whereas taking action after a difficult situation can feel frightening.
    - *Point to consider:* How might you feel if instead of dwelling, you focused on moving forwards with an activity that was kinder for you? Can you test this out in an experiment? Try these 5 steps:

      1. Choose a period of time where you are likely to dwell (e.g., when I get home from work on Friday evening, when I am alone in my flat on Sunday morning, when I see police cars on TV tonight).

      2. When the period of time in step 1 presents itself, spot what you are feeling then rate how strong the feeling is out of 100% (e.g., bored 80%, tired 90%, lonely 50%, sad 90% - whatever you may be feeling, make a note of it and rate how strong the feeling is).

      3. Once you have rated what you are feeling, it is time to do something different. Instead of dwelling, make a cup of tea with your full attention or walk to the end of the block fully absorbed in what you can see or hear, or do 21 jumping jacks.

      4. Then re-rate how you feel (e.g., bored 40%, tired 60%, lonely 40%, sad, 80%).

      5. Finally, take a step back and note what makes you feel better – dwelling or doing something different to what feels familiar? (This is an example of a behavioural experiment which we will learn more about later).

        - Applies to me
        - Somewhat applies to me
        - Doesn't apply to me

- Some people think that the negative thoughts they are dwelling on can pre-empt feeling badly in the future, that somehow dwelling may futureproof bad feelings from happening because a lot of time has been taken to go over the bad things from the past.
    - *Point to consider:* Is this how life works? Is it really the case that overthinking the past gives us more control of the future? Overthinking our past has little influence on whether or not good or bad things happen to us in the future and a lot of influence on how we feel in the moment.
        - Applies to me
        - Somewhat applies to me
        - Doesn't apply to me

- Some people dwell to punish themselves with the pain they feel. Maybe they feel they had a role in causing the trauma and therefore deserve to be punished.
    - Point to consider: Does thinking about what happened change the past? Perhaps you could experiment with focusing on what you did at the time that may have been helpful. Maybe the trauma happened for a number of reasons and your role is one of many. Try to think of the other reasons the trauma may have happened.
    - How would you treat a close friend if they were in this situation? Would you keep punishing them? Consider the compassion you would extend to someone you care

about. What would you say to them? Experiment with applying the same words of support to yourself.

- Applies to me
- Somewhat applies to me
- Doesn't apply to me

- Often, we have gotten into the habit of dwelling, and may not even notice when we are doing it. Not doing it might feel "wrong" or "weird."
  - Point to consider: Learn to spot your triggers or times you fall into the habit e.g. at night-time when you may feel overly tired and are trying to fall asleep. Then actively plan for something else to do to occupy your mind (such as the techniques in this module).
    Remind yourself that it's okay and normal to feel "weird" and uncomfortable at first. Building a new habit is like a muscle. The more you practice it, the stronger it grows.
    - Applies to me
    - Somewhat applies to me
    - Doesn't apply to me



What is dwelling?

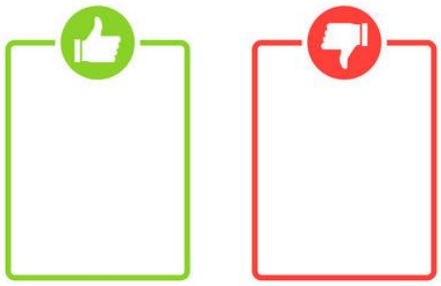
- Thinking about the trauma can be helpful if it helps you problem-solve or process the trauma. However, often we get stuck in unhelpful dwelling.
- Dwelling is over-thinking the past. It tends to include negative thoughts that go round and round in our head.
- Dwelling consists of "why" and "what if" questions that have no answers.
- Dwelling on a trauma is a very common and understandable response after a distressing event.
- Dwelling is different to intrusive memories.
- Intrusive memories are unwanted memories that come to mind when we don't want them to. A smell, feeling, sound or colour in our environment that is similar to a smell, feeling, sound or colour in our past trauma can trigger an unwanted memory.
- There are many reasons why people think dwelling can feel helpful but often it keeps us stuck in unhelpful overthinking.

CONGRATULATIONS! You've completed 10% of the module!

Part A What is dwelling?	**Part B** Why is dwelling unhelpful?	**Part C** How to interrupt the cycle of dwelling	**Part D** Preventing dwelling	**Part E** Summary

PAGE BREAK

Part B: Why is dwelling unhelpful?



Advantages & Disadvantages of Dwelling

What have you found are some **advantages** of dwelling? (What is helpful about it?)
Free response text box

What have you found are some **disadvantages** of dwelling? (What is not helpful about it?)
Free response text box

What do you notice looking at the advantages and disadvantages?
Free response text box

PAGE BREAK

Discovering the effects of dwelling

Video: Please watch the following video role play where a therapist helps a client discover the effects of dwelling, then answer the question afterwards.

Warning: The client mentions a physical assault.



2:26 minute-long role play with Prof Jennifer Wild. Consent given for use of video. Therapists guides client to spot the advantages and disadvantages of dwelling.

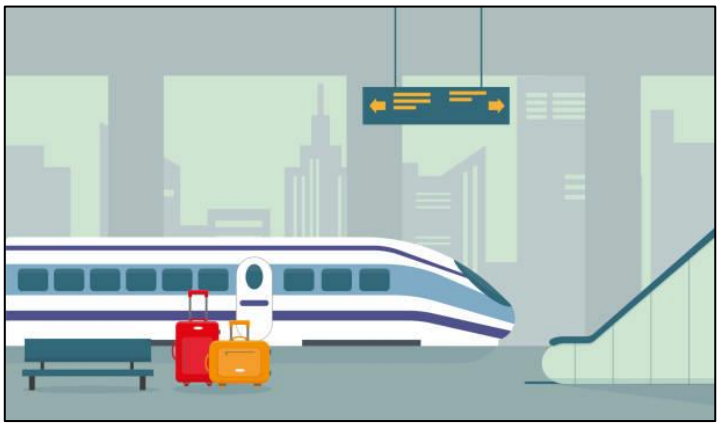
Link: https://youtu.be/p5YGTQ4AqK4 (unlisted, only individuals with this link can access. Video embedded into Qualtrics)

What did the client discover were some of the disadvantages linked to dwelling?

In the video, the client noted some difficulties linked to dwelling. Does dwelling cause some of the same difficulties for you?

PAGE BREAK

The train analogy



Imagine that each thought is a train. And your brain is like a busy train station. A train comes into the station, stops briefly, and then it moves on again.

When we dwell we can think of it as the train getting stuck in the station. It stops and, instead of letting it pass by, we jump onto it and go over every detail. We look into every cabin, open every piece of luggage, question every passenger.

KEY TAKEAWAY

Why is dwelling unhelpful?

- Dwelling has many disadvantages. For example, it takes up a lot of time, makes it tough to problem-solve, and makes us feel worse.
- We can think of dwelling like a train getting stuck in the station instead of moving on.

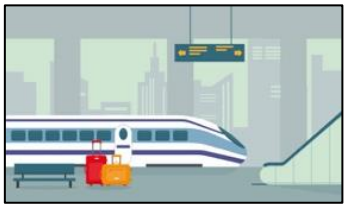
CONGRATULATIONS! You've completed 25% of the module!

Part A What is dwelling?	**Part B** Why is dwelling unhelpful?	**Part C** How to interrupt the cycle of dwelling	**Part D** Preventing dwelling	**Part E** Summary

PAGE BREAK

Part C: How to interrupt the cycle of dwelling

Remember the train analogy?



We learned that dwelling is similar to a train being stuck in the station. So what can we do instead being stuck in our head dwelling?

You will learn 7 skills to cope with dwelling

PAGE BREAK

Skill 1/7: Spot and label dwelling



Spot your dwelling

Here are a few common signs that you're dwelling:

1. I'm having "why" and "what if" thoughts
2. I'm thinking lots of "should" thoughts
   (e.g., I should have done something differently, I shouldn't have gone…)
3. I'm asking myself questions that are impossible to answer / have no answers
4. I'm asking myself questions that lead to no plan or action
5. I'm thinking over on the same thoughts for more than 30 minutes
6. The same thought/question keeps coming back and go around and around in my head
7. My thoughts spiral from one difficult event/thought to another and another without stopping

We are all different. What are the signs that you're dwelling?
Free response

Label your dwelling

1. **Give it a name**
   Calling it "dwelling" may not fit for you. Find a label that works for you, such as "my circular thinking", "my hamster wheel thinking", "my spaghetti thinking."
2. **Then, when you spot yourself dwelling, label your thinking**
   e.g., "there goes my hamster wheel again", "here's another train getting stuck"
3. **Then you can take steps to disengage from dwelling** which we will discuss in the next sections.



KEY TAKEAWAY

Skill 1/7: Spot & label dwelling

- **First, we learn to spot when we are dwelling**.
  3 questions to spot when you are dwelling are:
  - Is this question answerable?
  - Do my thoughts lead to a plan or action?
  - Have I been dwelling on this for more than 30 minutes?

- **Second, we label our dwelling.**
  Give it a name when you notice your dwelling
  e.g., “here goes my hamster wheel again”



Skill 1/7
Spot & label dwelling

PAGE BREAK

Skill 2/7: Why" versus "How" Thinking

The video below shows our therapist talking a client through the harmful effects of dwelling and introduces "why" versus "how" thinking.



4:47 minute-long video clip of a role play with Prof Jennifer Wild where she guides the "client" to discover the harmful effects of dwelling.

Content: The therapist asks the client imagine a scenario of an important job interview and how she would react.
Scenario version 1: thoughts of "why is this happening to me? Why do bad things happening to me?" go through your mind. Therapist asks how the client would feel and what she would do.

Scenario version 2: thoughts of "how can I get to the interview by 9am", "how can I get there on time?". Therapist asks how client would feel and what she would do.

Therapist summarises that the how-thinking leads to better problem-solving.
Therapist reflects with client how dwelling hasn't been helpful for the trauma.

Link: https://youtu.be/8OS7ORqQbXY (Video is "unlisted" so only individuals with this link can access it. The link is embedded into Qualtrics)

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“How” versus “Why” - continued

Helpful thinking in response to problems starts with **“how” and “what”** questions and is also called **practical thinking.** It is about moving forwards.

It takes into account specific details like what, when, where and how a situation happened. It includes questions like:

- How can I move forwards?
- How can I break this down into smaller steps?
- How can I feel better now?
- What is the first step I could take?

Quick tip:

Breaking the “how” answers into smaller steps is an important part. Answering “how” with “I’ll just try harder next time” will not be helpful. Instead, break it down into smaller steps of where, when, how and with what you’ll start.



Example: I spotted myself dwelling.
Helpful thinking: How can I feel better now? I know a walk often makes me feel better and get out of my head. Therefore, I will go for a 5 minute walk *(not too much time commitment),* right after dinner tonight *(when),* around the block *(where)* and I’ll put my jacket, hat, gloves and keys out on the chair right now *(when)* to make it easier to get started *(how, first step).”*

Unhelpful or abstract thinking is connected to **“why” and “what if”** questions and “if only” thoughts. It is focused on trying to find the meaning and explanations for events and considering the consequences. It includes dwelling on questions like:

- Why did this happen?
- Why me?
- Why now?
- What does this mean about me?
- What if it had not happened?

PAGE BREAK



Practice “why” vs “how” thinking

Listen to the audio and try different ways of thinking.

Audio recording by Dr Graham Thew on imagery of a café situation comparing examples of helpful and unhelpful attention.

1. Scenario:

Let me take you through an example of abstract thinking, in response to a potentially stressful situation, to illustrate what we mean by this. First, imagine you’re in a café, restaurant or bar, waiting for someone significant. This meeting is very important to you. Perhaps because it’s with a friend you rarely see, a relative, or a date you’ve been really looking forward to. You’ve arranged to meet at 5pm, and the person you’ve arranged to meet it already late. You’ve decided to give them another half an hour, until half past five.
Imagine you’re sitting at a table in the café or restaurant. Create the visual image of this situation that is detailed and vivid, as if you’re there right now, looking out through your eyes. Imagine the feeling of the seat behind you, and the cup in your hand. See the café clock on the wall in front of you. Hear the clock ticking, above the murmur of the other customers. Visualise the hands on the clock, shifting to half past five. See the café door in front of you ease open. But it’s a stranger. The person has not shown up.
As vividly as possible, imagine yourself in the café, waiting for this person when they haven’t shown up, as if you’re there right now, noticing what you’re thinking and feeling in that situation. And ask yourself these questions, to encourage abstract thinking about this situation: “Why is this happening to me? What does this mean about me? Is what way is this similar to other times I’ve been stood up or disappointed? What will the consequences be? Why does this keep happening to me? Why me? Why is this always happening to me?” Spend a few moments continuing to imagine yourself in this situation, as vividly as possible, as you continue to ask yourself questions like: “Why is this happening to me?” and “what does this mean?”
Notice your experience of asking yourself these more abstract questions, focused on causes, meanings and implications. Notice what thoughts you have. What feelings, emotions and sensations you experience as you ask yourself these questions. And make a mental note of what you experienced in this situation, what you felt, what you thought, what emotions you experienced, what physical sensations you experienced, what you thought about doing, and hold on to that. Make a mental note of that, so that you can reflect on that, at the end of the exercise.
And once you’ve made a clear mental note to yourself, you can stop imagining the situation and come to the end of this exercise.

2. Now, try the second scenario with a different focus: 

Now, let's return to the image you've created before and try thinking more practically about this situation. Close your eyes, and, once again, and as vividly as you can, imagine that you're waiting in the café to meet this important person, a meeting that means a lot to you, and they're already late. Create an image of the situation that is detailed and vivid, as if you're in the situation right now, reliving that experience, looking out through your own eyes. Visualise that hands on the clock shifting to 5:30 and see the café door in front of you ease open. It's a stranger. The special person you're waiting for has not shown up.
As vividly as possible, imagine yourself in the café or restaurant and that this person hasn't shown up, as if you're there right now, reliving that experience. And ask yourself these questions to encourage practical thinking in response to this situations: "What do I notice that is going on around me in the café? What do I see and hear? How did we arrange to mee? What were the steps that led up to this meeting? How is this situation different to other times when I've met people as planned? What are the steps that might have led to this person not turning up? What could have happened? How can I move forwards and deal with this situation? What first step can I take to move forwards? What is the next step I can take to deal with this?
Spend a few moments continuing to imagine yourself in this situation as vividly as possible, waiting for this person to show up, and continue to ask yourself questions like: "How did this happen? What led up to this situation? What steps can I take to move forwards?
And notice your experience of asking yourself these more practical, concrete questions. Focus on the specific details of the event, and the sequence of events, and the context in which it occurs. Notice your thoughts, feelings, emotions, as you imagine yourself in that situation. Ask yourself those questions about: "How did it happen? How can I move forwards?
Make a mental note of what you experienced in this situation, what you felt, what you thought, what physical sensations and emotions you experienced.
Once you've got a good, clear sense of your experience in that situation, and you've made a good mental note so you can come back and reflect on this situation, then you can end this exercise.

Which way of thinking was more helpful?
Attention multiple choice

- 1st one
- 2nd one

What differences did you notice? *Free response*

PAGE BREAK



Let's see if you can spot helpful practical versus unhelpful thinking

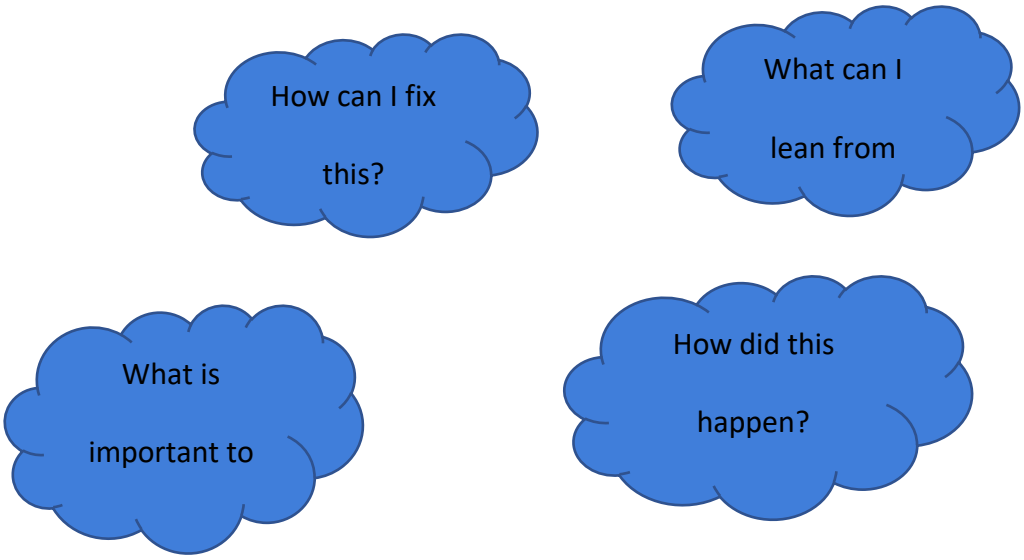
Look at the scenario below and note which thoughts are practical, which ones unhelpful.

Scenario 1: Your computer crashed with your work project on it and you don't have a back-up.
Multiple choice for each: practical or unhelpful?

- Why me, why now? (unhelpful)
- Why didn't I prepare for this? (unhelpful)
- What steps can I take to recover it? (practical)
- Who or where can I go for help? (practical)
- What if I get fired? (unhelpful)
- If I can't recover my work, what can I do now to make progress? (practical)
- Why didn't I backup? (unhelpful)
- What do I still have or remember about my work project? (practical)

Scenarios taken from Lorenz et al, 2020 CAT measure, developed with PPI/PIE input

DO: Whenever you spot yourself thinking in the unhelpful, abstract way, try to shift your thinking to more practical "how" and "what" questions. Sometimes it can even be helpful to write these down or say them out loud.



Examples from Prof Watkins' BABCP Presentation 2020

KEY TAKEAWAY

Skill 2/7: Why vs How thinking

- Instead of dwelling we can use more helpful thinking called **'practical thinking'.**
  - It consists of "how" and "what" questions.
  - It moves us forward and helps us to think of the first step to take.

Skill 2/7
"Why" versus "How" thinking

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Skill 3/7: Reminders of the Here and Now

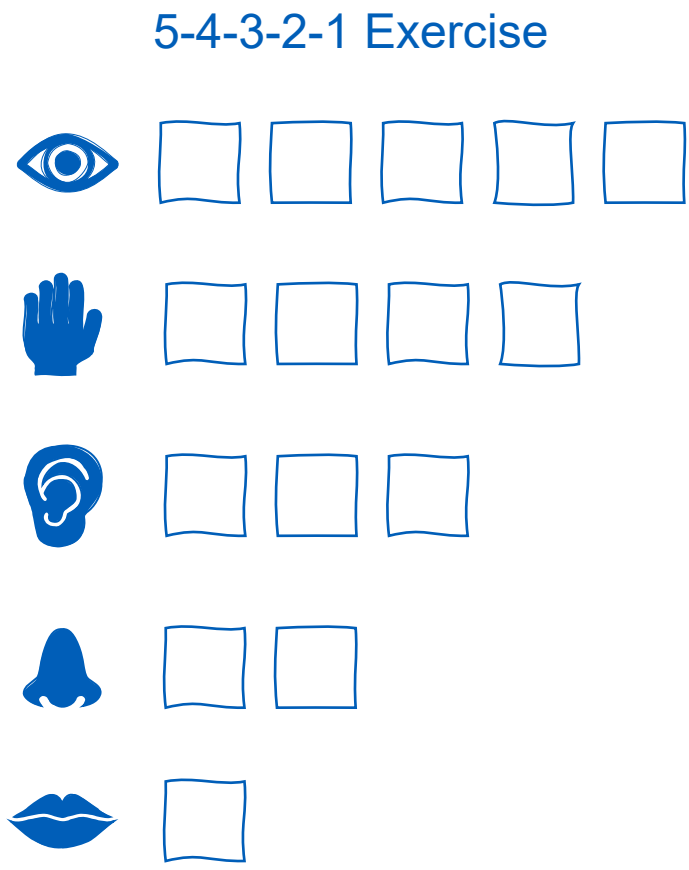
When we dwell, our mind often pulls us into the past.

It can be helpful to find strategies that bring you back to (or remind you of) the present moment. These strategies are called **reminders of the here and now**.

Here and now techniques often involve using the 5 senses and movement. To get started, it can be helpful to use the '**5-4-3-2-1**' technique below.

To do this technique look around you and try and name 5 things you can **see**, 4 things you can **touch** and feel, 3 things you can **hear**, 2 things you can **smell** and 1 thing you can **taste**.

Don't worry if you cannot find all the senses, just using your senses to notice what's going on in the *here and now* will keep your attention in the present.



Picture credit: Berkshire Health NHS Foundation Trust

You can also follow along this video if you prefer:



https://www.youtube.com/watch?v=30VMIEmA114&ab_channel=ThePartnershipInEducation

4:28 minute video guiding the listener through the 54321 exercise with examples. Video publically available.

PAGE BREAK

Reminders of the Here and Now - continued

Now that you've tried the 54321 technique, you have an idea of how to bring your attention into the here and now.

Here are some examples:

Sight	Sound	Smell	Taste	Touch	Movement
Notice where you are Night lights Pictures Grounding statements Describe surroundings Write/draw something for you to see	Music Ticking clocks Saying what you can see out loud	Smelling salts Essential oils Citrus fruits Olbas oil Peppermint Fresh ginger Lava beads	Strong mints Chilli gum Cough sweets Sour drinks e.g. lemon squash Wasabi peas	Stress balls Marbles/ Pebbles Velvet Feathers Hot/cold Compress Fidget spinners Silly putty	Applied tension Walking Being in postures that were not possible during the event Exercise Star jumps

Picture credit: Berkshire Health NHS Foundation Trust

Make the reminders:

- ***Strong** so they can pull your mind back into the present, for example a strong taste of mint (like a cough drop) might work better than a soft taste like water.*

- ***Accessible** so you can use it wherever you are. Some people find it helpful to carry a small object or strong mint in their pocket or feel the fabric of their clothes.*

Quick Tip:

A strong taste like tasting Fisherman's friends cough drops or immediately springing into jumping jacks are very effective for interrupting dwelling once you spot it.

Try the here and now technique that works best for **you**. The important thing is to connect with your senses. You can also add movement as this is effective in shifting your attention from your thoughts to the here and now.

Use the space below to write ideas that will tap each sense into the here and now:

Sight

Sound

Smell

Taste

Touch

Movement

DO: *So next time you find it hard to disengage from your dwelling thoughts, try bringing yourself into the present moment with your senses.*

Once you have interrupted dwelling with the 5-4-3-2-1 senses exercise, what activity could you then try that you might enjoy or that would absorb your full attention? You might want to try a rebuilding life activity – more on this later in this module.



Skill 3/7: Reminders of the Here & Now

- To interrupt dwelling and shift your mind out of the past you can use the **'here and now'** strategy.
- The 'here and now' strategy connects to all our 5 senses and movement.
- We practice the 5-4-3-2-1 exercise: 5 things you can see, 4 things you can touch, 3 things you can hear, 2 thinks you can smell, 1 thing you can taste.
- Make sure 'here and now' reminders are **strong** (such as a strong taste or smell) and **accessible** (you can access them any time like carrying them in your pocket or handbag).



Skill 3/7

Reminders of the Here and Now

PAGE BREAK

Skill 4/7: Creating Dwelling-free zones & times

Try Dwelling-free zones

Choose a room where you spend a lot of time and make this your "dwelling free zone." Make a room in your flat or house where you spend very little time as the "dwelling zone." For example, tell yourself: "the living room is a dwelling-free zone, I can only dwell in the bathroom." If you spot yourself dwelling in the "dwelling-free zone" leave that area and go to your dwelling zone. Unless you have an unusual love for the bathroom, this might be a good place to make as your dwelling zone as it's often not designed for long-term comfort.



Which room could be your "dwelling-free zone"?
Multiple choice:

- *Bathroom*
- *Bedroom*
- *Kitchen*
- *Living room*
- *Other room*
- *None of the above*

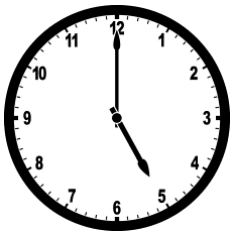
Try out a specific dwelling time and delay dwelling

For example, you could allow yourself to dwell from 7-7:30pm. If you spot yourself dwelling at 3 pm, you could remind yourself "It's 3pm now, I'll think on this later at 7 pm."

You might discover that you don't want to overthink when the allocated time comes round. This can help you to practice dwelling less.

When you plan your dwelling time, you can also note down the thoughts and questions you are dwelling on and test whether thinking about them actually helps you to process your trauma or solve difficulties.

Quick tip:
If you choose a time to dwell, don't do it just before going to bed. Best times to make as your daily allocated time to dwell would be just before something else where you would be distracted and unable to continue to dwell like allowing yourself to dwell at 7 pm before your favourite TV programme at 7:30 pm.



What would you choose as your "dwelling time"? Schedule no more than 30 minutes for dwelling.
Free response

Experiment with setting yourself these kinds of rules around your dwelling, as silly as they may feel.



Skill 4/7: Dwelling-free zones & times

- You can try a **'dwelling free zone'**
  Choose one room where you're allowed to dwell, all others are 'dwelling free zones'. If you spot yourself dwelling, move to your dwelling zone.

- You can try a **'dwelling time'** and delay dwelling. Set yourself a specific time to dwell during the day for up to 30 minutes. If you spot yourself dwelling outside of the allocated time for dwelling, remind yourself that you can come back to dwelling at the allocated time. This may delay dwelling and you might find that you don't want to dwell when the time comes.



Skill 4/7

Other tips and tricks: Dwelling-free zones and times

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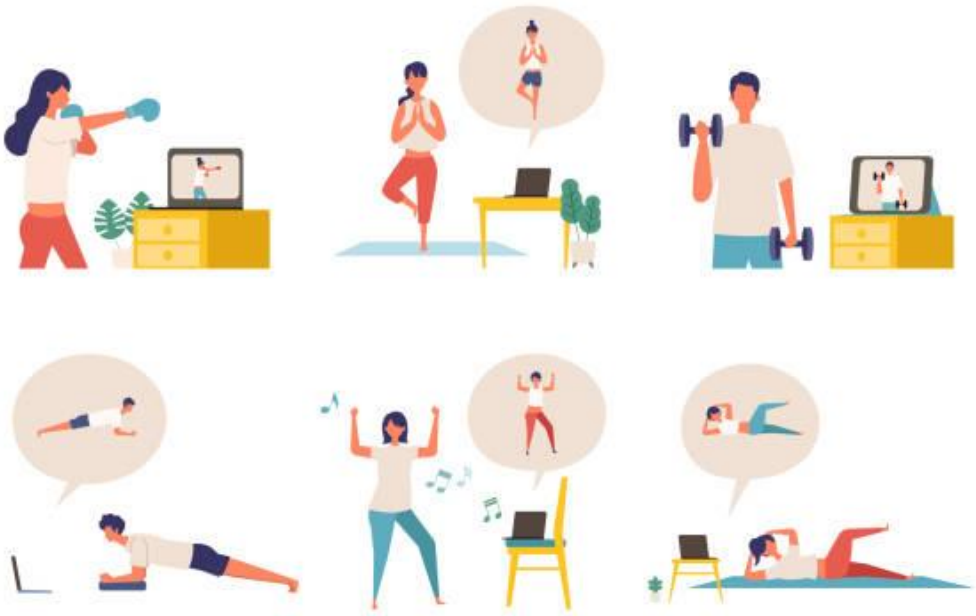
Skill 5/7: Rebuilding life activities

When you spot yourself dwelling, use it as a cue to do an activity. We call such activities “rebuilding life” activities because you do something with your time that you actually want to do that could help to rebuild your life after trauma.

Is there **anything you used to enjoy that you have stopped since your trauma**?
Is there anything that would give you a sense of pleasure or achievement?

For example:

- Message a friend
- Going for a 5-minute walk
- Cooking a meal or making your favorite snack
- Playing an upbeat song you used to enjoy
- Stroking a pet



Think of an enjoyable activity in the areas of: free time, work, home life, social life, pets and health/ exercise.

Could you try any of these again, **even if you don’t feel like it?** Research shows that being active can lift your mood and is a great way to disengage from dwelling.

It can be tough to start an activity when you’re feeling low. A key way to start a new activity is to make decisions based on how you *want* to feel not on how you’re *actually* feeling.

Most people make decisions based on how they're feeling in the moment rather than on how they want to feel in the future. So one of the key ways to kick avoidance is to consider how you want to feel in the future and to be guided by this today. If going to the gym will make you feel energized and happy, or finishing up an admin task will make you feel relieved and rewarded, make your decision to get started based on how you know it will make you feel rather than on how you're already feeling.

Quick tip:
Make your decisions today based on how you want to feel in the future. This means…
Be guided by how you want to feel in the future.

What are 3 things you could try today and the rest of this week when you spot a trigger or warning sign for dwelling?

1. _____ *free response*
2. _____ *free response*
3. _____ *free response*



Skill 5/7: Rebuilding life activities

- When you spot yourself dwelling, use it as a cue to do an activity. We call these **"rebuilding life" activities** because you do something with your time that you actually want to do that can help to rebuild your life after trauma.



Skill 5/7
Rebuilding life activities

Next: Plan an experiment to test whether or not the activity was helpful (click to the next page)

PAGE BREAK



Skill 6/7: Testing our predictions through behavioural experiments

Often what stops us from trying our rebuilding life activities, are the predictions we make about them.

Example: Jamie used to enjoy cooking with his friend but thinks he won't enjoy it because he feels flat and low.



Jamie set up a **behavioural experiment** to test his predictions:

Behavioural Experiment Record Sheet – BEFORE

Date	Prediction	Belief that the prediction will happen (0-100)	Experiment (How can I test this belief?)	Outcome (what actually happened)	Belief now (0-100)	What I learned
	If I cook with my friend, I will not enjoy myself. I will know I haven't enjoyed myself because there will be no shared laughter, lots of pauses and the evening will feel long.	100%	Cook spaghetti bolognese with my friend, Tom. Focus my attention on the steps to make the meal and on our conversation.			

Click the 'next' arrow to see what actually happened.

PAGE BREAK

Jamie gave it a go and this is what he found:

Behavioural Experiment Record Sheet – AFTER

Date	Prediction	Belief that the prediction will happen (0-100)	Experiment (How can I test this belief?)	Outcome (what actually happened)	Belief now (0-100)	What I learned
	If I cook with my friend, I will not enjoy myself. I will know I haven't enjoyed myself because there will be no shared laughter, lots of pauses and the evening will feel long.	100%	Cook spaghetti bolognese with my friend, Tom. Focus my attention on the steps to make the meal and on our conversation.	I could focus on the here and now by focusing on the food I was stirring and the smell of the bolognese. There were some pauses in the conversation when we were focused on cooking but they didn't feel unnaturally long. I laughed multiple times and definitely felt better afterwards.	20%	I learned that I can enjoy cooking with a friend. I learned that I can stop myself dwelling by focusing on smells and what I am doing, even if it takes a little more effort at first.

Now it's your turn!

Set up and try out your own behavioural experiment:

Choose one of your rebuilding life activities and notice what thoughts might be stopping you from trying it. These are likely your *predictions* about the activity.

Rebuilding life activity I'd like to try
(e.g. having coffee with a friend, walking to the park, reading 1 chapter of a book I like, doing a small art project)

My prediction

How much do I believe that the prediction will come true (on a scale of 0 to 100%)?

Experiment (How can I test this belief)?

If you'd like to plan a behavioural experiment for later, you can also download a blank record sheet *here.*



Skill 6/7: Behavioural experiments

- Often what holds us back from helpful activities are our predictions about them, for example, predicting that the activities won't be helpful.

- Test these predictions by doing a **behavioural experiment.** Make a prediction, say how much you believe it, how you'll test it, then record what actually happens and what you discovered.



Skill 6/7

Testing our predictions using behavioural experiments

PAGE BREAK



Skill 7/7: Extending kindness to ourselves

This module has introduced new techniques for you to try which can help you overcome dwelling. Like learning any new skill or breaking any habit, there are bound to be setbacks. It is important that you're kind to yourself in this process, in the same way a teacher would extend kindness to a pupil learning a new maths equation or new language.

Research shows that when people are kind to themselves or others, the part of the brain linked to optimism and joy is activated and they become better problem solvers. So, if you have found that you have tried one or more of the techniques in the module and it has gone less than perfectly, try to be kind to yourself rather than criticise yourself.

To help with this you may find it helpful to first imagine what a good friend would say to you if you tried something new and found it had not gone smoothly or what you would say to a good friend if they tried something new and found it tough.



Listen to the recording. It will guide you through an imagery of someone extending kindness to you. *Recording and script by Dr Hjordis Lorenz*

Script: Compassionate Nurturer Imagery

Let's start by sitting in a comfortable position, legs and shoulders relaxed. If you want, you can close your eyes. We'll take a deep breath and just focus our mind on our breathing, on the calm in and out of our breath.

Now imagine yourself in a situation where you are needing comfort. Pay attention to how this feels emotionally and notice what it feels like in your body.

Now Imagine that you are with a person who genuinely cares about you. It can be someone you know, someone imaginary or even an animal.

Imagine that person or animal coming up to you, maybe sitting next to you and offering you kindness and understanding.

Pay attention to what they look like, notice their posture, maybe they're leaning in towards you, notice their facial expression full of care. Notice any colours, any light around them. Notice their warmth.

They know exactly what you need right now.

If you need a hug, they will just hold you. Notice what that feels like, the warmth, the softness.

Or maybe there's something you need to hear right now. Notice what they are saying to you. Notice

their tone of voice as they speak words of comfort and encouragement. Just spend a moment listening to what they say.

They are genuinely interested and listening to you. You know that nothing you say sounds silly to them. They never judge you. They really care about you and want what is best for you.

They understand your mind and know how hard it has been and how hard you're trying.

Notice how this makes you feel. Let's stay with that feeling for a moment.

And as the image fades away, hold on to that feeling they gave you. And you know your person or animal will always be there for you, whenever you need them. You know that they will hold you in mind and that you matter to them.

Now take a deep breath. Whenever you're ready, start coming back into the room. Slowly open your eyes and maybe stretch to bring yourself back into the present moment.

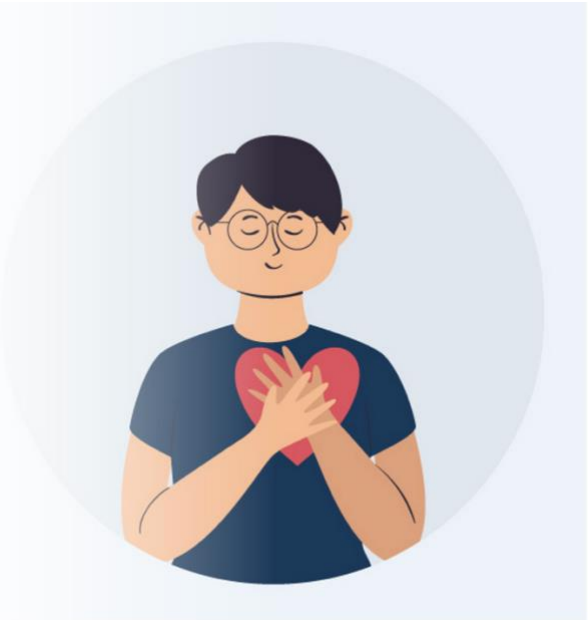


Picture from Berkshire NHS Foundation Trust

When you spot yourself dwelling, use it as a cue to speak to yourself in the same way you would speak to a good friend. Do something to take care of yourself (like drinking a glass of water or doing one of your rebuilding life activities). Try to be your own best friend.

For example, say to yourself:

"It's understandable your thoughts get stuck on this event. It was a horrible thing that happened to you and never should have happened. You didn't deserve it. I know how hard you've been fighting since. I know that dwelling makes you feel even worse, so why don't you go for a walk around the block with your dog, you usually enjoy that. It's okay if you don't feel better immediately. This takes time and you're doing the best you can to take care of yourself"





Skill 7/7: Extending kindness to ourselves:

- When you're trying one of the techniques to overcome dwelling in this module and it does not go to plan, use it as a cue to **speak to yourself with kindness.** What would a close friend say to you?



Skill 7/7

Extending kindness to ourselves

CONGRATULATIONS! You've completed 85% of the module!

Part A What is dwelling?	**Part B** Why is dwelling unhelpful?	**Part C** How to interrupt the cycle of dwelling	**Part D** Preventing dwelling	**Part E** Summary

PAGE BREAK



Part D: Prevent dwelling



Spot and address triggers

Once you've got good at recognising dwelling and skilled at interrupting it, you may want to move onto preventing it from starting in the first place. To do this, you'll need to spot your warning signs for dwelling and respond to them. This helps to prevent the cycle of dwelling from starting.

For many of us, dwelling on our trauma has become a habit, something we do without even noticing or choosing to do so. So the first step to changing this habit, is spotting triggers and warning signs for dwelling.

Try to notice what your warning signs for dwelling are:

Any **trauma triggers**? (e.g. unwanted intrusive memories, flashbacks, nightmares, seeing a person who reminds you of the trauma or paperwork that is about the trauma)

Any **situations**? (e.g. being home alone in the evening without plans; when trying to fall asleep)

Any **feelings**? (e.g. feeling overwhelmed, exhausted, angry)

Any **thoughts**? (e.g. asking myself "why me"; self-critical thoughts; negative thoughts)

Any **behaviours**? (e.g. putting thigs off, avoiding people, thinking rather than doing)

Any **body sensations**? (e.g. tense, in pain)

Once you have listed your warning signs for dwelling, **plan ahead** to address them.

For example if you always dwell while you're trying to fall asleep, you could focus your full attention on a calming audio book or rain sounds while you fall asleep.

Choose one of the warning signs from above that is most relevant for you:

Qualtrics logic will copy this answer into the IF-THEN plan on the next page.

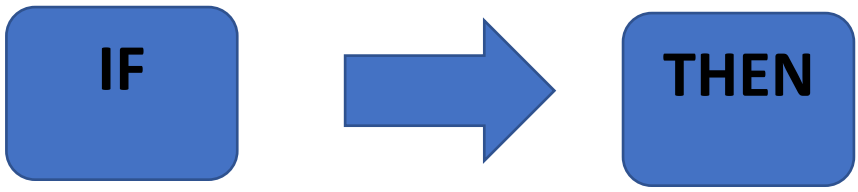
Note how you could plan to address this warning sign:

A good way to address your triggers for dwelling is by applying an IF-THEN plan. See next page.

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IF-THEN plans

Spotting the warning sign to dwelling is the **IF** part of the plan and practising with an alternative to the habitual response is the **THEN** part of the plan. **IF I notice** this warning sign, **THEN I will** carry out my new response.



For example:

Warning sign: situation
Response: focusing on the here and now

IF I'm trying to fall asleep (when I often start dwelling) ⇒ **THEN** I will focus on the here and now by focusing on the soft feeling of my pillow and the sound of the rain outside.

Warning sign: trauma trigger
Response: helpful how and what thinking

IF I spot paperwork about my trauma ⇒ **THEN** I will use practical thinking by focusing on "what" I can do next like sending one email to my lawyer.

Warning sign: body sensation
Response: rebuilding life activity

IF I feel my heart racing and my muscles tensing ⇒ **THEN** I will go for a 5-minute walk around the block

Warning sign: self-critical thinking
Response: self-compassion

IF I notice myself being hard on myself with "I should have done X" thoughts ⇒ **THEN** I will practice a kinder sentence "it's understandable that…"

These examples give an idea of how you can plan a response for each warning sign.

Quick Tip:

If dwelling is linked to a particular context or routine (IF), make a plan of how to change it (THEN). If dwelling is linked to specific mood (IF), then the opposite action can be used to influence how you feel (THEN), like if you're tense and anxious, try doing something calming.

Make your own IF-THEN plan:

IF… *Qualtrics logic will paste the answer to the above question "Choose one of the warning signs from above that is most relevant for you" here.*

THEN…



Prevent dwelling:

- **Spot your warning signs for dwelling.** These can include trauma triggers or situations, behaviours, bodily reactions, actions, feelings or thoughts.
- **IF-THEN plans** can help you to respond differently to your warning signs and prevent dwelling from starting.

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Video Testimony

Watch the Video testimony from a frontline paramedic who had PTSD and describes how he used to dwell.
Trigger warning: refers to a colleague's suicide attempt.



4.40 min video clip of a paramedic who was a previous client of Prof Jennifer Wild. He gave consent for the use of this video in the current study.
The client describes his dwelling thoughts about how he should have intervened much faster and that his past trauma with his brother should have made him super skilled at recognising that his colleague was at risk. He did save his colleague's life. In this video, we hear him talk about how he disengaged from dwelling.
Techniques he notes that help him to stop dwelling are: noticing his dwelling (spot and label), overriding thoughts with more objective reminders (updating why questions) and doing something active (rebuilding life).

Link: https://youtu.be/C8IB54SVqpQ (Video is "unlisted". Only people with this link can access it. Video is embedded into Qualtrics).

What dwelling thoughts did the paramedic describe?

What did he say helped him to stop dwelling?

Part A What is dwelling?	**Part B** Why is dwelling unhelpful?	**Part C** How to interrupt the cycle of dwelling	**Part D** Preventing dwelling	**Part E** Summary

CONGRATULATIONS! You've completed 95% of the module!

PAGE BREAK



Part E: Summary

Dwelling about a traumatic event is **very common** but often unhelpful and makes people feel worse.

Here is a summary of how to disrupt the cycle of dwelling:

If you're already dwelling:

- Spot & label dwelling (Practice the 'Thoughts as Trains' imagery
- Practice "How" instead of "Why" thinking
- Focus on reminders of the Here & Now
- Experiment with dwelling time and dwelling-free zones
- Plan and do rebuilding life activities
- Test out your beliefs using behavioural experiments
- Treat yourself with kindness

Prevent dwelling:

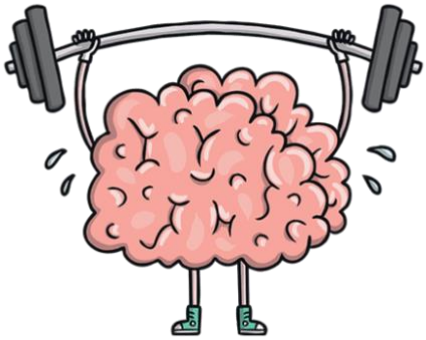
- Spot & address warning signs for dwelling
- Use your IF-THEN plan to respond to warning signs

Quick Tip:

It's not a one-size-fits-all. Experiment with what works for you.

Quick Tip:

These techniques only work if you **practice them** regularly. As with learning new skills to overcome habits, the more you practice, the better you will get and the easier it will become.



If you would like to download a pdf copy of the content of this module, please click *here.*

Part A What is dwelling?	**Part B** Why is dwelling unhelpful?	**Part C** How to interrupt the cycle of dwelling	**Part D** Preventing dwelling	**Part E** Summary

CONGRATULATIONS! You've completed 100% of the module!

If you'd like to download a pdf copy of this module, please click **here.**

What's next? Click the arrow to find out.

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What's next?

Next, you will be contacted by our researcher Hjordis to arrange a telephone or Teams call. The call should take place in the same week as you have completed the module – **so this week.**

The point of the call is to practice a few of the skills together. This will help you to experience and better remember them. The call will also help to clarify anything that was confusing and answer any questions you may have.

The call can take up to 1 hour – but of course also shorter, whatever you would find most helpful.

Do you already have a time scheduled with Hjordis?

Yes, it's on _____

No, it's not yet scheduled. This day/time works best for me: _____

We are keen to hear your feedback on this module. Please click the "next" arrow.



Feedback

We believe it is important for us to continually develop our module so that we can offer the best possible help for people with this problem. We would therefore be grateful if you could give us some feedback about this module.

We are especially keen to know:

1. What have you found helpful in this module?

2. What have you found unhelpful or less helpful?

3. If there are any changes you would like to suggest, or ideas you have to make it more user-friendly.

4. How helpful did you find this module?
   Slider from 0-10: 0 = not at all helpful - 10 = very helpful

5. How relevant did you find this module?
   Slider from 0-10: 0 = not relevant at all - 10 = very relevant

THANK YOU FOR COMPLETING THIS MODULE ON COPING WITH DWELLING!

Please click the “next” arrow to make sure your answers are recorded.

Appendix U: Outcome Measures

Sociodemographic Questions

(Note: demographic questions were collected verbally via phone after informed consent has been given and screening has been completed, as requested by the Sponsor).

These questions ask a bit about you, your background, and your current circumstances:

1. **What is your name? _____**

2. **What is your email address** (only to be used for study participation) _____

3. **What is your phone number** (only to be used for study participation) _____

4. **What is your age?** _____ years

5. **What is your gender?**
   - Female
   - Male
   - Other
   - Prefer not to say

6. **What is your ethnic group?**

Choose one option that best describes your ethnic group or background

White
- English/Welsh/Scottish/Northern Irish/British
- Irish
- Gypsy or Irish Traveller
- Any other White background, please describe

Mixed/Multiple ethnic groups
- White and Black Caribbean
- White and Black African
- White and Asian
- Any other Mixed/Multiple ethnic background, please describe

Asian/Asian British
- Indian
- Pakistani
- Bangladeshi
- Chinese
- Any other Asian background, please describe

Black/ African/Caribbean/Black British
- African
- Caribbean
- Any other Black/African/Caribbean background, please describe

Other ethnic group
- Arab
- Any other ethnic group, please describe: _____

7. How long have you been on the IAPT (Talking Therapy/Healthy Minds) waiting list? (Since your assessment call with a Psychological Wellbeing Practitioner. This includes time completing any online/written material or participating in a trauma information group).
____ months
_____ weeks

8. Have you been diagnosed with any mental health disorder/s?
_____

9. Have you had any previous treatment for PTSD? Yes/no
If yes, please explain (optional)

10. Are you currently taking any medication for your mental health? (optional. If yes, for how long?) *If very recent make a note as it could impact fluctuations in mood*
_____

PHQ-9 only collected as part of first (week 1) and last questionnaire:

Patient Health Questionnaire PHQ-9
Over the last 2 weeks, how often have you been bothered by any of the following problems?

	Not at all (0)	Several days (1)	More than half the days (2)	Nearly every day (3)
1. Little interest or pleasure in doing things				
2. Feeling down, depressed, or hopeless				
3. Trouble falling or staying asleep, or sleeping too much				
4. Feeling tired or having little energy				
5. Poor appetite or overeating				
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down				
7. Trouble concentrating on things, such as reading the newspaper or watching television				
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual				
9. Thoughts that you would be better off dead or of hurting yourself in some way				

Weekly measures:

PTSD Checklist for DSM-5 (PCL-5)
Instructions only at screening, otherwise, start right with PCL5 questionnaire

Instructions: This questionnaire asks about problems you may have had after a very stressful experience involving *actual or threatened death, serious injury, or sexual violence*. It could be something that happened to you directly, something you witnessed, or something you learned happened to a close family member or close friend. Some examples are a *serious accident; fire; disaster such as a hurricane, tornado, or earthquake; physical or sexual attack or abuse; war; homicide; or suicide.*

First, please answer a few questions about your *worst event*, which for this questionnaire means the event that currently bothers you the most. This could be one of the examples above or some other very stressful experience. Also, it could be a single event (for example, a car crash) or multiple similar events (for example, multiple stressful events in a war-zone or repeated sexual abuse).

Briefly identify the worst event (if you feel comfortable doing so): _____
How long ago did it happen? _____ (please estimate if you are not sure)
Did it involve actual or threatened death, serious injury, or sexual violence? __Yes __No
How did you experience it?
_____ It happened to me directly
_____ I witnessed it
_____ I learned about it happening to a close family member or close friend
_____ I was repeatedly exposed to details about it as part of my job (for example, paramedic, police, military, or other first responder)
_____ Other, please describe _____

If the event involved the death of a close family member or close friend, was it due to some kind of accident or violence, or was it due to natural causes?
_____Accident or violence
_____Natural causes
_____Not applicable (the event did not involve the death of a close family member or close friend)

Keeping this worst event in mind, read each of the problems on the next page and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

In the past month, how much were you bothered by:	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. Repeated, disturbing, and unwanted memories of stressful experiences?	0	1	2	3	4
2. Repeated, disturbing dreams of the stressful experience?					
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)					
4. Feeling very upset when something reminded you of the stressful experience?					
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart poundings, trouble breathing, sweating)?					
6. Avoiding memories, thoughts, or feelings related to the stressful experience?					
7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?					
8. Trouble remembering important parts of the stressful experience?					
9. Having strong negative beliefs about yourself, other people, or the world					

	(for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?					
10.	Blaming yourself or someone else for the stressful experience or what happened after it?					
11.	Having strong negative feelings such as fear, horror, anger, guilt, or shame?					
12.	Loss of interesting in activities that you used to enjoy?					
13.	Feeling distant or cut off from other people?					
14.	Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?					
15.	Irritable behaviour, angry outbursts or acting aggressively.					
16.	Taking too many risks or doing things that could cause you harm?					
17.	Being "super alert" or watchful or in guard?					
18.	Feeling jumpy or easily startled?					
19.	Having difficulty concentrating?					
20.	Trouble falling or staying asleep?					

Response to intrusion questionnaire (RIQ) – Rumination subscale
(Clohessy & Ehlers, 1999; Steil & Ehlers, 2000)

What do you do when memories of the traumatic event pop into your mind? Please circle the answer that applied best to you **during the past week**.

1.	I think about how life would have been different if the event had not occurred.	Never (0)	Sometimes (1)	Often (2)	Always (3)
2.	I think about why the event happened to me.	Never	Sometimes	Often	Always
3.	I dwell on how I used to be before the event.	Never	Sometimes	Often	Always
4.	I dwell on what other people have done to me.	Never	Sometimes	Often	Always
5.	I dwell on what I should have done differently.	Never	Sometimes	Often	Always
6.	I go over what happened again and again.	Never	Sometimes	Often	Always

Repetitive Thinking Questionnaire (RTQ-10) (short form, state, past version)
(Mahoney et al., 2012; McEvoy et al., 2012; 2014)
Recall the last time you felt especially distressed or upset. Briefly describe this situation in terms of what happened and what you did.

_____

Please answer the following questions in relation to the situation you have just described. How true (1-5) are each of these statements with respect to your experience **after the situation**?

1 Not true at all	**2**	**3** Somewhat true	**4**	**5** Very true

1. I had thoughts or images about all my shortcomings, failings, faults, mistakes.	1	2	3	4	5
2. I had thoughts or images about a past event that came into my head even when I did not wish to think about it again.	1	2	3	4	5
3. I had thoughts or images that "*I won't be able to do my job/work because I feel so badly."*	1	2	3	4	5
4. I had thoughts or images of the situation that were difficult to forget.	1	2	3	4	5
5. Once I started thinking about the situation, I couldn't stop.	1	2	3	4	5
6. I noticed that I had been thinking about the situation.	1	2	3	4	5
7. I had thoughts or images of the situation that I tried to resist thinking about.	1	2	3	4	5
8. I thought about the situation all the time.	1	2	3	4	5
9. I knew I shouldn't have thought about the situation, but I couldn't help it	1	2	3	4	5
10. I had thoughts or images about the situation and wishing it had gone better.	1	2	3	4	5

Time spent dwelling
Thinking about the **past week**, what amount of time do you estimate that you spent dwelling? (in estimated minutes) _____

Acceptability

Acceptability Questions at the end of the online module:

How helpful did you find this module? 0 (not at all) – 10 (very much)

How relevant did you find this module? 0 (not at all) – 10 (very much)

What did you find helpful? _____

What did you find unhelpful? _____

Do you have any suggestions for improvement? _____

Questions added only to the last questionnaires (week 2 post-intervention)

Question on adherence to learned techniques

Thinking about the **past week**, how much did you use the skills to overcome dwelling that were covered in the Coping with Dwelling module, when you spotted that you were dwelling?

- I didn't dwell so didn't need to apply the skills
- 0 – not at all
- 1 – sometimes
- 2 – often
- 3 – always

Feasibility and Acceptability Questions

Questions about the Coping with Dwelling intervention:

1. How **helpful** did you find the **skills** to deal with dwelling?
   0=not at all helpful – 10=extremely helpful
2. How helpful did you find the **online module** in teaching you?
   0=not at all helpful – 10=extremely helpful
3. How helpful did you find the **phone call** to review module and skills?
   0=not at all helpful – 10=extremely helpful

4. How **easy** did you find it to apply the skills you learned?
   0=Not easy at all – 10=Extremely easy
5. Do you think you will **continue using** the skills you learned in future? Please explain your answer.
   1=yes
   2=maybe
   3=no
6. What would be blocks that would prevent you using the techniques in the future? ____
7. Do you have any suggestions for improving this intervention? _____
8. Is there any other feedback you'd like to give? _____

What will happen next?

Once you have completed this questionnaire **you will receive £10** as thank you for participating in this study. After we have analysed the results, we will also send you a brief summary of the results of what we found and how that can help next steps.

Would you like to participate in a brief exit interview to give us your feedback on the study, how you found it, and what we can improve?

- o Yes, happy to. I'm available to call _____
- o No thank you

Exit Interview

Indicative guide for interviews with participants

Introduction

- Researcher/s introduce the aim of the research and explain the aim of the discussion is to explore their experience of the rumination intervention
- Researcher confirms what stage the participant is at (completed vs dropped out/withdrew)

Issues to explore in the interview

General and Feedback on Questionnaires

How have you found taking part in the rumination intervention study so far?

What made you want to **get involved**?
1. What did you hope to get out of taking part in the rumination intervention?
2. Did you have any concerns or worries that made you hesitant to get involved?
3. Was there anything you think could have been done to encourage you/others to get involved?

How did you get on with the **questionnaires** and consent forms?
1. Was there anything that you found difficult in filling in the questionnaires?
2. Was there anything that could've been made easier for you here?
3. How did you find accessing the questionnaires online?

Feedback on the online rumination intervention and phone call

1. In general, what did you find helpful during the online rumination intervention and phone call? What tools in the intervention have made the biggest difference in your life?
2. Were there any aspects of your intervention that you didn't find helpful? If so, what were they?
3. Were there any things that researcher did or said (esp. on the telephone call) that you found particularly helpful? Did the researcher do or say anything that you didn't find helpful?
4. Did you have any problems in motivating yourself during to apply the intervention tools? *Please tell us about that*. What helped you stay motivated?
5. Looking back, are there any additional things that would have helped you stay motivated? Is there anything we could have done to have helped you stay motivated?
6. What was the most helpful content of the online intervention or telephone call for you?
7. What was the least helpful of the online intervention or telephone call?
8. What could we do to improve the of the online intervention or telephone call?

Issues to explore in the interview for those who dropped out

1. At what stage did you begin to feel like the study wasn't suitable for you?
2. Was there anything you felt you weren't getting from the study that could be improved?

Appendix V: TAU Statistic

The Tau-U statistic is derived from Kendall's Tau and the Mann Whitney U Statistic. It can is designed to test the separation between data points in the baseline (phase A) and (post) intervention (B) phases of a single case experimental design (SCED) and indicates the degree of non-overlap of the data points in each phase. Tau-U can also be used to assess baseline and intervention phase trends. The online calculator (Vannest et al., 2016) allows for evaluation of phase A and phase B trend and calculation of Tau-U A-B adjusting for phase A trend where required. Brossart et al., (2018) argue that controlling for baseline trend should occur when there is both theoretical and empirical justification. In the current study controlling for phase A trend where a significant trend was identified was important given that natural recovery in PTSD is common (Rosellini et al., 2018). Tau-U analysis is described as robust to data fluctuations and although it is based on an assumption of lack of autocorrelation, Parker et al., (2011) argue that it is robust to varying levels of autocorrelation within the data.

Appendix W: Graphs and Visual Inspection of Outcome Measures

Figure 1

Response to Intrusion Questionnaire (RIQ) for 3-Week Baseline

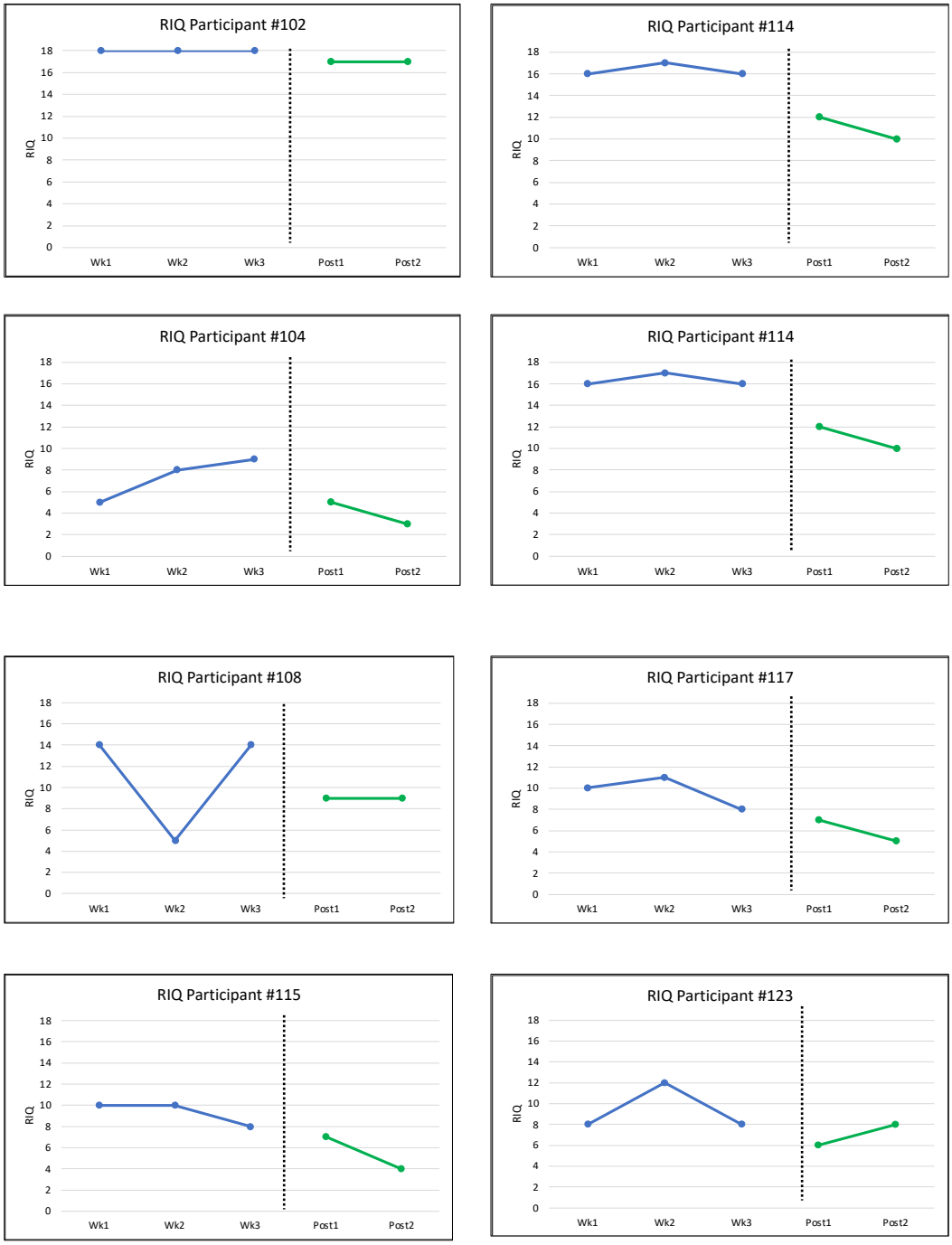


Figure 2

Response to Intrusion Questionnaire (RIQ) for 5-Week Baseline



Visual Inspection of Data

Data was visually inspected within and across cases to assess apparent stability of baselines, evidence for intervention effects, examining evidence for the stability of baselines and any intervention effects in line with staggered intervention start dates. This is in line with research recommendation for case series analysis (Barlow & Hersen, 1984; Morley, 2017) and was included as part of feasibility estimation. External factors and anomalies (e.g. sudden spikes or drops) were considered (Kratochwill et al., 2010).

Visual Inspection Response to Intrusion Questionnaire (RIQ)

Visual inspection of individual time-series graphs was carried out (Kazdin, 2010; Morley, 2017), which indicated a decrease in rumination in response to intrusive trauma memories (RIQ) for most participants (n=9). However, for five of these, this decrease already started in phase A. The remaining n=7 showed mixed trends and unstable pattern across phases. Changes to variability were difficult to assess with only two post timepoints.

Figure 3

PTSD Checklist for DSM-5 (PCL-5) 3-Week Baseline

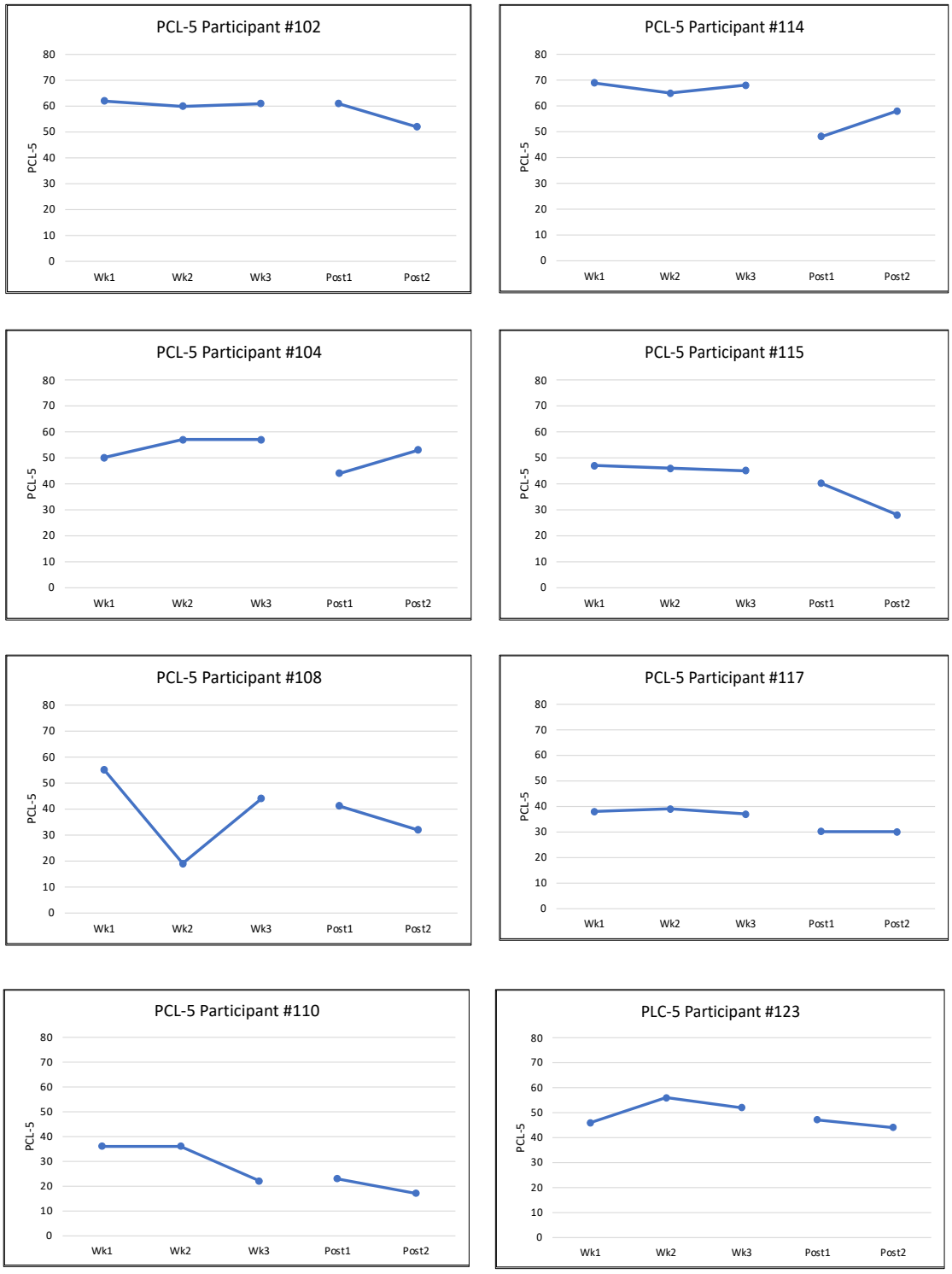
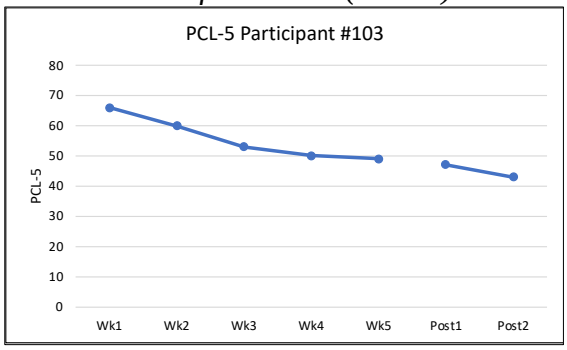
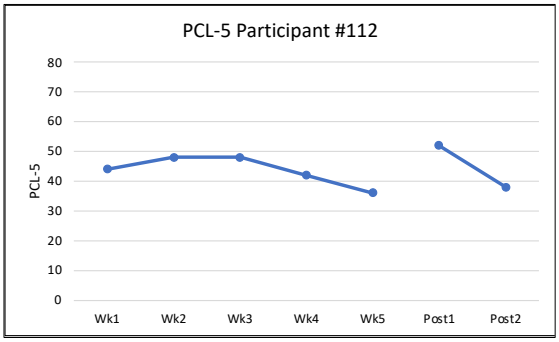
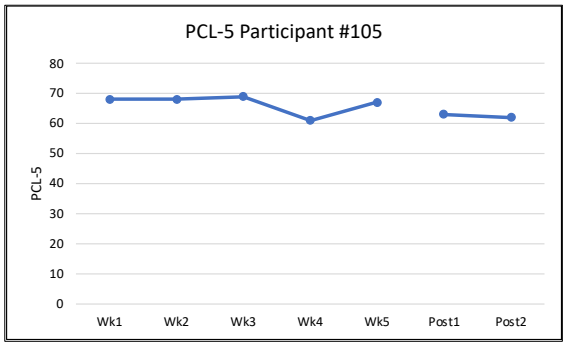


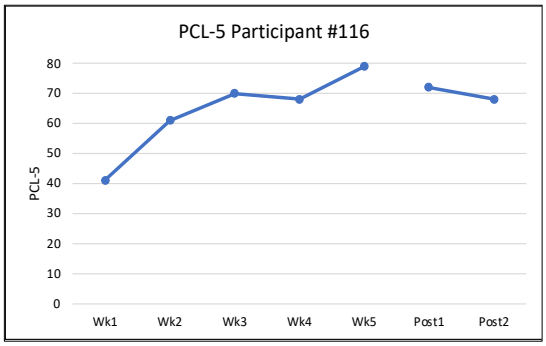
Figure 4

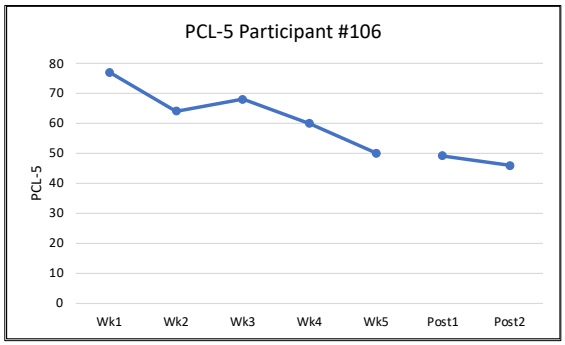
PTSD Checklist for DSM-5 (PCL-5) 5-Week Baseline

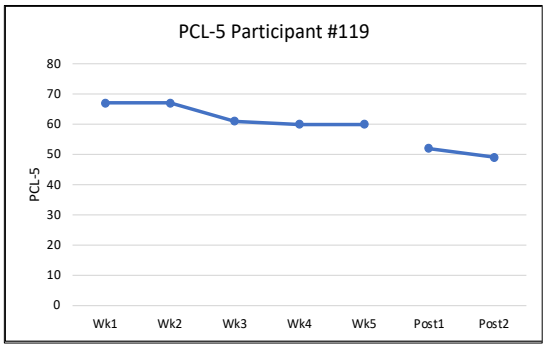


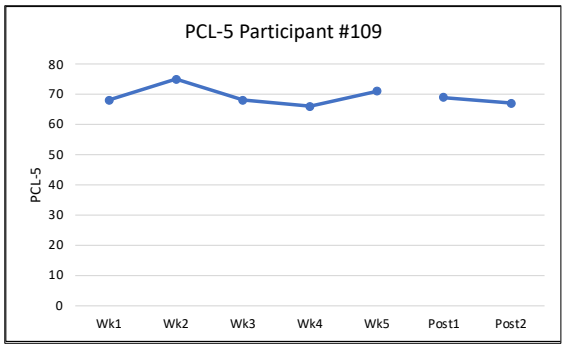


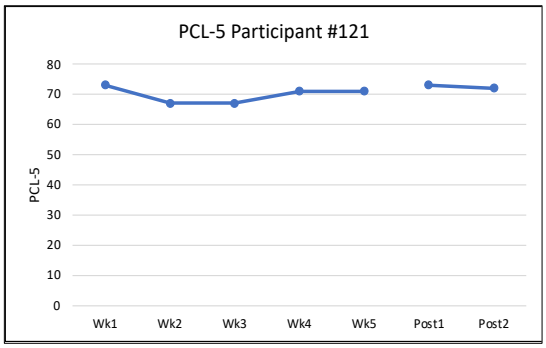










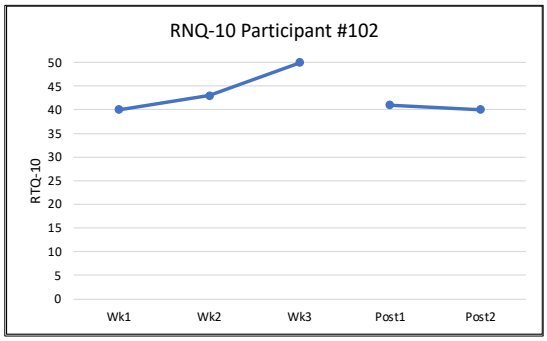


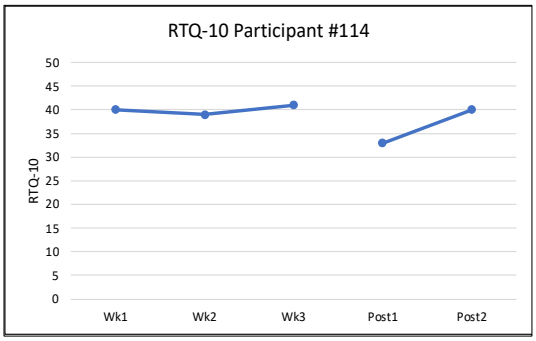
Visual Inspection PTSD Measure (PCL-5)

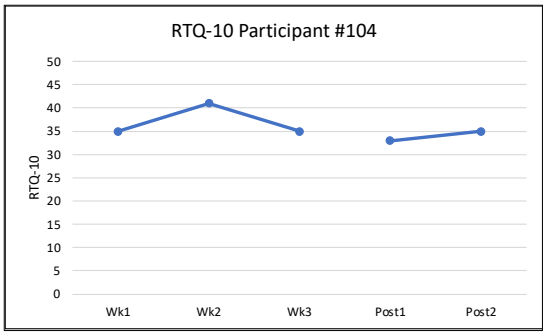
Visual inspection of individual time-series graphs was carried out (Morley, 2017), which indicated a decrease (central tendency) in PTSD symptom severity based on the PCL-5 for most participants (n=11), however, for eight of these, this decrease already started during phase A. The remaining n=5 showed a mixed scores, most with little variability except for participant 108 who showed an unexplained large drop in scores in week two only. For participant 116, scores steadily increased across the five baseline weeks, and decreased during the two post-intervention weeks, where it would have been interesting to see if this downward trend continues. Changes to variability were difficult to assess with only two post timepoints. There was no noticeable visual difference in pattern between the 3-week and the 5-week baseline.

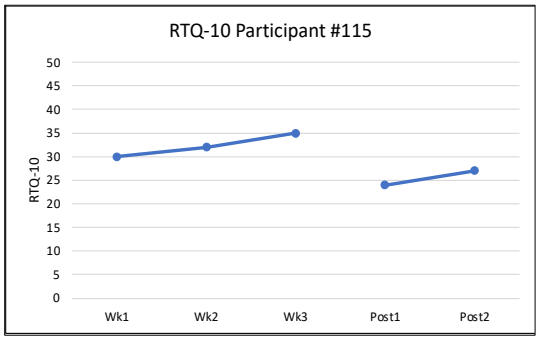
Figure 5

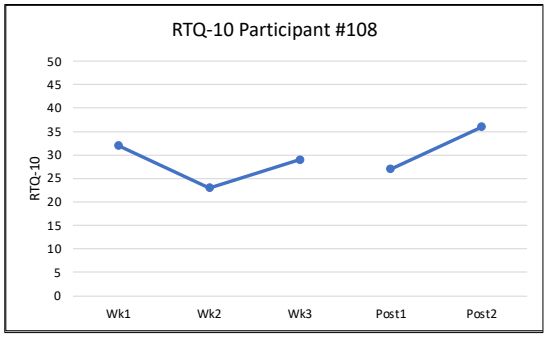
Repetitive Thinking Questionnaire – Short Form (RTQ-10) - 3-Week Baseline

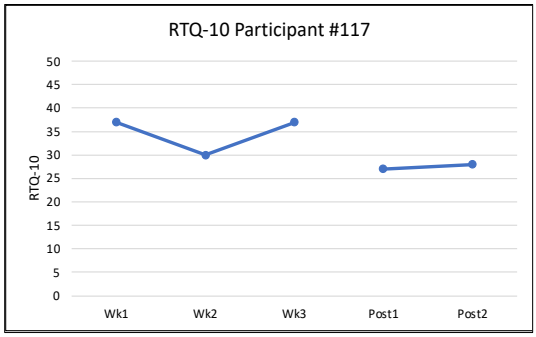


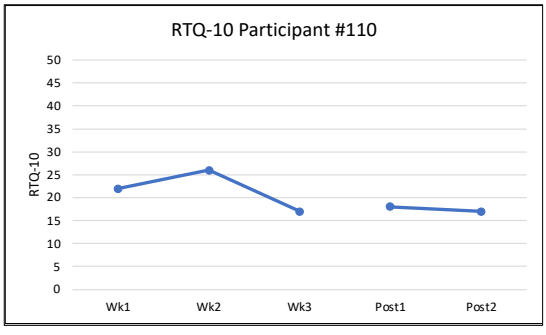












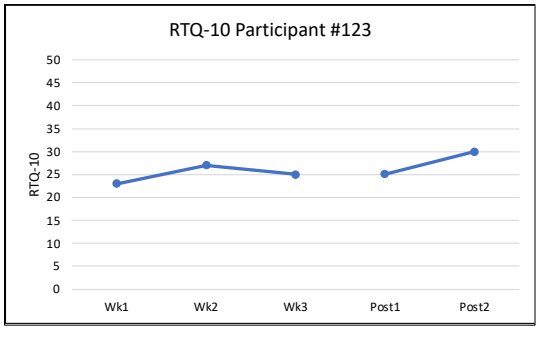
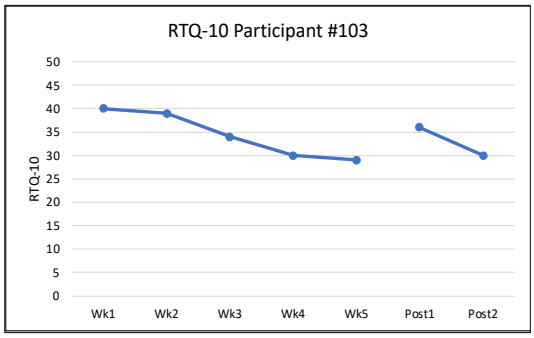
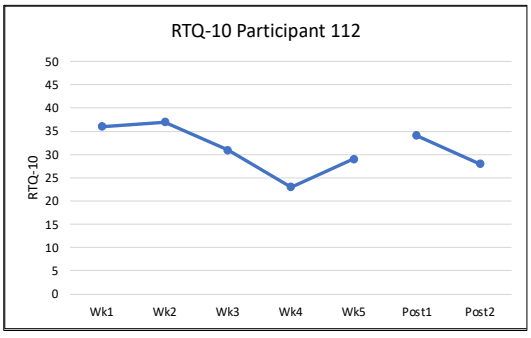
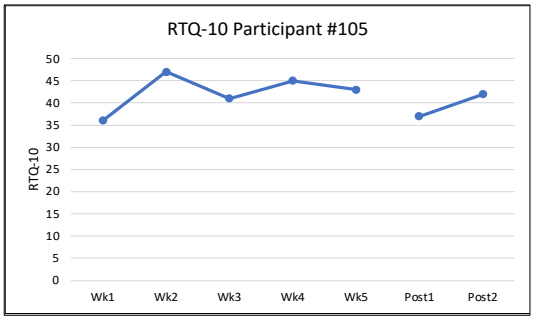


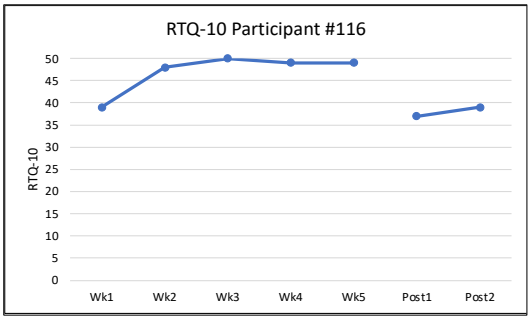
Figure 6

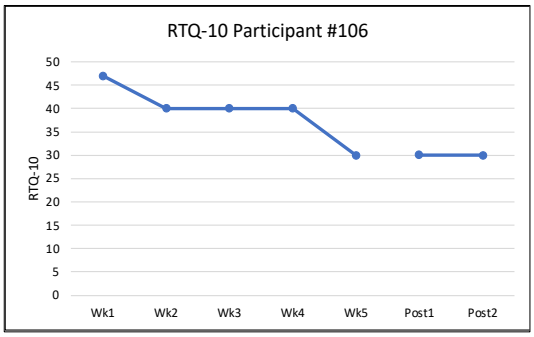
Repetitive Thinking Questionnaire – Short Form (RTQ-10) - 5-Week Baseline

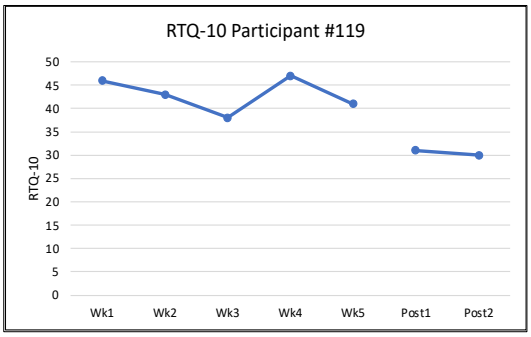


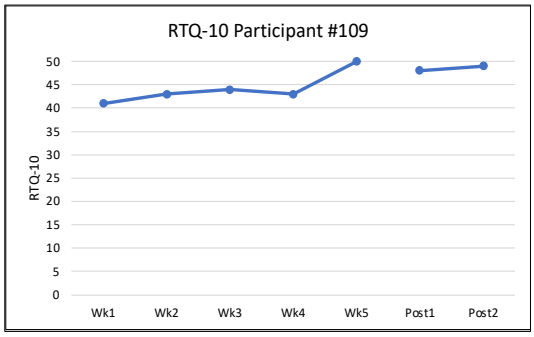


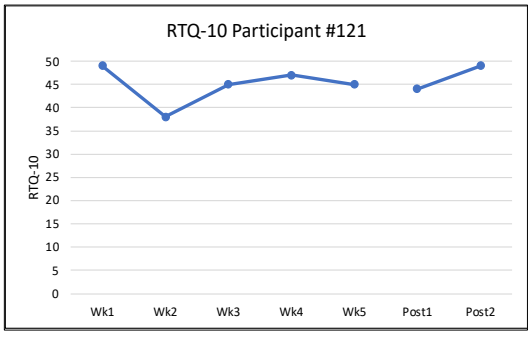










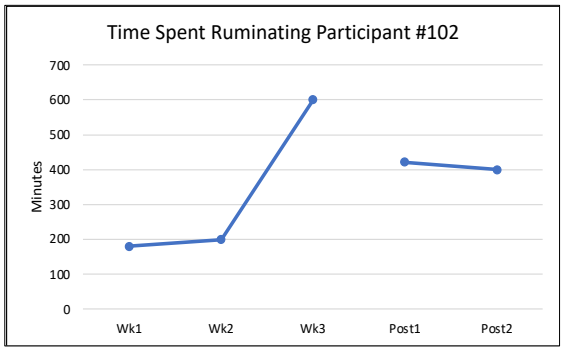


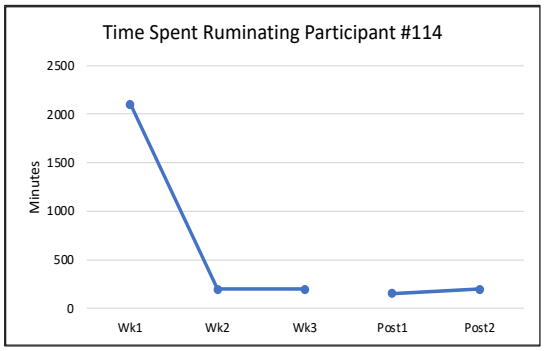
Visual Inspection Repetitive Negative Thinking measure (RTQ-10)

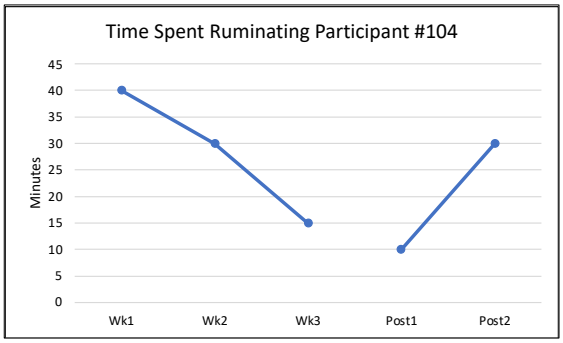
Visual inspection of individual time-series graphs was carried out (Morley, 2017), which indicated an a decrease in repetitive negative thinking (RNT) for seven participants. For two of these, this decrease already started during the baseline phase, while for two others, severity of RNT was increasing during the baseline phase and notably changed direction and decreased in the post-intervention phase. Different to other measures, seven participants showed unstable scores with marked variability across the weeks of the study with no clear visual pattern. Finally, three participants showed an increase in scores (worsening of RNT). For one, this was in relation to large variability overall, for another, this increase already commenced during the baseline so is likely not attributable to the intervention. Comparing the 3-week versus 5-week baseline groups, more individuals showed a mixed/variable pattern in the 5-week baseline group.

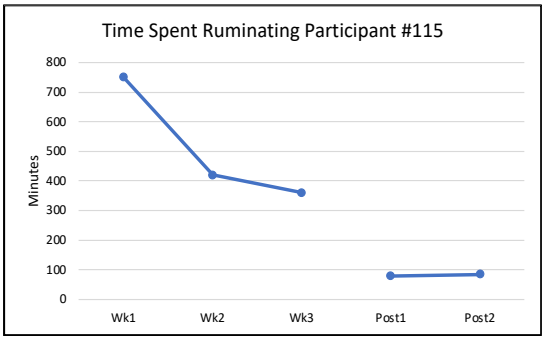
Figure 7

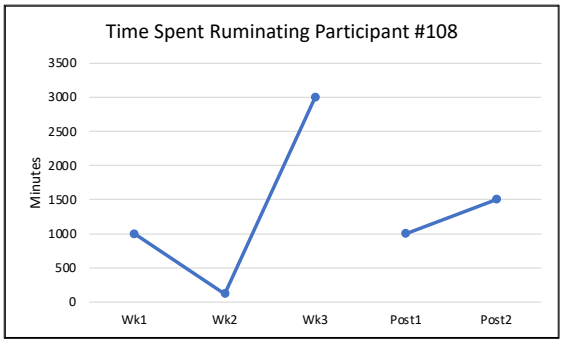
Time Spent Ruminating - 3-Week Baseline

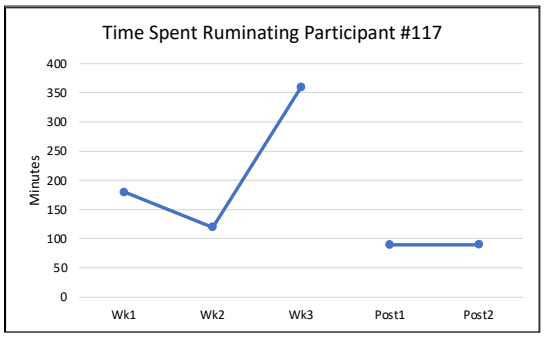


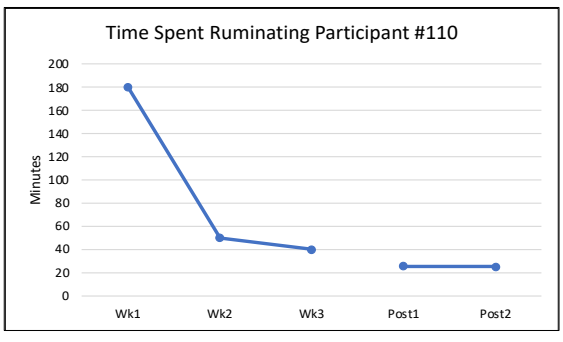












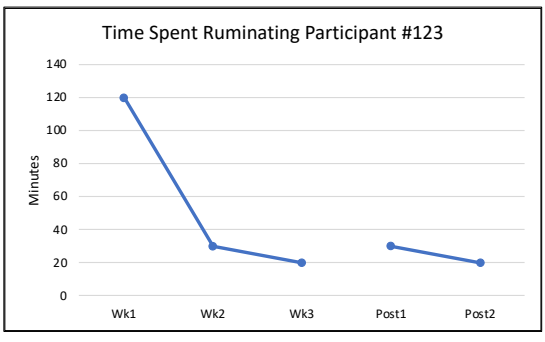
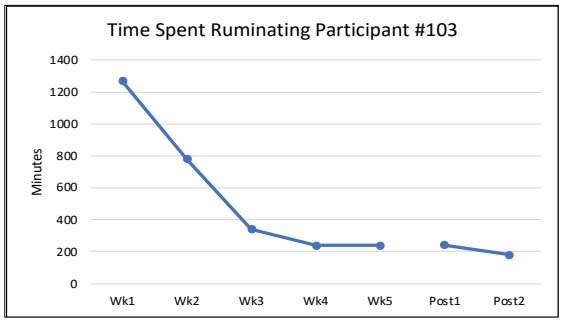
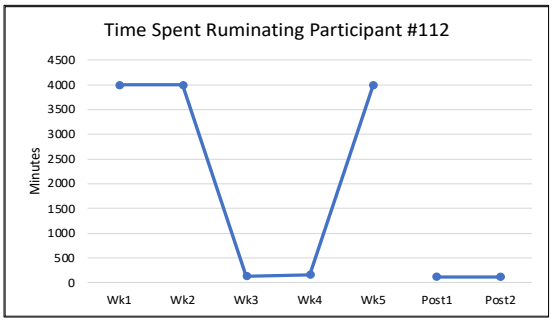
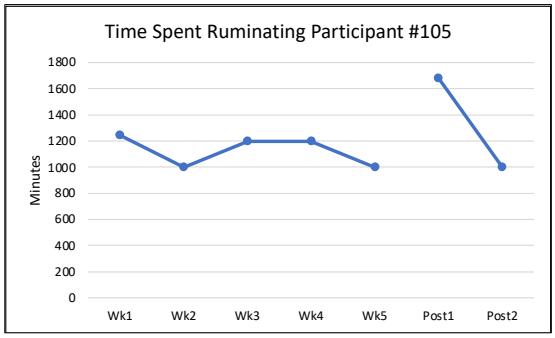


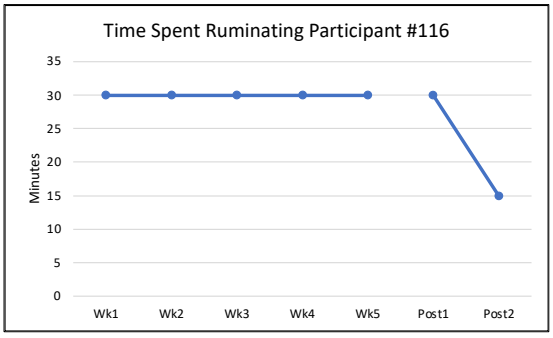
Figure 8

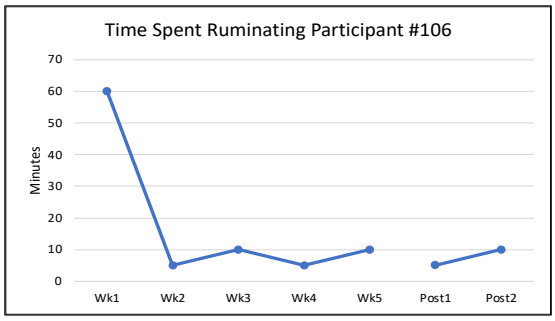
Time Spent Ruminating - 5-Week Baseline

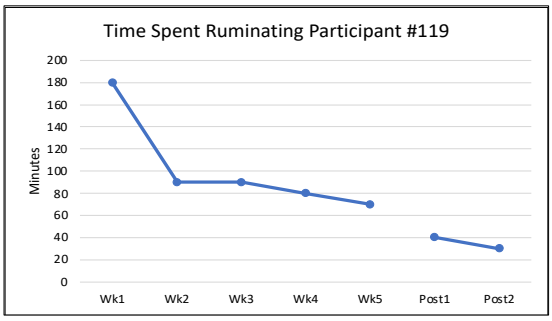


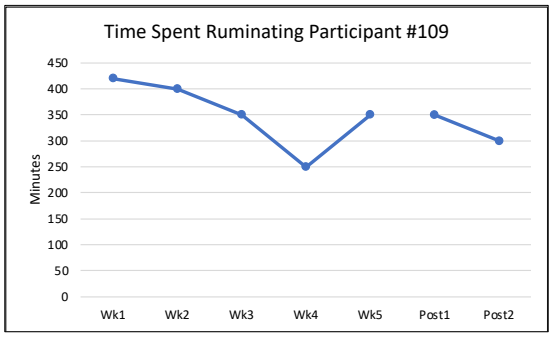


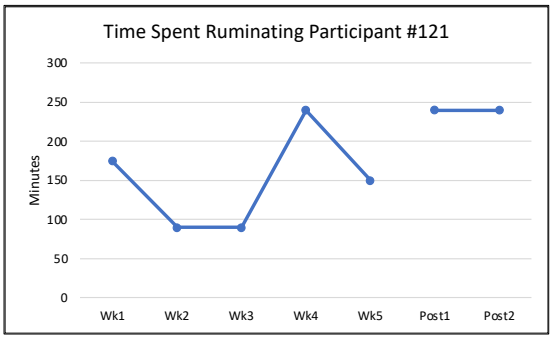












Visual Inspection Time Spent Ruminating

It must be noted that these are the only graphs that are not presented with a consistent range of scores on the y-axis (number of minutes per week). This was chosen due to the great variability in scores, to better visualise the changes during the study time for each participant, however, makes it more difficult to objectively visually compare between participants. Different to the other measure, there was no minimum or maximum score set (besides the original screening that identified participants as ruminators; and maximum set by available minutes within a week). The limitation section discusses the limitations of this question and recommends future studies use a more standardised approach.

Individuals showed extreme variability (e.g. participant 112 varied between 150 minutes/week to 4000 minutes, confirming the correctness of these scores verbally noting "sometimes it's a few hours, sometimes almost all the time").

Visual inspection of individual time-series graphs was carried out (Morley, 2017), which indicated a decrease (central tendency) in PTSD symptom severity based on the PCL-5 for most participants (n=11), however, for eight of these, this decrease already started during phase A. The remaining n=5 showed a mixed scores, most with little variability except for participant 108 who showed an unexplained large drop in scores in week two only. For participant 116, scores steadily increased across the five baseline weeks, and decreased during the two post-intervention weeks, where it would have been interesting to see if this downward trend continues. Changes to variability were difficult to assess with only two post timepoints. There was no noticeable visual difference in pattern between the 3-week and the 5-week baseline.

Appendix X: Written Feedback from Participants

Written Feedback from Participants

ID	Comment
Post-module: What did you find helpful?	
102	Recognising of dwelling
103	Coping techniques and ideas
104	Video testimonies
105	It covered so much and I found it really helpful especially the use of both video examples and I'm pleased that you had a read out option on every page which was helpful for me in particular because I am dyslexic
106	Why dwelling happens and what causes it
108	Given my catastrophic thinking, a persona which has helped me gain emotional distance from it
109	Talking
110	If-Then Plan
112	Hearing about other people cope with PTSD
114	Coping strategies to cope with dwelling and techniques to manage the PTSD, anxiety and stress. The researcher was very caring, understanding, considerate and compassionate, thank you.
115	The whole module is very well laid out and easy to understand, whilst difficult in some places for me I found it to be very informative
116	Multiple approaches to deal with dwelling
117	I found the module well-structured and easy to follow. It gives a variety of techniques and I found the problem solving/practical thinking section to be really useful.
119	Ways to cope with dwelling
121	Lots, I have a list - using real people's experiences was helpful
123	The techniques
Post-Module: What did you find unhelpful?	
102	Dwelling is outlined as negative thinking patterns. I understand and I appreciate adapting a person's thinking style/approach - but this somewhat serves in making me feel that I am to blame for my ongoing trauma/negativity. That I am keeping myself in an unhealthy way of thinking. If I could change/control/limit/interrupt dwelling, I wouldn't be doing it at all.
103	n/a
104	n/a
105	I can't think of anything at the moment but I will reflect on it and let you know if I identify anything
106	Nothing really

108	Very basic beginner level it was very simple - not really relevant if had previous trauma therapy
109	Reading and writing
110	n/a
112	n/a
114	n/a
115	Nothing!
116	
117	It is difficult because, in focusing on techniques to reduce dwelling, i found myself actually dwelling a little more at times. However, I can hope that once the strategies become more embedded this would reduce.
119	n/a
121	Nothing
123	n/a

Post-Module: Suggestions for Improvement

102	n/a
103	No, it was delivered well.
104	The low angle shot for therapist was uncomfortable, as if she is talking down
105	I spent over 2 hours on it which was a challenge but I reminded myself how long I spend ruminating! And I'm pleased that I didn't do much of dwelling to this module.
106	Nothing to suggest as already amazing
108	Do a more advanced course in tandem - this is for someone with little to no emotional intelligence it was that simplistic
109	The change in direction with this course was good for me
110	No
112	No, it is all good
114	Possibly elongate the timelines between weekly follow up so that the real impact of the coping strategy can be better implemented and evaluated.
115	It might be an idea to put a percentage graph on each page so you know how far into the module you are.
116	I enjoyed the audio clips
117	Nothing in particular, however I did find that I needed to sit and focus on this module rather than dipping in and out.
119	n/a
121	I completed it on my phone and it worked fine. I would perhaps maybe some of it can be a bit more interactive rather than just inputting text into a box.
123	n/a

2-week post-intervention: Will you continue to use the techniques? - please explain

102	n/a

103 Helped me to not think about it so much, as soon as thoughts crept in I used some of the techniques to help

104 they are easy to implement

105 n/a

106 They're positive ways for me to cope

108 n/a

109 n/a

110 I think it is a good way to overcome dwelling.

112 n/a

114 n/a

115 Some of the skills I learnt from the module I hadn't tried before. It has changed the way I think about the 'experience' and I am starting to understand that dwelling on it really isn't that helpful. Learning lots of different skills will help as when one skill stops working or isn't working as well then I will have others that I can try.

116 Multiple options were given which i can try individually

117 I hope to be able to embed some of the skills so that the trauma lessens over time

119 I want to try to use the skills especially when not at work as this is when the dwelling and anxiety peaks

121 I will employ them when I feel anxious

123 n/a

2-week post-intervention: What may prevent you from using the techniques?

102 Present mood. Time constraints/location i.e. work

103 Depends where I am. More difficult to use at work.

104 If I am feeling psychotic or delusional I might not recognise that I need to use the techniques. They are helpful when I am aware that dwelling is happening, but less so if I am not fully connected to reality; like being in night terrors or when having hallucinations

105 It's about breaking the cycle, the main block for me is low motivation

106 Negative spiral of thoughts

108 Being overwhelmed by my thoughts

109 Time, forgetting

110 Being in a loud environment, office or supermarket.

112 n/a

114 Overwhelming feeling and unable to apply the techniques. Awareness vanes when anxiety and stress are profound

115 The only thing that would stop me using the skills in the future is me, particularly if I am having a bad day when I can't see the good in anything - this is when it may be difficult for me to recall what I have learnt and put it into practice.

116 Being overwhelmed and getting back into a dwelling mindset

117	Time constraints, often I try to get on with everything too much and don't make time for self-care
119	Lack of time because of type of job I do ...very little time to do them
121	n/a
123	Not needing them

2-week post-intervention: Suggestions for improvement

102	
103	No, all helpful.
104	Personally I found phone call very useful. Adding one more phone call may be very useful
105	The helpful hints were good, but I would add a summary page highlighting all the techniques and where to find them, i.e., page number, from the PDF.
106	None at all, all amazing
108	This was too basic for me - you need to devise different modules for different levels of intellect and understanding and emotional intelligence
109	To make it a habit, but not easy with me.
110	I think it will become easier the more I use it.
112	
114	It would be useful to have a feedback of the mapping of the questionnaires over the period of intervention and relevant progress or otherwise during this period.
115	No - the module is well laid out and easy to read and understand!
116	
117	I think it would be helpful to have the module broken down a bit more into smaller chunks and then a call to review after each 'chapter'.
119	Possibly a Facebook group for people who have been involved in these surveys
121	Nope
123	n/a

2-week post-intervention: Any other feedback?

102	Very clear techniques, good audios on module and good follow up.
103	
104	Fantastic resource. Could be very useful for teenagers who spend a lot of time in their heads.
105	I appreciated the use of including marginalised communities in the training i.e. having a black woman as a client etc. I found it more relatable...also the front line worker too. That was great. Thank you again for putting this together. I wish you all the luck.
106	Everything is perfect as it is, it's helped me a lot especially in regards of other trauma that has happened within the space of the 4 to 6 weeks
108	I appreciate being given the opportunity and have found one thing useful that of giving my demons a different persona to that of myself thereby enabling distance between my thoughts and me as a person - I am not my thoughts!

109	Thank you. Every little helps
110	No
112	
114	It would be useful if this was followed up in three months (or other timescale) to enable assessment of the PTSD over time. Additionally, to express my gratitude and deep thanks to Hjordis for her care, support and compassion throughout this research. Thank you Hjordis - God Bless
115	I think the only thing that I would change about the questionnaires is one of the questions, when it asks "do you dwell on what you could have done differently". As a victim/survivor of childhood abuse this question doesn't really apply and therefore it was difficult to answer as there is nothing that I could have done differently or indeed stopped it from happening. Other than that it was a fantastic module and it has been extremely useful - Thank you!!
116	
117	As above
119	Thanks to all involved setting up the surveys and the support of staff following up with the call and reminders !
121	I really enjoyed the course and I feel it will really help people
123	n/a

Appendix Y: Quotes from Exit Interviews

GENERAL

What made you want to get involved?

- **105: "**I had been stuck in a long rut, I had nothing to lose, and wanted to contribute to research"
- **108:** "Vague hope something could help me. Was not going to interfere with me on the waitlist. Nothing ventured, nothing gained."
- **114:** I was struggling, I had a few sessions with healthy minds (group) and thought I would benefit from the study.
- **117:** "I was struggling more back then, I was looking for more resources to help to cope, to help myself. I also think research important to inform practice and for updating tools. So I was keen to get involved in research and to develop my skills."

What did you hope to get out of taking part in the dwelling intervention?

- **108:** New way of trying to control being overwhelmed and stuck in dwelling.
- **114:** "I didn't understand the scope until we started talking. The study focused mainly on dwelling. For me, it was about a quick win, it was about getting coping mechanisms."
- **117:** "More resources to help to cope, to help myself."

Did you have any concerns that made you hesitant to get involved?

- **105:** "I was concerned about identifiable data, with my job etc."

Was there anything you think could have been done to encourage you/others to get involved?

- **114:** "I would have found it useful to maybe have a voice recording at the top of it [the PIS] similar to how you did in the module. Because that was so helpful in the module. I found it difficult to concentrate on reading. If there had been a recording [of the PIS] then you can play it multiple times and it sinks in. That would be more engaging if can't be asked to read, I can listen to it a couple of times & can understand concepts just more."
- **117:** "No, it was all explained really clearly. It was clear that I can withdraw and about confidentiality."

QUESTIONNAIRES

Was there anything that you found difficult in filling in the questionnaires?

- **105:** "Don't think so. With the trauma questionnaires you said to think of the even I had told you during our first call – but I forgot which one I had picked. There were so many trauma. So I just chose one."
- **108:** "All easy"
- **114:** "For the first 2 questionnaires I was all over the place. I noted all as extremes. After the dwelling module I got sense of pattern of repeatedness of questions. I was more aware of what I'm answering weeks 5-6. How I understood the questionnaires was much more focused during weks 3-5. For me, at the start everything was "awful", I wasn't segmenting them. All questions sounded somewhat similar and yet different. All gobbledygook. When I could process again I realised it wasn't all the same. I don't remember how I answered the weeks before. Would really benefit me to see my scores from before. After dwelling module I could compartmentalise much better. By week 4 had started opening up that filing cabinet."
- **114 cont.** "For me it was PTSD, then stress, then anxiety. For me the lines were totally blurred between PTSD, stress, anxiety, depression. When going through the shit that I was going through. I found that particularly difficult to compartmentalise, what is just PTSD (and answer the questionnaires)."

- **117:** "Not the actually filling them out, that was quite self-explanatory and similar to the previous Healthy Minds group I did 6 weeks before. So it wasn't fully unfamiliar. Personally, the questionnaires made me think about the trauma more. I might not have been in a good place. But when you prompted me… I appreciated the prompts, but then I was like oh now I have to think about it, while I had worked on distracting myself and trying not to think about the trauma. Didn't always want to think about thinking about trauma."

Was there anything that could've been made easier for you here?

- **105:** "I couldn't remember how many minutes I said I'd dwelled last week. I would have found it helpful to have a subjective scale of "do you think you dwelled more or less than last week".
- **114:** I think you're very clear. Consistency would have been helpful. In some questionnaires scores were 1-10, others 1-5. It's confusing, especially when having a lot of cluttering in my head. I felt that level of consistency would really help. I found that kind of complicated.

How did you find accessing the questionnaires online?

- **105:** "Wonderful, easier than normal, didn't have to dig out my ID number from an email, it was really easy. Good to do on the phone."
- **114:** "Easy. Did both phone & computer. Login process was very simple, that you clicked on it and were straight there if put in ID number. The process was seamless."
- **117:** "I was able to access it on laptop and on my phone which was helpful."

MODULE & REVIEW CALL

In general, what did you find helpful during the online rumination intervention and phone call?

- **105: "**In the online module I liked the interaction. Also, the audio recording reading the module was immensely helpful, really useful. If I'm dwelling a lot, I listen to audio books. Often I'm exhausted and can't read. So it was helpful to be able to listen to it. The audio files made the materials more accessible for me.
- **105 continued:** "It was helpful to have participants from diverse communities like me. Have done other therapy things. Normally it's all white women. As a black man I then don't relate to it, it's not my story being told. 100% representation matters. Otherwise it's such a Euro-centric approach. It was great to also have a paramedic and of a marginalised community. The frontline worker intrigued me. Race always gets missed out. There were many women. Maybe LGBTQ could have been included."
- **108:** "Did help me more than I thought it would. In fact, a reminder, was good to go over basics."
- **114:** "The entire conversation was very useful, you were unpicking things that I wouldn't have been able to unpick myself. At one point I was at risk of dropping out. After I did the questionnaire, it took me 2 weeks to start writing again. I'd given up after first few pages of module. [Asked why almost dropped out] Like I said, the questionnaires triggered all these horrible memories I hadn't thought about. It was like opening Pandora's box. Gave up after 5-7 pages. Started having flashbacks, going back into the same place. Couldn't cope with it on a personal level. Started anxiety, palpitation, reliving it. Didn't drop out because of *your* compassion, how *you* were. You had that level of caring sympathy, understanding, that's what put it all across. One of the lessons for the study is that you really need to have qualities, showing empathy to participants. I found that a really useful benefit."
- **117:** "I found it helpful to have the review phone call. We were able to talk more specifically about my case and build upon techniques in the module. You gave different examples that were more relevant to me. I did find the module helpful, but the review call brought it to life, made it more personal and relevant to me, rather than just e-learning, generalised. Having the follow-up call made it more personal and pertinent to me and more relevant to me, more helpful. Most of the techniques I had done before, I had just concluded the 6 week course of

CBT a few years ago (Healthy Minds stabilisation group). Although lots was not new to me, a lot was worded in a way that was different to how it was presented before. It made me try things. I tried everything. Some stuck more than others. Before, I was more reluctant to try everything. Cherry picked before. I think it was helpful, I think it was relevant. The content and each skill was the right sort of length. It was not overly heavy, not like some e-learning. It did all feel relevant."

What tools in the intervention have made the biggest difference in your life?

- **105:** "The coping with nightmares, bringing myself into the present by having lavender to smell and a picture to look at on my nightstand. I just had a nightmare the other day and used it. It helped me get into the present."
- **105 continued:** "And the compassionate imagery. I realised how hash I'm being on myself, and how I speak to myself. Compassion imagery was really really helpful, the biggest thing I got from it myself. It feels strange but I've been practicing it. I hadn't realised how hard I was being on myself."
- **108:** "Naming the dwelling" (Externalising)
- **114:** "All of them had merit. One that jumps to mind 54321 (here and now). That was quite beneficial, something to distract you. Also the Compassion imagery. Ways to break the cycle helpful. Some techniques need too much attention & focus."
- **117:** "The compassionate thinking and talking to myself, giving myself permission to feel, trying to be kind to myself, reminding myself that what I have been though as been life changing. And that it's okay to not be okay. Being okay to sit with this for a little bit. Then thinking: What can I do to make me feel better?
- **117 cont.** "Another thing that I had dismissed before was the senses technique, what I see, hear, smell (grounding). I found that quite helpful. If I don't want to think, I now know how to bring myself down, especially when I panic at the night."

Were there any aspects of your intervention that you <u>didn't</u> find helpful? If so, what were they?

- **105:** "I liked the "helpful hints" summary boxes. A summary sheet with page numbers on the pdf would have been helpful. I now did that for myself e.g. here and now, explanation on page X."
- **108:** "Too simplified, at times patronising. Struggled with visualisation – want alternative to audio, struggled with café scenario. Worry will make people feels worse. Could put in either/or exercise instead of imagining – write it or read it."
- **114:** "With the questionnaires the apprehension I had was just score without getting anywhere for 3 weeks, it remained virtually the same, feeling was the same, no coping mechanism. The coping would enable shift from where they are."
- **117**: "A lot of info in one go. Used to weekly course being max 2 hrs & convo. Lot to take in in one go for me personally. Rather split into 2 separate modules. Split into separate modules, can do in your own time. Done 2-3 at a time. Chance to try out those. Come back and try. For me: new thing every week, drip feed. 2-3 things/week to focus on and test the waters with. Tricky with longer session."

Were there any things that researcher did or said (esp. on the telephone call) that you found particularly helpful?

- **105:** "When you asked about the techniques, I couldn't recall a single technique. Then you reminded me of them. It was also helpful to make IF-THEN plans together and adapt them specifically for my life. I engaged with more the study than probably than probably anything else in my life right now. (I asked why he thinks that is). It was easy to engage, the way the materials were laid out. Easy for me. Not too word heavy. A mixture of things."

- **108:** Just talking in general has helped. Talking helps clarify in my mind. I feel like I'm talking to someone at same level, maybe didn't with previous person (PWP). You quite clearly have a good insight, you don't treat me like I'm text book or tick box exercise. The whole thing has helped. The phone calls in particular. Doesn't matter how much family & friends try, they're not MH professionals. Says way more about them, but knowing I'm talking to someone who gets it & is interested. In past even if not traumatic, gone to see therapists.
- **114:** "Rapport you have between research & participant. I think we had a really strong rapport. We built a bridge."

Did the researcher do or say anything that you <u>didn't</u> find helpful?

- **105:** "Can't think of anything. Maybe doing more IF-THEN plans together, more time for key things, more focus on that, since it's hard to find it myself when I'm so stuck in a pattern. (Also recommended he make IF-THEN plans with his therapist)"
- **108:** "Wouldn't say so."

Did you have any problems in motivating yourself during to apply the intervention tools? What helped you stay motivated?

- **108:** "Own motivation, hope there's be a snippet that could help me. Pragmatic."
- **117:** "Just my personal motivation, my internal drive. I know I don't want to feel like this. I know I can overcome it. I have it in me."

What could we do to improve the of the online intervention or telephone call?

- **114:** "Trying to reflect on how you did it verbally vs how you did it on the questionnaire. Make the module even more human. Give examples. Explain more. Enhance the module the written & voice from personal. The questionnaire was very clinical. The phone call was more humanised, how to use that in module. Can you make the module more personal. Make participant feel it's more useful to me."
- **114 other:** "Maybe a group session could help, bring people together, save yourself time, enable people to see that they're not alone. More collective. Like AA/NA support groups."

<u>Summarised Main Takeaways from Exit Interviews (by Researcher)</u>

- Skills/techniques overall reported as very helpful and useful
- Consider memory difficulties / repetition, reminders, easy way to look up resources
- Consider concentration with PTSD – audio recordings were helpful.
  Other: Prefer to read, struggle to visualise. Solution: Have different options individuals can choose from.
- Importance of representation (ethnicity, sexuality, gender)
- Individual review was helpful, adapting techniques to participants specific situations
- Adjust to individual level. For individuals who had therapy before, may be too simple/easy/patronising.
- Even more clarity in study explanation and set up. Make it even easier for individuals with PTSD to access/understand e.g. audio recording of PIS, repetition of PIS information.
- Difficulty answering questionnaires in separating different levels of emotions and symptoms (e.g. what is PTSD, what is depression) to answer questions. All feels intensive and overwhelming.

- Questionnaires and module triggered PTSD flashbacks/intrusive memories and individuals reported thinking about the trauma more. Found baseline time difficult – reflecting on unchanging symptoms without learning coping.
- Dropout prevented through personal therapeutic relationship
- Most helpful techniques appeared to be spotting/naming dwelling, grounding and compassionate self-talk.

Appendix Z: Journal Guidelines

Journal proposed for the theory driven research project: **Journal of Traumatic Stress**

Scope
Journal of Traumatic Stress is an interdisciplinary forum for the publication of peer-reviewed original papers on biopsychosocial aspects of trauma. Papers focus on theoretical formulations, research, treatment, prevention education/training, and legal and policy concerns. It is the official publication of the International Society for Traumatic Stress Studies (ISTSS).

Article type: **Research Article**
Report of new research findings or conceptual analyses that make a significant contribution to knowledge. 7,500 words, including abstract, references, tables, and figures.

Summary of Manuscript Structure

- Title - A short running title of less than 40 characters;
- A title page - The title page of the manuscript, including: Your co-author details, data availability statement, funding statement, conflict of interest disclosure, ethical standards statement, patient consent statement, permission to reproduce material from other sources, clinical trial registration, Acknowledgments.
- Abstract - A concise and factual abstract with a maximum length of 200 words.
- *Keywords* - Up to seven keywords
- Text - Free format submission for a simplified and streamlined submission process. All required sections should be contained in your manuscript, including abstract, introduction, methods, results, and conclusions. Figures and tables should have legends.
- Main body, formatted as:
    - Method
        - Participants
        - Procedure
        - Measures
        - Data Analysis
    - Results
    - Reference
- References - *Journal of Traumatic Stress* uses APA reference style. However, because *JTS* offers Free Format submission, you do not need to format the references in your article until the revision stage.