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RESEARCH ARTICLE

Enhancing User Empowerment and Agency through Co-Creation of a Nonattachment-Based Post-Traumatic Stress Reduction Intervention

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Introduction: Individuals with post-traumatic stress typically experience feelings of helplessness, which are often exacerbated by current treatment approaches whereby clinicians tend to rely more on personal experiences than case-by-case, evidence-based care.
Aims: This study aimed to address this issue by extending the framework of existing public healthcare interventions to co-create a new nonattachment-based approach in collaboration with end users and clinicians. The practice of nonattachment involves intentionally releasing judgement of or attachment to events, relationships, and the self, while accepting life's changes with openness and compassion.
Methods: This study employed a three-stage co-creation process: 1) evidence review and stakeholder engagement, 2) co-creation of an initial intervention, and 3) prototyping. Twenty participants (17 with experience of post-traumatic stress and three clinicians) contributed to the intervention's development over the three stages through one-to-one meetings and group discussions, which were recorded and analyzed using reflexive thematic analysis. Artificial intelligence was used to generate language featured in the final intervention.
Results: Key themes identified through the thematic analysis were empowerment and agency, the importance of grounding, as well as normalization and validation. Co-creation input from participants focused primarily on the structure and format of the intervention, while input from clinicians focused on feasibility, barriers to adoption, and safety planning. The final intervention took the form of an online program comprised of 8 self-guided modules integrating nonattachment and mindfulness principles, allowing users to control how and when they interact with the content.
Conclusions: To our knowledge, this co-created protocol is the first intervention for post-traumatic stress to be principally grounded in ancient Eastern nonattachment principles. Future studies can now evaluate the intervention to determine its feasibility in post-traumatic stress settings.

Keywords: post-traumatic stress, nonattachment, co-creation, evidence-based practice, shared decision-making

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Introduction

Post-traumatic stress (PTS), whether clinically diagnosed or not, can have a profound and life-altering impact on everyday life and functioning (van der Kolk, 2014). Its wide range of symptoms can include depression, anxiety, physical health deterioration, hypervigilance, problems with attention, hyperarousal, agoraphobia, and many more. According to the Substance Abuse and Mental Health Services Administration (SAMHSA, 2014), the general difference between stress and PTS is that, in PTS, the experience of the event(s) remains vivid and present in one's body and mind. That is, physical and mental trauma remains at the forefront of experience, inhibiting optimal functioning. While many people may encounter extremely traumatic events, not everyone will develop symptoms of PTS. There are several hypotheses that have been proposed to explain this variability, including individual differences in personality, culture, hormones, comorbidities, and neural circuitry. Trauma is somewhat unique in clinical diagnoses in that it requires the occurrence of one or multiple external events (SAMHSA, 2014). The individual's experience of the event(s), in combination with individual differences, likely accounts for the onset of PTS symptoms. Additionally, the external event(s), along with the individual's processing of it, is often accompanied by a sense of intense and often overwhelming helplessness (van der Kolk, 2014). This is posited as the precursor to the frequently reported experience of dissociation: a psychological protective measure whereby the individual mentally escapes from the deeply traumatic experience for an unspecified amount of time (Beutler et al., 2022). This helplessness may be exacerbated in healthcare settings by the process through which symptoms of PTS are addressed (Elwyn et al., 2012).

While clinicians vary in their approaches to trauma interventions, there is research to suggest a gap in evidence-based practices (Etingen et al., 2022; Stewart et al., 2018). Evidence-based practice is a three-pronged approach to clinical care in which practitioners are encouraged to incorporate the following into treatment planning: 1) research and evidence, 2) clinical experience, and 3) patients' preferences (Stewart et al., 2018). However, studies show that in practice, clinicians tend to place the most emphasis on clinical experience, often disregarding the first prong altogether. Furthermore, although there is acknowledgement amongst clinicians of the value of research evidence (Stewart et al., 2018), there remains a tendency to develop diagnoses and treatment plans based mostly on their own unstructured assessments and perceptions (Etingen et al., 2022; Stewart et al., 2018).

The efficacy of pharmacotherapies alone for PTS has not been well demonstrated (Hafid & Kerna, 2019), prompting the development of numerous alternative therapies ranging from traditional psychotherapy, talk therapy, cognitive-behavioral therapy, and exposure therapy to cognitive processing therapy, and many more. Studies have shown that complex trauma may be best treated through a combination of psychopharmacological, cognitive, and somatic treatments (van der Kolk, 2014). Current evidence-based treatments, such as trauma-focused cognitive behavioral therapy and eye movement desensitization and reprocessing, are useful tools in clinical contexts. They are bolstered by strong evidence bases, personalization, responsiveness, and the means to deeply process traumatic events (National Institute for Health and Care Excellence, 2018). However, issues of accessibility and cost can impact how these supports are received. Additionally, experiencing a major life event characterized by intense helplessness or loss of control, followed by the vulnerable process of trauma recovery under the primary direction of a mental health practitioner, may risk compounding those very feelings. Advocates of shared decision-making suggest this risk can be mitigated (Elwyn et al., 2012; Etingen et al., 2022). For example, research indicates that patients engaged in shared decision-making around their treatment planning were highly likely (90%) to report feeling confident about moving forward with the developed plan (Etingen et al., 2022). In some cases, such as limited access to therapy, mild symptoms, relapse prevention, or high-functioning individuals, a more self-directed approach may also be beneficial (Kuester et al., 2016).

Research on mindfulness-based interventions (MBIs) has highlighted mindfulness as a promising area of focus for public health strategies. However, the volume of MBI-based research lags notably behind that of more established or conventional approaches which place less emphasis on resilience-building, that is, engaging the patient or individual in the process (Oman, 2023). Nevertheless, the efficacy of MBIs, such as mindfulness-based stress reduction (MBSR), has shown significant reductions in PTSD symptoms compared with control interventions (Shapira et al., 2022).

Mindfulness research has also identified nonattachment as a significant contributor to improvements in trauma-related variables (Joss et al., 2020), where nonattachment is defined as "a flexible way of relating to one's experiences without clinging to or suppressing them" (Sahdra et al., 2015, p. 263). Nonattachment is considered to be a related but distinct construct from mindfulness, which is supported by findings that mindfulness and non-

attachment do not always yield similar effects on symptom improvement (Joss et al., 2020; Sahdra et al., 2016; Sahdra et al., 2017). However, as with mindfulness, nonattachment faces similar challenges in its application due to the lack of specific, practice-oriented guidelines for its use in trauma treatment (Hafid & Kerna, 2019; Sys et al., 2024; Tremblay et al., 2024; Tremblay & Van Gordon, 2023).

A sense of agency is important in addressing traumatic experiences (Elwyn et al., 2012), as a profound sense of helplessness is commonly reported as part of trauma, usually as a function of a significant loss of control (Salcioglu et al., 2017). Nonattachment may therefore be a useful avenue of therapeutic exploration as it is characterized by an absence of attempts to control (Whitehead et al., 2018). Nonattachment involves experiencing life as it is and releasing the need for experiences, thoughts, and sensations to be otherwise (Tremblay et al., 2024). Cultivating nonattachment also encourages a more flexible relationship with reality, which may be particularly relevant for those suffering from common PTS symptoms such as hypervigilance, fear response, and anxiety (van der Kolk, 2014).

Nonattachment is associated with a wide range of positive psychological outcomes, including mediating the effects of mindfulness on subjective well-being (Whitehead et al., 2018) and pain reduction (Van Gordon et al., 2017); improvements in wisdom, self-actualization, and self-transcendence (Whitehead et al., 2020); and reductions in insecurity, which can help address issues such as materialism (Elphinstone & Whitehead, 2019). Nonattachment has been positively associated with flourishing (Tsoi et al., 2022), mental well-being (in the form of reduced attachment to self; Barrows et al., 2024), resilience (Feliu-Soler et al., 2016), and life satisfaction (Wang et al., 2016), as well as self-compassion, self-acceptance, and self-esteem (Sahdra et al., 2010; Sahdra et al., 2015). It has also been negatively correlated with suicidal ideation (Lamis & Dvorak, 2014) in addition to various forms of psychological distress, including depression, stress, and anxiety (Bhambhani & Cabral, 2015; Chio et al., 2018; Feliu-Soler et al., 2016; Ho et al., 2022). Nonattachment may also serve as a pathway toward "ideal mentalities": mental states that have not yet been achieved but are considered valuable and worthy of pursuit within the broader context of alleviating suffering. Ideal mentalities are a feature of second-generation MBIs (Van Gordon & Shonin, 2020), which not only teach meditation skills but also seek to harness spirituality and wider ethical and wisdom-based aspects of MBIs in daily life (Zhou et al., 2023). However, despite the benefits associated with the practice of nonattachment, no research to date has focused specifically on cultivating nonattachment for the treatment of PTS symptoms, or in applied settings more generally.

Given the value of agency in treatment planning, it is important to consider patient-driven approaches to treatment planning and progress. While patients may not be able to actively cultivate responses to pharmacotherapies, they may be able to take a more active role in both deciding how they engage with an intervention and shaping the areas of focus upon which an intervention is based. Involving potential end users in the development of an intervention may increase the likelihood of adoption and sustainable change (Green et al., 1996). The process of co-creation as a participatory methodology has been successfully utilized in a variety of healthcare contexts and is a promising method to support other complex healthcare needs (Chen et al., 2021; Leask et al., 2017; Schuling et al., 2018). The ensuing challenge lies in creating an environment in which a patient can participate in shared decision-making around treatment decisions, guided by an area of focus which has either demonstrated efficacy for treating symptoms of PTS or shows promise in that regard.

Acknowledging the gap in evidence-based practice and the challenges surrounding the practical application of shared decision-making, this study was designed to involve stakeholders, including individuals with lived experience of PTS, in the development of a novel intervention based on the principles of nonattachment. In doing so, the present study aimed to develop a guide for cultivating nonattachment, which would be the first of its kind in Western applied settings. To achieve this, a co-creation approach was adopted to develop solutions that align directly with the goals of end users and potentially foster ownership in the intervention itself. Co-creation refers to the collaborative process of working together with stakeholders, namely representatives of the intended end-user demographic, to develop new solutions (Leask et al., 2019). This is a departure from the traditional approaches to solution development, which typically involve researcher-led idea generation followed by user testing, and has shown promise in other mindfulness-based intervention contexts (Schuling et al., 2018). Using co-creation can facilitate a more holistic understanding of the challenges faced by people experiencing symptoms of PTS, including the administrative and logistical barriers to accessing and navigating the various healthcare solutions offered to treat them, as well as the uncertainty surrounding the efficacy of current intervention options. While co-creation does not prescribe a fixed methodology per se, it allows for the methodological approach to be informed by a theoretical framework that underpins the desired or appropriate processes and target outcomes (Leask et al., 2019).

An approach that aligns well with co-creation, which was developed to support collaboration between researchers and intervention stakeholders, is Transdisciplinary Action Research (TDAR; Stokols, 2006), which was later expanded and refined to specifically account for intervention recipients as well as intervention providers (Hawkins et al., 2017). Harnessing the expertise of intervention providers offers a more comprehensive assessment of the acceptability and feasibility of an intervention during the development stage (Bartholomew et al., 2016; Hawkins et al., 2017; Stokols, 2006). TDAR entails the inclusion of stakeholders and intended beneficiaries to better understand relevant issues and work collaboratively to identify practical solutions, such as through co-creating new public health interventions (Hawkins et al., 2017). It also emphasizes the need for clear and *equitable* collaboration in the pursuit of collective goals and outcomes (Stokols, 2006). Equitable collaboration goes beyond community consultation, where power imbalances often exist between researchers and participants. In contrast, TDAR is grounded in principles of participant empowerment and equitable collaboration, making it an appropriate methodological framework for the current study. In addition to the core principles of TDAR, this qualitative study draws on insights from two existing co-produced public health interventions that further refine these principles: 1. ASSIST - a school-based and peer-led intervention shown to effectively reduce the uptake of smoking in UK secondary schools (Campbell et al., 2008). 2. +Frank and Frank Friends - informal drug prevention interventions designed as adjuncts to ASSIST (Hawkins et al., 2017). The underlying research question guiding the present study was as follows: What features and content are important and feasible (i.e., relevant to the intervention's ultimate implementation and adoption) in the co-creation of a nonattachment-based intervention for PTS?

Methods

A multi-stage, multi-method framework was employed whereby participants were recruited and screened prior to participating in three stages of co-creation, during which the program's development was informed by their lived experience. The process followed the checklist of key components for co-creation and the production of a minimum viable product (MVP) prototype based on the principles of TDAR (see Hawkins et al., 2017). These stages were: 1. Evidence review in consultation with stakeholders, 2. Co-creation, and 3. Prototyping. Key stakeholders were defined as potential end users with lived experience of PTS and potential intervention providers (PIPs) in the form of practicing clinicians.

Setting and Participants

The research followed the guidelines of the British Psychological Society's code of ethics (2018) and was approved by the Research Ethics Committee of the authors' institution, based in the East Midlands (UK). Recruitment took place via social media platforms, including Reddit and Facebook, as well as charitable or independent support organizations related to PTS. Ultimately, participants were primarily recruited via PTSD UK on Facebook. A total of 130 participants completed the pre-screening survey designed to assess eligibility. Potential candidates who were currently in treatment for PTS symptoms, non-English-speaking, under 18 years of age, and diagnosed with a psychotic disorder were excluded from the research. Inclusion criteria required that participants had received a diagnosis of PTSD/C-PTSD or self-identified as experiencing related symptoms (i.e., a clinical diagnosis was not necessary). This was assessed through a Qualtrics-based pre-screening survey that asked whether participants currently experienced symptoms of PTS, which was defined to include symptoms such as chronic stress, extreme irritability, hypervigilance, emotional numbing, and avoidance. Respondents who endorsed these symptoms were deemed eligible for participation. Of the initial 130 pre-screened respondents, 88 did not reply when contacted for Stage 1 participation, 10 scheduled meetings for Stage 1 but subsequently withdrew, 11 declined to proceed beyond the initial pre-screen, and 4 were unable to participate within the timeframe of the study. Thus, a total of 17 participants participated in the subsequent co-creation stage(s). During Stage 2, three licensed and practicing clinicians experienced in implementation of PTS interventions contributed to the design of the MVP, focusing on feasibility, usability, effectiveness, and potential barriers to adoption. Demographics of the 20 participants (17 with lived PTS experience and three clinicians) are detailed in Table 1. Of these, 80% (n = 16) had a formal diagnosis, 75% (n = 15) were female, and the median age bracket was 35–44 years. In accordance with the General Data Protection Regulation (GDPR), only essential data for the study were collected, including at the pre-screening stage. Therefore, data related to ethnicity and socioeconomic status were not collected. All data collection and participant meetings were conducted online using Qualtrics, Microsoft Teams, or Outlook to help ensure successful participant recruitment and engagement as well as data security.

Table 1. Participant Demographics

Participant No.	Participant Type 1 or 2*	Formal PTSD/C-PTSD diagnosis?	Age Bracket	Sex M/F/X	Level of Education
1	1	Y	35–44	M	High school or equivalent
2	1	Y	45–54	F	Some college, no degree
3	1	Y	35–44	F	Bachelor's degree
4	1	Y	35–44	M	Some college, no degree
5	1	Y	55–64	F	Bachelor's degree
6	1	Y	45–54	M	Master's degree
7	1	Y	35–44	F	Master's degree
8	1	Y	45–54	F	Associate degree
9	1	Y	45–54	X	Some college, no degree
10	1	N	35–44	F	Bachelor's degree
11	1	Y	35–44	F	Bachelor's degree
12	1	Y	25–34	F	Master's degree
13	1	Y	35–44	F	Bachelor's degree
14	1	Y	35–44	F	Associate degree
15	1	Y	35–44	M	Master's degree
16	1	Y	35–44	F	Master's degree
17	1	Y	45–54	F	Some college, no degree
18	2	N	35–44	F	Master's degree
19	2	N	35–44	F	Master's degree
20	2	N	35–44	F	Master's degree

* 1 = Individual with lived experience of PTS, 2 = Clinician.

Procedure

The methods used to generate the intervention are described in three stages below.

Stage 1: Evidence Review and Stakeholder Consultation

Stage 1 entailed a one-to-one, hour-long meeting with the primary researcher to familiarize participants with the concept of co-creation and the principles of nonattachment. The discussion in Stage 1 was led as much as possible by the participant, focusing on their experiences with previous PTS interventions and their thoughts on nonattachment as a concept. This included gathering participants' initial thoughts and experiences related to trauma interventions, including what had been positive or negative as well as what they perceived as areas in need of improvement. With participants' consent, the researcher transcribed the meetings for later data extraction and integration, and also took detailed notes on discussions. A prompt sheet was used to frame discussions if participants veered off track, though this was rare. Examples of such prompts included the following: "Should all information exchange be verbal, written, or a hybrid?"; "Should there be a request for feedback at the end of each session or block?"; "Does each session have a facilitator and a 'client' role, or is there an alternative to this?"; and "What do you see as external or internal barriers to self-acceptance?". Understanding that participants were unlikely to be well-versed with Eastern contemplative concepts such as nonattachment and mindfulness, the researcher focused primarily on eliciting input related to participants' experiences with previous interventions and PTS symptoms. However, as nonattachment was the central theme of the intended output, participants were introduced at the earliest possible stage to the definition of nonattachment used in the study, which was provided in the participant invitation form as follows:

> This particular intervention will be based on principles of nonattachment, which is a balanced and flexible way of existing in the world such that someone with a nonattached attitude can be deeply present and encounter ups and downs without a need to control or fix things. They can simply allow them to be. The concept of nonattachment may be relevant to trauma because so often people who have experienced traumatic events can connect those events with control being taken from them, and their world being altered from what it should have been. Nonattachment cannot change the events, but it may be able to modify how we respond to them.

Participants were also given additional information and resources for self-directed discovery related to nonattachment in the participant information form. This facilitated meaningful discussion across all stages of the study regarding how attractive or useful the participants found the concept of nonattachment. In addition, it ensured that participants had a clear understanding of the concept, which was a critical and foundational step in developing a nonattachment-based intervention.

Following Stage 1, participant data was compiled and thematically analyzed to generate a summary of emergent themes related to the design of the MVP. This was then presented to the participants in Stage 2 for validation and further discussion.

Stage 2: Initial Co-Creation

Stage 2 involved gathering participant feedback on a working draft of the intervention. This entailed a one-to-one, hour-long meeting with the primary researcher, during which priorities, ideas, problems to be addressed, and proposed intervention elements were discussed. This began with a researcher-led presentation outlining a proposed framework based on the input received from the participants in Stage 1. Having underscored the importance of participant-led collaboration and co-creation principles, participants were then requested to provide feedback. Specifically, they were presented with an outline of the program, which included a welcome page summarizing the intervention, followed by an introduction detailing the program structure as well as the roles of the user and clinician. A sample of an outlined area of focus (subsequently renamed "module") was also presented for participants to review and reflect on. Feedback was provided on various aspects, including the areas of focus, language used, the flow of the overall program along with its individual units, strategies for facilitating learning among those with symptoms of PTS, and the program platform.

In addition, PIPs (clinicians), were solicited for feedback related to the intervention design to facilitate future adoption and implementation. PIPs were emailed a copy of the MVP outline and asked to provide input. Following the integration of this feedback, participants were emailed an updated version of the draft outline, allowing them time to reflect and offer additional input, which was provided by eight participants.

Stage 3: Prototyping

Stage 3 involved hour-long collaborative sessions with sub-groups of participants. The researcher organized these forums and provided prompts for group discussion. Prompts included asking each participant to summarize their own understanding of the co-creation process, the nonattachment-based intervention developed, and any additional suggestions for how the intervention might be improved. Smaller sub-groups were used to permit more time and space for participants to contribute. The researcher began by framing the session with a final reiteration of the principles of co-creation and the importance of participant-led thinking and idea generation. Each participant was then prompted to summarize their reflections on the process, intervention, and any suggestions for improvement to the group. This was followed by a participant-led group discussion discussing the merits and drawbacks of the MVP as presented in Stage 2. Content and format refinements were displayed on screen while they conversed. The researcher's role was to transcribe the conversation and take notes on any additional ideas, considerations, or concerns raised by the co-creators.

Following Stage 3, a more complete version of the proposed intervention, which became known as Nonattachment for Post-Traumatic Stress (NPTS), was developed. Participants were thanked for their time and participation, and were informed that they would receive a copy of the final pilot version for member-checking.

Data Analysis

A fundamental component of the TDAR approach is the development of sustainable and replicable processes that support effective collaboration between stakeholders to capture as much latent expertise as possible, ensuring that the acceptability and feasibility of the output are considered and maximized at the development phase (Hawkins et al., 2017). Acknowledging this, the primary researcher facilitated all participant interactions, which led to consistent and contextualized data collection. Participant input was recorded and transcribed verbatim using Microsoft Teams, then analyzed thematically to ensure that the data collected during each iteration of the MVP was representative of the sample. Reflexive thematic analysis (Braun & Clarke, 2021) was used to interpret the data and identify latent content through six steps: 1) familiarization with the data, 2) generation of initial

codes, 3) searching for themes, 4) reviewing themes, 5) defining and naming themes, and 6) producing the report (Braun & Clarke, 2006). This required analytic sensibility (Braun & Clarke, 2021), through which insights beyond surface-level content were generated and connections to existing theory and wider contexts were identified. Where discrepancies or contradictions emerged, the researcher presented these issues back to the participants, asking them to rank outcomes by preferences. The option receiving the highest number of votes was accepted. For example, one participant challenged the use of the term "safety" in safety planning and offered "action" as a preferable alternative. The researcher shared this with the other participants in Stage 3, and a vote was taken on whether they preferred the term "safety", preferred the term "action", or were indifferent, with terminology adjusted accordingly.

Reflexivity

Data were interpreted through the primary researcher's knowledge of the wider context of the subject matter and the aims of the research. This allowed for the consideration of relevant research and theory to add theoretical depth to the analysis. The researcher is a clinical therapist with experience in working with individuals diagnosed with PTSD, C-PTSD, and sub-clinical trauma. The researcher is also a certified yoga and meditation teacher with a professional interest in mindfulness principles and MBIs. Although there is no singular or objectively correct interpretation of the data, the socially constructed, semantic, and critically analytic approach adopted in this study does not reduce the data to underlying causes nor impose theoretical formulations onto the findings (Willig & Rogers, 2017). When prompted to consider their own experiences, biases, and epistemologies in relation to the study, participants were generally positive about their involvement, characterizing it as an opportunity to "give back" or share the value of their difficult experiences. Additionally, due to the iterative format of the study design, participants were able to receive, review, and influence data at multiple points throughout the process.

Results

This section presents the outputs from the three stages of the study, which were iterative and cumulative, along with a summarized table of results for each stage.

Stage 1: Evidence Review and Stakeholder Consultation

Post-hoc analysis of Stage 1 data yielded themes reflecting participants' intervention priorities, which emerged as a "wish list" of factors to be considered and addressed in subsequent stages. These included: 1) empowerment and agency, 2) the importance of grounding, and 3) normalization and validation.

Empowerment and Agency

While some participants, such as P4, explicitly stated that "empowerment is just so important" in the context of intervention dynamics, others described previous intervention experiences in which they felt led in a direction that they did not want to go. P5 stated: "My second counsellor almost wanted me to follow her track despite my lack of desire to do so." P15 positioned empowerment in the context of vulnerability, stating: "…healing work requires extreme vulnerability, anything to mitigate this is positive." These statements reflect the connection participants made between their own experiences of helplessness and a sincere desire to re-establish self-confidence through an intervention that could reconnect them with a sense of empowerment and agency.

The Importance of Grounding

Participants expressed an awareness of how their symptoms had served as distractions or obstacles in previous interventions. P6 emphasized the importance of grounding as an essential prerequisite for engagement: "When you're in the eye of the storm, interventions are a negative…I knew I was ready because there was a window or pause in the storm." In reference to previous interventions she had undergone, P6 added that "The efficacy was a function of my readiness."

P8 described the importance of grounding in terms of specific methods she had used and found helpful: "The Calm app helped with night terrors, meditations and breathing exercises helped, just grounding, and noticing,

like I'll spray a scent. It just gives me confidence. I even carry a kit with a stone and a scented hand cream, or I'll do the rainbow exercise and look for colours."

All participants seemed to understand the importance of being aware of the impact of their symptoms and of intentionally guiding themselves into a receptive state to support improved outcomes.

Normalization and Validation

Without exception, all participants spoke to the need for an intervention that normalizes and validates PTS. Participants noted feelings and experiences of shame, negativity, isolation, and their accompanying vulnerability. Participants followed up by discussing various ways to convey the criticality of an intervention throughout which foundational elements of normalization and validation are woven.

Reflecting on past intervention experiences, P10 stated that "I never liked feeling pathologized." Similarly, P13 remarked that "I needed someone to say something that would help. No one had told me it wasn't my fault, and I had needed so badly to hear that." In these examples, participants recounted experiences in which normalization and validation would have been meaningful. In contrast, P12 described receiving validation in a previous intervention and framed it as his first moment of relief following traumatic exposure: "My initial relief was validation when my therapist explained what was happening to me."

Several participants also addressed the misconception that PTSD is exclusive to military veterans, noting that this belief further contributed to their own experiences of shame. P17 expressed this sentiment, stating that "I think we need more education generally that PTSD is not just for the military. There's a social stigma to it, even in healthcare settings, people don't know how to be aware or engaged with this." This perception of persistent misconception of PTS symptoms and the associated social stigma was viewed as something that could be made navigable through a focus on normalization and validation.

Stage 1 also provided participants with the opportunity to reflect on factors related to the structure and format of the intervention. Participants shared thoughts on considerations such as duration, cadence, modality (online or in-person), disposition toward psychoeducation, methods for identifying self-biases, and more. Stage 1 data indicated a strong preference for self-paced structure, one not bound by the schedule or availability of a therapist or facilitator. Participants also emphasized the importance of digestibility, expressing a desire for information to be available in "bite-sized" segments. The reflection and/or feedback discussed after every session or block was positively received, with participants noting that that such feedback could be directed internally as well as externally. The idea of safety/action planning was mentioned, along with the need to ground or self-regulate prior to engaging with the intervention. Mixed sentiments were expressed regarding independently-led versus professionally-led formats, as well as the appropriate timing of a self-paced intervention (i.e., before, during, after, or in lieu of therapy). There were also mixed sentiments regarding the format of delivery: some favored a tangible, paper-based workbook while others preferred a digital platform. Ultimately, the participants voted to proceed with an online format, possibly due to the average age of the participants (44). There was consensus across all participants that there is no one-size-fits-all solution, and that different stages of trauma exist and must be accounted for. This insight led to the decision to introduce a pre-screening into the final version of the intervention to encourage potential users to reflect on their own readiness to engage in an online program aimed at addressing their symptoms. The main findings from Stage 1 are summarized in Table 2 below.

Table 2. Main Findings From Stage 1

Data Source	Co-creation Stage 1, PIPs.
Objective	Participants' experiences and insight into existing interventions and areas in need of improvement.
Stakeholders	Participants meeting pre-screening criteria.
Results	Themes of empowerment/agency, the need for grounding, and normalization and validation. Data for intervention structure and initial responses to how an intervention rooted in principles of nonattachment could be received. The critical factor of identifying an appropriate user base was highlighted, along with the importance of control and normalization. The idea of a 'choose your own adventure' format was presented.

Stage 2: Initial Co-Creation

The objective of Stage 2 was to take data from Stage 1 and co-create an initial response representative of this data to present back to stakeholders. Additionally, feasibility, usability, and data related to barriers to adoption were solicited from PIPs to be incorporated into the initial MVP and presented back to participants in Stage 3.

Participants indicated that although they were interested in a sort of "band-aid" solution to bridge the gap between referral and intake, they stated that they might not feel confident engaging in a trauma intervention without at least a small amount of initial support. This idea was conveyed by P2: "If I'm left to my own devices, I may not do it at all, but I probably won't have confidence in if I'm doing it right."

Additionally, participants did not want to use valuable "in-person" therapy time on a course they could eventually undertake themselves. They also did not want to be discharged from therapy and then receive access to the course as a follow-up without some context or initial support. In response to this, the researcher proposed a hybrid model of user engagement, whereby users could not access the program without the support of a professional healthcare provider (e.g., therapist, counsellor, community care nurse, etc.). The purpose of this was three-fold: 1) to act as an initial pre-screening measure for program/user suitability, 2) to provide the user with at least one module (ideally 2–3) undertaken with a facilitator to help normalize and support adoption of the remainder of the program, and 3) to support the theme of normalization and validation. This theme was reinforced in Stage 2 through discussions on the role of the PIP and how they could be most supportive. For example, P8 shared that "I would feel more vulnerable to begin with if there wasn't a "grown up" in the room to help remind me this is real and this is normal." This is supported by existing research highlighting the importance of recognizing that suffering is part of the human condition (Gilbert, 2011). Helping individuals understand trauma responses as natural, and shared by many, can mitigate feelings of isolation and enhance the sense of being understood.

Data collected directly from PIPs focused primarily on safety and ethical considerations, as well as experiences of administering trauma interventions in clinical contexts. A suggestion was put forward to modify the order of flow within the intervention by moving action planning to the very beginning as a way of partially screening out users who may not be the right fit for the program. Participants rejected this modification, characterizing it as "too soon". PIPs agreed on the importance of the grounding theme as a valuable precursor to any self-reflection, psychoeducation, or mindfulness-based practice. They also emphasized the need for a clinician's guide, along with visual aids and additional resources available either upon request or by default at the end of each module for further user exploration. Participants fully agreed with these suggestions. The main findings from Stage 2 are summarized in Table 3 below.

Table 3. Main Findings From Stage 2

Data Source	Co-creation Stage 2.
Objective	Participant responses to their data from Stage 1 are summarized and presented back to them.
Stakeholders	Participants from Stage 1 and PIPs.
Results	Themes from Stage 1 were reinforced; the "choose your own adventure" format was refined, which sought to emphasize elements of empowerment, normalization, and integration toward purpose. The importance of grounding prior to engaging with content was highlighted. Data on intervention structure refinement, use of language, content within modules, appropriate timing, and context of delivery, as well as a reiteration of the need to pre-screen users so as not to waste time or resources and to prevent discouraging users from seeking alternative or additional support if needed.

Stage 3: Prototyping

The objective of Stage 3 was to extract data in a more communal or collaborative context through small group dialogue regarding the MVP created and the co-creation process itself. Stage 3 data led to refinements in language, areas of focus, and the flow of user experience within the intervention format. Participants agreed that moving action planning to an earlier stage, either in the form of a workbook or online platform, would be more beneficial. They also agreed on the need to "screen out" users who were unlikely to benefit from the program early on. Participants also agreed that the elements of control and empowerment present in the "choose your own adventure" component of the program were critical in facilitating a sense of shared decision-making and influence. As P10 stated, "The non-linear part feels like empowerment, it's different, but it feels a bit safer." Furthermore, partici-

pants advocated for the inclusion of a family/support guide, as well as a clinician's guide for modules initially undertaken with the support of a healthcare professional.

Participants spoke freely with one another, and all but one opted to turn their camera on (understanding that this was not mandatory nor necessary), which fostered an open flow of dialogue and exchange of ideas. Outputs included the suggestion to offer both paper and online versions of the intervention, with P9 stating that "I may be less honest in an app versus a paper workbook," which is consistent with the noted need for normalization and the fear of stigma associated with PTS. Additional outputs included continued emphasis on empowerment and confidence-building, as well as the suggestion of a reflection journal to support contemplation, pattern recognition, and the identification of future steps. These findings are summarized in Table 4 below.

Table 4. Main Findings From Stage 3

Data Source	Co-creation Stage 3.
Objective	Garner data from dialogue and idea exchange between participants as well as summaries from participants regarding the co-creation process and their understanding of the intervention created.
Stakeholders	Participants from Stage 2 (excluding PIPs).
Results	Themes of agency/empowerment and normalization/validation were emphasized in this stage. Modified intervention workflow; modified areas of focus for module; further language refinement; suggestions for a modified reflection space; the need for continued emphasis on user empowerment and validation for building confidence.

Intervention Prototype

Insights gained from the three stages of co-creation facilitated the development of a nonattachment-based intervention for PTS. Important elements contributed by co-creators primarily focused on the structure and format of the intervention and were informed by their lived experience with PTS symptoms and prior interventions. Important elements contributed by PIPs were primarily focused on safety, barriers to adoption, and clinician training. The flow, general feel, language, and several other key considerations are reflected in the final intervention prototype**,** which underwent three rounds of member-checking through the co-creation process (i.e., Stage 2, Stage 3, and a final post-hoc check via email).

Nonattachment-based content, which constitutes the focus of the intervention (as distinct from its structure or delivery format) was informed by academic and clinical practice literature on nonattachment and mindfulness, along with linguistic modifications suggested by co-creators and generated using artificial intelligence (AI). This required a blend of clinical-experiential and research-based awareness to determine how content areas could be effectively targeted and was member-checked to account for patients' preferences, as recommended in the evidence-based practice approach (Stewart et al., 2018). Areas of focus (modules) related to nonattachment and mindfulness that comprised the final "curriculum" of content included the following:

1. Compassion and self-compassion
2. Judgement and non-judgement
3. Interconnectedness
4. Nonattachment to self
5. Mindful acceptance
6. Letting go
7. Stress and reactivity
8. Embodiment

Using the co-created template, the researcher employed AI to extract "bite-sized" or digestible language related to each area of focus. The resulting document delivered a "choose your own adventure"-style guide for the mindful cultivation of nonattachment comprised of grounding, psychoeducation, a user preparation/reflection workspace, and two exercises targeting the focus of each module.

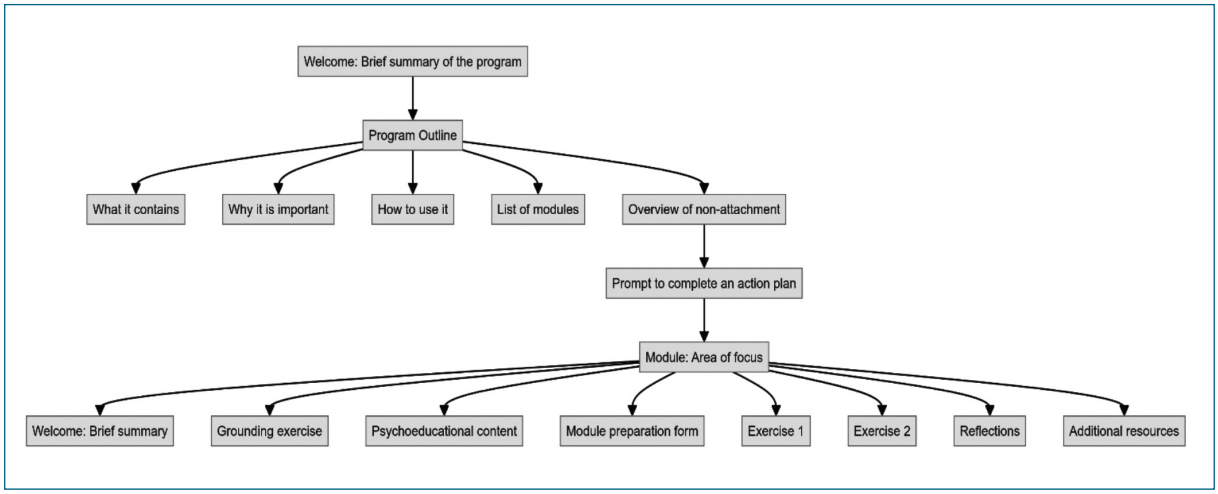
For example, in the compassion and self-compassion module, users are provided two different exercises developed based on existing research in compassion-focused therapy and targeting the cultivation of compassion and self-compassion. The exercises in this module include a self-compassion letter and a metta meditation. However, exercises vary based on the module topic. In the judgement and non-judgement module, exercises are drawn from dialectical behavioral therapy in the form of a sound observation exercise and from mindfulness-based cognitive therapy (MBCT) in the form of a mindful eating exercise. In the nonattachment-to-self module, exercises include

a decentering exercise from MBCT and a cognitive defusion exercise from acceptance and commitment therapy. Potential exercises were selected based on their alignment with nonattachment as defined in its affirmative context as something that can be practiced (verb state) as opposed to something less attainable (noun state). This is consistent with Tremblay et al.'s (2024) framing of nonattachment as involving intentional practices of acceptance, letting go, deep presence, openness to a universally interconnected self-schema, and perceptual distancing from stimuli and response.

An overall program workflow is represented in Figure 1, showing the flow of the user interface, which commences with a brief welcome, followed by an outline of the NPTS program and a brief overview of nonattachment. This is followed by a prompt to complete an action plan, which is positioned as an iterative or living document that users can update as they wish. The eight modules that follow use an identical delivery format, which co-creators indicated was important for managing expectations regarding time, structure, and layout. Users can select the module they find most desirable and proceed at their own pace, engaging with the content, exercises, and reflections as deeply as they choose. The exercises were not created from scratch but were informed by existing evidence-based therapeutic modalities bearing functional overlap with mindful nonattachment and are known to target specific elements of PTS (Tremblay et al., 2024). For example, within the compassion and self-compassion module, an exercise from compassion-focused therapy designed to target the inner critic is included. Here, participants are invited to write a letter to themselves using the following prompt:

> Self-Compassion Letter: Write a letter to yourself from the perspective of a compassionate and understanding friend. Imagine what a supportive friend might say to you in times of difficulty or self-doubt. Offer yourself words of encouragement, kindness, and understanding, acknowledging your struggles, and affirming your inherent worth and value.

Figure 1. Program Workflow



Discussion

This study reported the development of a co-created, nonattachment-based intervention for PTS. The three-stage approach follows the framework of Hawkins et al. (2017) for co-producing and prototyping public health interventions prior to formal piloting and extends current guidance by offering a template for future data collection and analysis to improve the design of interventions employing mindfulness principles. While traditional first-line treatments for PTS have been shown to reduce symptoms, many patients continue to experience residual effects (Szoke et al., 2024). This highlights the need to consider not only the efficacy of conventional methods but also the potential value of a multi-phased, multi-modal approach to PTS symptom management, a key design feature of the present co-creation study.

There are notable distinctions between "simple" PTSD (typically a product of a single-event trauma, with core symptoms including hyperarousal, re-experiencing, and avoidance) and complex PTSD, which typically results

from prolonged or repetitive trauma and *also* includes affect dysregulation, negative self-concept, and interpersonal difficulties (Cloitre et al., 2014). Due to significant overlap in symptoms, several evidence-based treatments can be used for both diagnoses (Cloitre et al., 2014). However, complex trauma may additionally require areas of focus dedicated to shame and self-blame, interpersonal effectiveness, emotional regulation, and identity development. The findings of the present study yielded themes that appear to relate directly to these elements through empowerment and agency, grounding, and normalization and validation, which are discussed in the context of wider research below.

Themes

The theme of empowerment and agency is well supported by research on shared decision-making (Etingen et al., 2022) and evidence-based practice (Stewart et al., 2018). These approaches advocate for the idea that when patients feel they have an active voice in treatment planning (i.e., empowerment and agency, especially in PTS contexts), they are more likely to feel confident about moving forward (Etingen et al., 2022). This aligns with research indicating the value of agency in addressing traumatic experiences (Elwyn et al., 2012). Additionally, the flaws and risks of relying solely on clinician experience are well documented (see Lilienfeld et al., 2013). Participants consistently spoke about the feelings associated with the loss of control and the need for an intervention that could help them regain a sense of confidence in themselves and their own decision-making. This is consistent with existing research on flourishing, which is positively associated with nonattachment (Tsoi et al., 2022).

Participants reported an awareness that their symptoms had prevented them from fully engaging with prior treatments, highlighting the importance of grounding as a central theme. PTS symptoms, where the traumatic event(s) can still feel present, have been shown to occasionally trigger the neural circuitry responsible for onset of the fight-or-flight response, (amygdala activation) which can impair access to executive function and learning (Bremner et al., 1997; Fani et al., 2019; Harnett et al., 2020). Some interventions address this challenge (e.g., dialectical behavioral therapy begins by targeting life-threatening behaviors and working to achieve behavioral stability), but most do not do so explicitly. This is important because without participant understanding, agreement, and input, the efficacy of a multi-modal approach, such as stabilization or grounding prior to engaging with intervention content, may be reduced (Bowens & Cooper, 2012; Etingen et al, 2022). This is consistent with research showing the advantages of MBIs over somatic interventions such as progressive muscle relaxation for improving physiological and psychological variables (Krick & Felfe, 2024). Therefore, the explicitly (and frequently) stated importance of grounding emerged as a key and central theme.

The theme of normalization and validation is supported by research indicating a strong sense of shame commonly associated with PTS symptoms (Cunningham, 2020; Plante et al., 2022). External shame arises from cultural norms, standards, and expectations (Plante et al., 2022) and exists as a function of our own perception that we are creating negative emotions (e.g., disgust or anger) in the minds of others (Gilbert, 2011). Therefore, PTS symptoms can be extremely isolating, as individuals endure the painful experience of feeling abnormal. Internal shame, on the other hand, stems from perceived evaluations of the self as somehow inadequate (Plante et al., 2022), which can be deeply invalidating. Described by Gilbert (2011) as "the dark mirror within" (p. 328), internal shame can generate feelings of contempt, anger, disgust, or disappointment toward the self. It is therefore understandable that participants would emphasize the need for measures to mitigate such feelings and experiences.

Practical Outputs

In the current study, using co-creation as a vehicle for patient-led research on how individuals with PTS might best receive treatment using nonattachment principles yielded data consistent with existing interventions that utilize a more self-directed approach, such as internet-delivered cognitive behavioral therapy (Paiva et al., 2024). The areas of focus, or modules, were co-created with evidence-based practice in mind and resulted in a curriculum of nonattachment-based elements known to be accessible through the exercises built into each module. For example, in the mindful acceptance module, co-creation yielded a visualization exercise drawn from acceptance and commitment therapy, supported by research underscoring the importance of MBIs that employ creative and intrinsically-motivated guided visualizations (Diamond, 2024).

Additionally, the "choose your own adventure" model generated through this process is supported by research demonstrating the value of shared decision-making. Users can control whether they engage with the program through primary screening in a therapeutic context, whereby the program can be offered and then accepted or

rejected. Furthermore, the secondary screening at the very beginning of the program, in which users are evaluated based on their potential to benefit from engagement, can help users discern whether the nonattachment intervention is a good fit for them. Users can also decide how and when they wish to interact with the modules. Through the module preparation workspace, they maintain full control over the depth and nature of their engagement with the content, including meditative visualization exercises.

A pragmatic approach to reporting the development of this intervention facilitated an explanation of the steps involved in co-creation, the roles of stakeholders, and the objectives and results of each stage of the process. The result is the first evidence-based guide for the cultivation of nonattachment in Western applied settings, which could be modified to target almost any user base through the co-creation steps described herein. For example, this process could provide a pathway to pilot an intervention for anxiety by cultivating the benefits of breathwork (Banushi et al., 2023), or for depression by cultivating the benefits of yoga (Wu et al., 2023).

The addition of PIP input, as described by previous studies using co-creation approaches (e.g., Hawkins et al., 2017), adds value through its potential to mitigate implementation barriers, having been assessed by representatives of the target provider demographic in Stage 2. The knowledge and experience of these practitioners can help maximize adoption by PIPs themselves, in addition to supporting appropriate end-users in adopting the program. Lastly, the involvement of the target user demographic in a co-creation capacity helped to ensure a more holistic and complete understanding of the important elements involved in using non-attachment for PTS. Due to the participants' experience with previous interventions, it was possible to gather end-user insights into the usability, feasibility, and applicability of the MVP.

Strengths and Limitations

As with any co-creation process, there is potential for competing priorities or divergent goals, particularly when stakeholders represent a broad range of backgrounds (Stokols, 2006). In contrast, this study was limited by a relatively homogenous participant group and a narrow range of input, which may have restricted the diversity and richness of perspectives incorporated into the intervention design. Although the one-to-one format used in Stages 1 and 2 appeared to foster comfort and openness for some participants, it may have inadvertently constrained idea generation by limiting opportunities for dialogic exchange. This concern was underscored during the sub-group discussions in Stage 3, which appeared to encourage greater creativity and innovation through collaborative dialogue. It is plausible that incorporating an earlier collaborative PIP phase could have generated additional structural and content-related insights, particularly given the depth of experience and insight of the participant cohort.

Participant attrition posed another significant challenge. A notable drop-off occurred between initial recruitment and engagement in Stage 1, with 88 individuals failing to respond following pre-screening contact. This high attrition rate may be attributed to the extended duration of participation or the lack of anonymity inherent in a researcher-participant interface, especially in a context involving sensitive psychological content. Future studies may address this issue by offering a more condensed participation window or policies that preserve perceived anonymity (e.g., optional camera use during meetings). Importantly, given the therapeutic and emotionally sensitive focus of the study, participants who did not initially respond were not pursued, in recognition of the ethical imperative to avoid pressuring individuals who may not have been intrinsically motivated to engage.

Finally, although deliberate efforts were made to establish a participatory ethos, emphasizing power-sharing and participant empowerment at the outset of every interaction, residual power imbalances may have persisted. The extent to which these dynamics influenced participant contributions or the final intervention design remains unclear. Thus, while multiple steps were taken to enhance methodological rigor, the potential influence of researcher assumptions or preferences cannot be entirely excluded from the co-creation process.

Conclusion, Implications, and Future Directions

In response to the research question seeking to identify important content and design features in the co-creation of a nonattachment-based intervention for PTS, this study has yielded a prototype intervention for future piloting. Important themes included empowerment, agency, grounding and reflection space, normalization, and validation. Important content elements were rooted in mindfulness-based principles and practices and included areas of focus specifically dedicated to the cultivation of nonattachment. A unique gap between Eastern nonattachment principles and Western therapeutic approaches was addressed through the iterative and multi-phased approach to

developing a novel intervention that was primarily participant-driven. Design and feasibility elements included the importance of multi-level pre-screening for appropriate fit, action (safety) planning, timing of intervention onset or access, duration, cadence, and content accessibility (or digestibility). The approach taken in this co-creation study reflects an important first step toward addressing the evidence-based practice gap identified in previous research and delivers elements of shared decision-making shown to produce promising outcomes in applied settings. Future research should aim to implement a feasibility and acceptability trial of NPTS to determine its value in the mitigation of PTS symptoms as well as the broader adoption of nonattachment.

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Lindsay TREMBLAY: conceptualization, design, methodology, investigation, project administration, data management, formal analysis, interpretation, writing original draft.
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Declaration of interest statement
The authors have no conflicts of interest to declare.

Ethical statement
This manuscript is the authors' original work.
All participants engaged in the research voluntarily and anonymously.
Their data are stored in coded materials and databases without personal data.
The studies involving human participants were reviewed and approved by University of Derby College of Health, Psychology and Social Care Research Ethics Committee. Approval Number: ETH2324-0105.

Data availability statement
Datasets presented in this article are available from the corresponding author upon reasonable request.

Declaration on using artificial intelligence in research and manuscript preparation
The authors declare that they have used AI technologies (Open AI, Chat GPT Version 3) during exercise generation after thematic analysis yielded themes within the data set. AI was used to generate language that could be used in the co-created platform for meditations and contemplative exercises for future participants to use. Specific prompts included requests to generate mindfulness-based exercises most likely to target the core element of each module that came out of the co-creation process. Use of AI was acknowledged in the abstract of the manuscript and in the results sections and the authors are proud to have this serve as an appropriate example of the use of AI in a co-creation research study.

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