Investigating the Application of Narrative Exposure Therapy (NET) to Reduce Symptoms of Traumatic Stress in Cancer Patients not in Active Treatment: A Naturalistic Single Case Study Series

Danila D'Errico BSc, MSc, PhD

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Portfolio Abstract

Objective: This study aimed to evaluate the feasibility, acceptability, and effectiveness of Narrative Exposure Therapy (NET) in reducing symptoms of traumatic stress, anxiety and depression, and existential anxiety, and in improving quality of life and promoting post-traumatic growth in cancer patients not in active treatment.

Design: This research adopted a naturalistic, mixed-method, explanatory sequential measurement single case study design**.**

Methods: The design collected repeated weekly outcome measurements using the PTSD Checklist Civilian (PCL-C), the Hospital Anxiety and Depression Scale (HADS), and the Functional Assessment of Cancer Therapy – General 7 Items (FACT-G7). The feasibility and acceptability of NET was investigated through the use of a Change Interview. Effect sizes, Reliable Change Index, and Clinically Significant Change were also calculated on all measures.

Results: The findings demonstrated a reduction in symptoms of traumatic stress at post-intervention for three participants and no change for one participant. No change was found in symptoms of depression, whilst one participant experienced clinically significant change in symptoms of anxiety. Two participants experienced a reduction in symptoms of existential anxiety; however, this was not maintained at follow-up for one participant. Two participants experienced improvement in quality of life, and three participants demonstrated increased post-traumatic growth, but two maintained at follow-up. Effect sizes for traumatic stress, anxiety, and quality of life ranged between moderate to very large, whilst they ranged between moderate to large for depression. The Change Interview highlighted that NET is considered acceptable and feasible by this client group.

Conclusion: In conclusion, it appears that NET can be an effective intervention to reduce symptoms of traumatic stress in cancer patients not in active treatment as three repetitions of change were obtained on the PCL-C. As a time-limited and structured intervention, the benefits of NET are clear. Not only did participants find it feasible and acceptable, but its accessibility makes it easy to implement within services.

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Statement of Contribution

SYSTEMATIC LITERATURE REVIEW

- Project design: Dr Danila D'Errico, Prof Thomas Schröder, Dr Mark Gresswell
- Data analysis: Dr Danila D'Errico under the supervision of Prof Thomas Schröder and Dr Mark Gresswell.
- Write-up: Dr Danila D'Errico under the supervision of Prof Thomas Schröder and Dr Mark Gresswell

JOURNAL PAPER

- Project design: Dr Danila D'Errico, Prof Thomas Schröder, Dr Mark Gresswell
- Application for ethical approvals: Dr Danila D'Errico
- Participants Recruitment: Dr Joanna Levine and Dr Anne Abey
- Data collection and intervention delivery: Dr Danila D'Errico under the supervision of Dr Cathryn Young
- Scoring measures: Dr Danila D'Errico
- Conducting change interviews: Katie Russell and Amelia Staton
- Intervention quality checks: Dr Cathryn Young
- Data entry: Dr Danila D'Errico
- Data analysis: Dr Danila D'Errico under the supervision of Prof Thomas Schröder and Dr Mark Gresswell.
- Write-up: Dr Danila D'Errico under the supervision of Prof Thomas Schröder and Dr Mark Gresswell

SMALL-SCALE RESEARCH PROJECT

- Project design: Dr Danila D'Errico, Dr Dave Dawson, Prof Thomas Schröder
- Participants Recruitment: Dr Cathryn Young (Step4 Psychological Services)
- Data collection and intervention delivery: Charlotte Farnsworth under the supervision of Dr Danila D'Errico
- Scoring measures: Dr Danila D'Errico
- Conducting change interviews: Dr Danila D'Errico
- Data entry: Dr Danila D'Errico

- Data analysis: Dr Danila D’Errico under the supervision of Dr Dave Dawson and Prof Thomas Schröder
- Write-up: Dr Danila D’Errico under the supervision of Dr Dave Dawson and Prof Thomas Schröder

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SYSTEMATIC REVIEW

Therapist-led Interventions for the Treatment of Traumatic Stress Symptoms in Cancer Survivors: a Systematic Literature Review

Short Title: A Review of Trauma-Focused Interventions for Cancer Survivors

Dr Danila D'Errico[1*], Professor Thomas Schroder[2], and Dr Mark Gresswell[3]

[1] The University of Nottingham
[2] The University of Nottingham, UK
[3] The University of Lincoln, UK

Correspondence should be address to
Dr Danila D'Errico, Yang Fujia Building, Jubilee Campus, NG7 2TU, Nottingham, UK (e-mail: danila.d'errico@nottingham.ac.uk)

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Abstract

Objective: We reviewed the evidence regarding the effectiveness of therapist-led interventions for reducing symptoms of traumatic stress in cancer survivors

Methods: This systematic review was completed in accordance with the guidelines illustrated by Popay and colleagues and the following online databases, PsychInfo, Medline, CINAHL, were searched for peer-reviewed literature. Further studies were searched through Google Scholar and manually scanning the reference lists of all included studies. The PRISMA guidelines were followed to report results.

Results: Sixteen studies were identified, their quality varied and the interventions broadly fell into two categories: CBT-based and non-CBT interventions. Effect sizes were small to moderate in twelve studies and large in four. Drop-out rates were mostly low.

Conclusion: This review has demonstrated that the research in this field is still scarce and due to the data mostly suggesting a small to moderate effect, firm conclusions cannot be drawn on the effectiveness of the included interventions.

Background

Cancer is the leading cause of death worldwide; smoking, alcohol consumption, unhealthy diets, and lack of physical activities are some of the most common risk factors for cancer[1]. The incidence of cancer worldwide is predicted to increase by 61.7% in the next twenty years reaching a total of 27.5 million new cancer cases per year[2]; at the same time, cancer mortality has been substantially reduced through early detection, diagnosis, and treatment[1] which has consequently increased cancer survival rates (e.g., cancer survival has doubled in the last forty years in the United Kingdom)[2]. In order to provide comprehensive and effective cancer care the cancer patients' journey should not be considered over once they reach end of cancer treatment[3].

Abbey and colleagues[4] have showed that cancer survivors are likely to develop mental health problems such as anxiety, depression, and posttraumatic stress disorder (PTSD), and experience lifestyle changes that may impact on their overall quality of life and relationships[3]. In the Diagnostic and Statistical Manual of Mental Disorder 4th edition (DSM-IV)[5], the diagnostic criteria for PTSD were adjusted to include diagnoses and life-threatening illness such as cancer; this change was made after multiple studies had demonstrated the presence of traumatic stress-like symptoms in cancer patients[6]. However, this adjustment was then revoked in the fifth edition of the DSM[7]; a life-threatening condition was not considered traumatic anymore unless experienced by the person as sudden and catastrophic.

Unlike other traumatic experiences (e.g., having survived an earthquake) that might lead to individuals developing traumatic stress symptoms, cancer acts as an ongoing and chronic stress for the individual[8] and fear of recurrence is experienced by many cancer survivors[9],[10],[11]. The Field Trials for the Fourth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-4)[5] found that 22% of cancer survivors suffer from some level of lifetime cancer-related traumatic stress symptoms[5],[6]. The most common traumatic stress symptom experienced by cancer survivors include distressing recollections of cancer-related experiences such as receiving a diagnosis and having to undergo invasive procedures (e.g., chemotherapy, radiation, hormonal therapy, etc.)[12],[8]. In order to avoid triggering distressing recollections which can lead to unpleasant feelings and trauma-related thoughts and images, cancer survivors avoid specific places and situations (e.g., hospitals, doctor appointments, follow-up scans, etc.)[12].

Cancer-related traumatic stress symptoms can negatively impact on the ongoing care of cancer patients by reducing attendance at follow-up appointments, and adherence to a healthy lifestyle which may in turn increase healthcare costs and the use of healthcare services in the long run[13]. Although research has demonstrated that cancer survivors want psychosocial support for the emotional and social distress they experience as a result of their cancer journey[6] and are more likely to express their unmet psychological needs in the post-treatment phase

compared to other stages in their cancer journey[14], many cancer survivors are not referred to psycho-oncology services and therefore are not treated[15]. This is not only caused by an overall lack of psycho-oncologists in national health services, but also by other factors such as poor detection, having to wait long times, and geographical or physical barriers which prevent patients attending appointments[16].

A recent systematic literature review by Dimitrov and colleagues[17] aimed to evaluate the effectiveness of interventions for cancer-related post-traumatic stress; however, the authors excluded papers where participants had not been clearly screened for PTSD or used validated PTSD measures that had subscales that assessed for other symptoms such as depression and overall psychological distress. This inevitably limited the focus of their review (only eight studies were found that matched the review's inclusion criteria). Individuals who do not meet the criterion for PTSD, often display clinically meaningful symptoms which have an impact on their everyday functioning[18],[19],1[2]. Indeed Mundy and Baum[20] stated that PTSD might not be the right diagnosis to represent the emotional and social distress which cancer patients experience; although the PTSD diagnosis may capture many of the traumatic stress symptoms experienced by cancer patients, it may not incorporate the multidimensionality of lasting responses that are typical of the cancer experience[21],[22]. Furthermore, Dimitrov and colleagues' work[17] is limited to literature published up to April 2018, and therefore, our review provides with an overview of the most recent literature in the field.

The aim of this review was to systematically review the evidence on the effectiveness of therapist-led psychotherapeutic intervention for reducing symptoms of traumatic stress (e.g., intrusions, hyperarousal, and avoidance) in cancer survivors.

Methods

Search Strategy

This systematic review was conducted in accordance with PRISMA guidelines[23] and the following online databases, PsychInfo, Medline, CINAHL, were searched for peer-reviewed literature on these dates respectively 25th of June 2021,

27th of June 2021, and 29th of June 2021. Further studies were searched through Google Scholar (https://scholar.google.com/) and manually scanning the reference lists of all included studies.

The search terms used were (Cancer n4 survivors) AND (Trauma* OR PTSD OR Post Traumatic Stress Disorder) AND (Psychotherap* OR Group Therapy OR Psychodynamic* OR CBT OR Cognitive Behavio* OR Acceptance and Commitment Therapy OR Mindfulness OR EMDR OR Eye Movement desensitization reprocessing OR Cognitive Processing therap* OR Compassion Focused Therapy OR Cognitive Analytic Therapy OR Schema Therapy). The '*n'* search term represents the number of words that could appear between keywords/phrases, in our case four; this was used in an attempt to include all cancer types and terminology. These search terms were employed in free-text searches, but where possible, controlled vocabulary indices were also used. Controlled vocabulary indices included neoplasms and survivors, psychological trauma, post-traumatic stress disorder, and psychotherapy. All searches were conducted by the first author (DD).

Study Selection

All citations were managed using the referencing software Mendeley; after all duplicates were removed, the remaining citations' titles and abstracts were screened using the inclusion criteria in Table 1 (see Supplemental Appendices). Inclusion criteria were organised based on the PICO reporting structure (e.g., Population, Intervention, Comparator, Outcome). When eligibility was established, the papers were accessed and their full-text read.

Due to the scarcity of studies in this area, attempts were made to keep the inclusion criteria as wide as possible (e.g., no restriction on study designs, date of publication, or cancer types). The search and study selection process is illustrated in Figure 1 (see Supplemental Appendices).

Data Extraction

The study characteristics that were extracted from eligible studies included:

author(s), year, country, total number of participants and their mean age, cancer types, study design, measures of traumatic stress (including times of administration), intervention delivered (including duration and who delivered it), control group (where present), results (including where possible effect sizes). Please refer to Table 2 in Supplemental Appendices for all extracted data.

Quality Appraisal

Due to the heterogeneity of study designs included in this review, the Mixed Method Appraisal Tool (MMAT)[24] was chosen to appraise the quality of the studies selected. The MMAT was developed to help researchers to appraise the methodological quality of empirical studies. Within a single tool, the MMAT provides methodological criteria to appraise five study designs and therefore it is more time efficient compared to other tools. The MMAT can appraise qualitative studies, RCTs, non-randomised trials, quantitative descriptive research, and finally mixed-method study designs; it includes 25 criteria and 2 screening questions. The MMAT is easy to use and access online, comprehensive, quick, and short[25]. Three main steps are followed when using the MMAT. First, there are two optional screening questions which will determine whether the study is empirical or not, then the researcher has to choose the appropriate category for the study they want to appraise so that the MMAT can acknowledge the study's methodological characteristics, and finally, the researcher rates the criteria of the chosen category (e.g., 'Yes', the criterion is met; 'No', the criterion is not met; 'Can't tell', there is not enough information to judge whether the criterion is met or not). Hong and colleagues[21] recommended to provide a thorough presentation of the rating for each criterion when scoring. No study was excluded on the basis of the quality appraisal due to the paucity of studies in this field.

Data synthesis

Because eligible studies were diverse in terms of their clinical and methodological characteristics (e.g., variability in study design, intervention components, timing of outcome measures), a meta-analysis could not be performed to synthetize the findings. Therefore, a narrative synthesis approach was used to describe and compared eligible studies' characteristics and findings. The narrative

synthesis was constructed following the Popay and colleagues' guidelines[26]. Where feasible, effect sizes were calculated (where not reported) and reported to explore the magnitude of each intervention on participants[27].

Results

Study Characteristics

The electronic search of databases produced 128 papers; from this, 29 were included after title and abstract search, further 21 papers were identified through Google Scholar and reference chaining, after full-text review was completed sixteen papers entered the review (Figure 1). The characteristics of the sixteen studies included are illustrated in Table 2 (Appendix A). The studies were published between 2007 and 2021 and most of them were conducted in the USA[12], [28-35], whilst the remaining studies were conducted in Spain [36-38], UK[39], Hong Kong[40], Sweden[41], and Australia[42]. All articles were written in English and published in peer-reviewed journal. RCTs were the most common study design[28],[29],[33-35],[37],[38],[41],[42], followed by pilot studies and case series[12],[30-32],[40], an open trial[39], and non-randomized trial[36]. The sample size of the studies varied greatly ranging from five to 347 and all studies were conducted on middle-aged populations and mostly on women. The interventions largely fell into two categories: CBT-based[28-32],[34],[35],[39],[40],[42] and non-CBT based[12],[33],[36-38],[41] interventions. The total duration of interventions ranged between 3 weeks through to the longest lasting 20 weeks. In the RCTs, four studies had active comparators[34],[37],[38],[42], three had a Waiting List[33],[36],[41], one had Assessment only[28], and two had Enhanced Usual Care[34],[35]. Eleven studies[12],[28-30],[32],[33],[36-40] targeted reduction of traumatic stress symptoms as their primary aim/outcome, whilst the remaining studies[31],[34],[35],[41],[42] targeted it as secondary aim/outcome.

Quality Appraisal

The included studies demonstrated variable quality; Table 3 (see Supplemental Appendices) provides with an overview of the quality appraisal conducted on the studies included in this review. Within the RCTs, there was frequent failure to describe randomisation procedures and allocation concealment. Six out of the nine RCTs included described and appropriately performed the

randomisation process[33-35],[37],[41],[42], five had comparable sample characteristics and pre-intervention scores[41],[28],[33],[35],[38], six provided complete outcome data[28],[33-35],[38],[41], only three provided information on assessor blinding[34],[35],[38], and only one of the nine RCTs reported information regarding participants' adherence to the assigned intervention[37]. None of the RCTs explicitly reported any of their pitfalls in their study limitations section.

In all case series and pilot studies, the criteria for recruitment were clear and the sample strategy was relevant to address the research question. Although all studies included cancer survivors, some studies only focused on one type of cancer which may not necessarily be representative of the target population (cancer survivors). Four studies had breast cancer survivors[29],[30],[32],[34] and one had survivors of hematopoietic stem-cell transplantation[28]. The PTSD Checklist Civilian (PCL-C[43])[28],[36],[37],[38], the Impact of Event Scale (IES[44])[12],[29],[30],[32],[40],[42], and the Impact of Event Scale-Revised (IES-R[45])[31],[33],[34],[35],[39],[41], were used to assess traumatic stress in participants and their psychometric properties are widely accessible in the literature[46],[47],[48]. Finally, effect sizes were reported in six out of the sixteen papers included[12],[31],[34],[35],[36],[39] , six papers provided enough information to allow for effect sizes to be calculated[30],[32],[33],[38],[41],[42], whilst four did not provide enough information[28],[29],[38],[40].

Effectiveness of cognitive behavioural interventions for traumatic stress in cancer survivors

The majority of studies (62.5%) used Cognitive Behavioural Therapy (CBT)[49] features as part of their intervention plan, including socialisation to the CBT model of formulation, and strategies such as thought monitoring, thought challenges, and behavioural experiments. Of these, two studies[28],[40] explicitly identified their therapeutic intervention as CBT, whilst the others delivered adapted versions of CBT. Among the adaptations of CBT, four studies have used third wave cognitive behavioural therapies interventions such as ACT[31],[34],[35] and Metacognitive Therapy[39], whilst four have used CBT in the context of counselling[29] or have combined cognitive behavioural techniques with other strategies such as relaxation and mindfulness practices[30],[32],[42].

Most studies showed a magnitude of improvement between small to Moderate[30-32],[34],[35],[42], demonstrating the impact of these interventions on reducing symptoms of traumatic stress in cancer survivors. Three studies[28],[31],[40], provided information on the way in which the intervention did not act uniformly on symptoms of traumatic stress (hyperarousal, avoidance, intrusions). DuHamel and colleagues[28] found that participants who engaged in Telephone - CBT (T-CBT) experienced fewer PTSD symptoms and were less likely to meet diagnostic criteria for PTSD at the final follow-up compared to the control condition (assessment only). Although participants showed an overall improvement in PTSD symptoms, T-CBT reduced intrusive thoughts and avoidance, but not numbing and hyperarousal; the authors acknowledged that feelings of numbness and emotional detachment were not directly targeted in therapy and relaxation techniques and challenging maladaptive beliefs might have not been effective in reducing hyperarousal symptoms. Rico[40] examined whether CBT could reduce symptoms of anxiety, traumatic stress and depression in breast cancer survivors. Of the five participants who engaged in the intervention, one showed a reduction in intrusive symptoms but not in avoidance, two showed a reduction in symptoms of avoidance but not in intrusions, and the others deteriorated across all symptoms. Arch and Mitchell[31] examined the effectiveness of an ACT group intervention[50],[51] in reducing symptoms of anxiety and trauma in cancer survivors; the authors found that cancer-related trauma symptoms diminished at both post-intervention and follow-up; however, reduction of traumatic stress symptoms was mostly found in relation to hyperarousal and intrusiveness symptoms, but not in avoidance symptoms. Among the studies that utilised cognitive behavioural interventions, only one was found to have a large effect. Fisher and colleagues[39] examined whether six one-hour weekly individual Metacognitive Therapy[52] sessions would reduce symptoms of anxiety, depression, posttraumatic stress, and fear of recurrence in cancer survivors. Metacognitive Therapy[52] claims that cancer survivors' tendency to ruminate and worry, to focus on threat signals (e.g., pain), and to rely on unhelpful coping mechanisms (e.g., searching the internet to match their symptoms to an illness) are all reinforced by positive metacognitive beliefs about the helpfulness of these behaviours (e.g., '*worry will help me to be more prepared*'). Metacognitive Therapy led to significant reduction in post-traumatic stress symptoms and treatment gains were maintained at follow-up six months later.

Distinct from the other CBT-based studies included, Fisher and colleagues[39] included exposure strategies within their intervention plan. It could be argued that exposure strategies might have led to the large effect size found in their study. Although the findings were promising, the smaller sample size (n = 27) represents a limitation in terms of generalisability. Exposure strategies were also adopted by DuHamel and colleagues[28], however, although they reported that the intervention was effective, we cannot quantify this as they did not include or **provide** enough information to calculate effect sizes.

Effectiveness of non-cognitive behavioural interventions for traumatic stress in cancer survivors

The remaining studies adopted other forms of intervention, such as Positive Psychotherapy[36-38], Neuro Emotional Technique[12], Health-Space[33] (live weekly facilitated online chat where cancer-related topics were discussed and coping skills introduced), and Mindfulness-Based Stress Reduction[41]. Effect sizes were found for all studies but one[37]. Large effect sizes were found in study[12],[36],[38] the remaining interventions had a small to moderate effect size[33],[41]. Among the studies which showed a large effect size, Monti and colleagues[12] examined the effectiveness of a Neuro Emotional Technique (NET)[53] intervention in reducing symptoms of traumatic stress in cancer survivors who experienced distressing cancer-related recollections (e.g., intrusions). The intervention aimed to help the client to identify the cognitions, emotions, and behaviours associated with the distressing recollections and involved a muscle-resistance feedback test to help the client to understand the difference between the physiological responses activated by the recalled images against the response obtained when the individual engaged in positive cognitive statements (e.g., I can be safe). NET was effective in reducing symptoms of stress triggered by distressing cancer-related recollections in three or less 1-hour sessions. Although NET had a large effect size, due to the small sample size, findings cannot be generalised.

Two studies delivered Positive Psychotherapy (PCC)[54], one compared it to a waiting list control condition[36] and one compared to a Cognitive Behavioural Stress Management intervention (CBSM)[55],[38]. Positive Psychotherapy helps cancer

survivors to develop stress management and emotional regulation strategies and facilitates posttraumatic growth though focusing on positive resources such as positive emotions, strengths, and personal meaning; PCC facilitates narrative meaning making to alter beliefs and the integration of the cancer experience into the individual's values and future priorities. PCC was effective in reducing symptoms of traumatic stress compared to both control conditions. Although PCC showed a large effect size and was effective in reducing symptoms of traumatic stress, the authors[36],[38] acknowledged that since PCC is a multicomponent intervention, it was not possible to establish which element was the most effective to reduce symptoms of traumatic stress; moreover, as most participants were survivors of breast cancer, the generalisability of their findings to all cancer survivors is unclear. PCC was also delivered by Lleras de Frutos and colleagues[37]; in their RCT where they examined the effects of an online PCC group intervention compared to a face to face PCC on distress and posttraumatic stress, and post-traumatic growth among cancer survivors. Both versions were found to be clinically significant and symptoms of traumatic stress improved in both conditions, treatment gains were also maintained over time. However, the authors did not include effect sizes and therefore definite conclusions on effectiveness cannot be made.

Acceptability/Drop-out rates of interventions for traumatic stress in cancer survivors

Drop-out rates ranged between 0 and 40%. Both case series[12],[40] reported 100% attendance, Duhamel et al. (T-CBT)[28] and Charlson et al[30] (Contemplative Self-Healing) reported rates above 90%, all ACT studies[31],[34],[35] reported 80% attendance rates, all Positive Psychotherapy studies[35],[36],[37], reported attendance rates between 75-90%, lower rates were found in Offidani et al[32] and Owen et al.[33] studies, with rates below 65% whilst the remaining studies[29],[39],[41],[42], reported rates ranging between 75% and 87%. It is worth noting that in Monti's study[12], the maximum number of sessions delivered was three which might have had impact in terms of attendance rates.

Eight studies[28,30,32,36,38,39,41,42] clearly stated the reasons for participants drop-outs; the reasons for drop-out included: lack of interest/change their mind [32,36,38,39,41,42], lack of time[30,36,38,39,41,42], cancer recurrence[28,39,42], and other health issues[30,36,38]. Only one study[30] included qualitative data in relation to participant's experience of the intervention. The authors delivered Contemplative Self-Healing[56], a 20-week meditation-based stress reduction group program which focused on teaching participants meditation skills (e.g., breathing, healing imagery), and cognitive, affective, and behavioural coping strategies to help participants unlearn unhealthy habits and have a healthier approach to life. Participants appreciated being in a group context and therefore being able to share their experiences with other people who have been through similar challenges and learning different meditation strategies which helped them to feel less anxious and worried about the possibility of dying.

Discussion

The aim of this review was to conduct a systematic narrative review of all available evidence for the treatment of traumatic stress symptoms in cancer survivors. All included studies explored the impact of therapist-led interventions on symptoms of traumatic stress; traumatic stress was either a primary or secondary outcome. Sixteen studies were identified that matched this review's inclusion criteria; the small number suggests that the literature on the treatment of traumatic stress symptoms in cancer survivors is still largely scarce, despite the recent statistics which have highlighted the increase in cancer survival rates[1]. All included studies were conducted in the last 15 years which demonstrates that the research in this field is still in its infancy. The overlap between the studies identified in our review and the once identified by Dimitrov and colleagues[17] is limited, one two studies were included in both reviews[28,29]. This is associated with the difference in inclusion and exclusion criteria; for example, our study only included studies which recruited cancer survivors not in active treatment whilst Dimitrov and colleagues[17] included cancer patients in all stages of treatment.

Although four studies[12],[36],[39],[38] showed a large effect size, the data suggested a small to moderate effect across most interventions which demonstrated their limited impact in reducing symptoms of traumatic stress in cancer survivors. In comparison the literature on the effectiveness of psychological interventions for reducing symptoms of depression and anxiety in the same population appears more promising. Williams and Dale's systematic review[57] indicated that cognitive behavioural therapy, psychotherapy and social support groups offered some potential benefits in reducing symptoms of depression. However, the authors appropriately acknowledged that firm conclusions on effectiveness could not be drawn due to several methodological limitations (e.g., small sample sizes, inadequately powered studies, uncontrolled confounding variables). Conversely, a meta-analysis by Osborn and Demoncada[58] found CBT for anxiety and depression to have a large magnitude of treatment effect in the cancer population. However, this was limited to a small number of studies and thus further research is needed.

Although CBT is recommended as a first-line intervention for the treatment of post-traumatic stress disorder symptoms[59], no evidence was found in favour of the Cognitive Behavioural interventions included in this review, apart from Metacognitive Therapy[39],[52], which study had a small sample size and therefore firm conclusions about its effectiveness cannot be generalised. It is worth noticing that none of the studies that delivered CBT reported using evidence-based CBT based on the cognitive model initially developed by Beck and colleagues[49]. CBT aims to change the way in which a person thinks and act by using both cognitive and behavioural strategies. Of the ten studies that delivered CBT, none utilised the model developed by Beck and colleagues[49]; Duhamel and colleagues[28] and Fisher and colleagues[39] were the only authors to deliver behavioural strategies (e.g., behavioural experiments and graded exposure) as part of their intervention plan whilst others focused only on cognitive strategies such as thought challenge. Different forms of CBT have been used worldwide for the treatment of a variety of psychiatric and medical conditions[60]; but in 1996, the National Health Service in the United Kingdom stated that clinicians should use the literature more effectively and therefore use psychological interventions which are evidence-based[61].

Positive Psychotherapy (PCC) was found to have a large effect size; through delivering PCC, the authors[36],[38] aimed to facilitate cancer survivors' post traumatic growth (PTG)[62] by a process of narrative meaning-making and focus on positives. PTG is the result of the individual recognising the negative and positive effects of the event, analysing its meaning, and accepting the possible changes that the event has brought on the self[63]. PTG represents a process of transformation which ends in a successful integration of the traumatic events within the individual's life narrative[64],[65],[66],[67]. It could be argued that the focus on post traumatic growth might have led cancer survivors to experience a reduction in symptoms of traumatic stress; a recent meta-analysis[68] which included 51 studies found an overall modest, positive relationship between PTG and PTSD in the cancer population. However, being able to identify the positives of a traumatic experience can only be achieved if the individual is free from the anxiety of death[67] this might not always be possible as cancer survivors often experience fear of recurrence[9],[10],[11]. As mentioned in the results section, although results were overall promising, samples from both Ochoa et al.'s studies[36],[38] were mostly survivors of breast cancer and therefore it is not possible to draw a definite conclusion regarding the effectiveness of this intervention for all cancer survivors.

Drop-out rates were overall low in all studies; this is perhaps not unexpected as previous research has showed that cancer patients want psychosocial support for their cancer-related emotional and social distress[6]. It is not possible to establish whether the low drop-out rates were related to participants' acceptability of the included interventions, or whether it demonstrates cancer survivors' clear need for psychological support. Harrison and colleagues[14] found that unmet needs were more likely to be found in cancer survivors compared to cancer patients in active treatment; they identified that 12-85% of cancer patients reported unmet psychological needs. Cancer survivors have often reported feelings of loneliness; they might avoid talking to friends and family members to avoid having to talk about their cancer experience or to avoid being told to "stay positive" or "fight back" which is not always in line with how they feel, and they worry that by being scared or sad they will upset their loved ones and appear weak[6],[15]. Therefore, having had the opportunity to talk freely about their cancer experience and their life beyond cancer

might have had an impact on overall drop-out rates. It might have not been the intervention in itself to lead to low drop-out rates, but the opportunity to access social support and feel listened to and understood. Social support has been found to act as an effective coping strategy in managing emotional distress and has been associated with decreased depressive and anxiety symptoms[69] and overall improvements in well-being and quality of life in cancer survivors[70].

Most studies' samples mainly included middle-aged women who had recovered from a breast cancer diagnosis; middle-aged women are over-represented in the current literature on cancer-related traumatic stress and therefore it is unclear how these findings can be generalised to the wider population of cancer survivors[8]. This is in line with the findings of Dimitrov and colleagues[17] whose review included studies were women were the predominant sample.

Review Limitations

Studies were limited to English language only and this might have limited the data collection. This review has only included studies which were therapist-led with the purpose to keep the focus of the review clear; however, other types of intervention (e.g., self-help) could be effective in treating symptoms of traumatic stress in cancer survivors. Future research could evaluate the difference between therapist-led and self-help interventions in reducing symptoms of traumatic stress in cancer survivors. The current review included studies where the PCL-C[43], IES[44], and IES-R[45] were utilised. It is worth noting that whilst the PCL-C is one of the most commonly used self-report measures of PTSD and its items correspond to all of the Diagnostic and Statistical Manual of Mental Disorder 4th edition (DSM-IV) PTSD symptoms, the IES does not measure the hyperarousal symptoms. However, both measures have showed good internal consistency (PCL-C α: .94; IES α: .86) and test-retest reliability (PCL-C r: between 0.68 and 0.92; IES r: between 0.79 and 0.87)[46],[47].

The current review has also only included peer-reviewed papers to ensure a minimum standard for scientific quality at the cost of increasing publication bias: by accessing the grey literature, more studies with a positive results could have been

identified[71]. Future systematic literature reviews could consider including the grey literature to widen the search of an already limited field. Finally, this review's protocol was not registered on Prospero a priori and this is acknowledged by the authors as a shortcoming of this paper; however, a search of the Prospero database was conducted before initiating the process to ensure no other systematic literature reviews were conducted on the same topic area.

Clinical Implications

In 2018 NICE[59] recommended Narrative Exposure Therapy (NET)[72]; CBT[49] Prolonged Exposure (PE)[73],[74] and Cognitive Processing Therapy (CPT)[75] as first-line treatment options for the treatment of PTSD in adults. In the study by DuHamel and colleagues[28], T-CBT was effective for intrusive thoughts and avoidance, but not for numbness and hyperarousal and in the study by Arch and Mitchell[31], ACT was more effective in reducing symptoms of hyperarousal and intrusive thoughts, but not avoidance. The review tentatively suggests that by adopting evidence-based psychological interventions which are tailored to reduce symptoms of traumatic stress, the likelihood of cancer survivors to experience a reduction of symptoms in all areas (e.g., hyperarousal, intrusion, and avoidance) might increase. Future research in this field should test the effectiveness of more targeted evidence-based interventions for the treatment of traumatic stress in cancer survivors. Further research should also consider testing the acceptability of the interventions delivered for this population through gathering quantitative and qualitative data on participants' experience of the interventions received and their view on what has brought change (e.g., Elliot and colleagues' Change Interview)[76] and evaluating the impact of the therapeutic relationship on outcomes. Further research in this field might help to inform clinical practice within psycho-oncology services.

Conclusions

To conclude this review explored all available evidence for the treatment of traumatic stress symptoms in cancer survivors and has demonstrated that the research in this field is still scarce and in its infancy. Due to the data mostly suggesting a small to moderate effect, firm conclusions cannot be drawn on the effectiveness of the included interventions for cancer survivors. More research

should be carried out to expand our understanding of cancer survivors' psychological needs and identify interventions which are suitable and beneficial to reduce symptoms of traumatic stress for this population.

References

1. World Health Organisation. Cancer [Internet]. [place unknown: World Health Organisation]. [cited 2022 March 17]; Available from https://www.who.int/health-topics/cancer

2. Cancer Research UK. Data and statistics [Internet]. [United Kingdom: Cancer Research UK]. [cited 2022 March 17]; Available from https://www.cancerresearchuk.org/health-professional/data-and-statistics

3. Durosini I, Savioni L, Triberti S, Guiddi P, Pravettoni G. The motivation journey: A grounded theory study on female cancer survivors' experience of a psychological intervention for quality of life. International Journal of Environmental Research and Public Health. 2021 Jan;18(3):950. https://doi.org/10.3390/ijerph18030950

4. Abbey G, Thompson SB, Hickish T, Heathcote D. A meta-analysis of prevalence rates and moderating factors for cancer-related post-traumatic stress disorder. Psycho-Oncology. 2015 Apr;24(4):371-81. https://doi.org/10.1002/pon.3654

5. American Psychiatric Association A. Diagnostic and statistical manual of mental disorders. Washington, DC: American Psychiatric Association; 2000.

6. Leano A, Korman MB, Goldberg L, Ellis J. Are we missing PTSD in our patients with cancer? Part I. Canadian OnCOlOgy nursing JOurnal. 2019;29(2):141. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6516338/

7. American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

8. Cordova MJ, Riba MB, Spiegel D. Post-traumatic stress disorder and cancer. The Lancet Psychiatry. 2017 Apr 1;4(4):330-8. https://doi.org/10.1016/S2215-0366(17)30014-7

9. Ghazali N, Cadwallader E, Lowe D, Humphris G, Ozakinci G, Rogers SN. Fear of recurrence among head and neck cancer survivors: longitudinal trends. Psycho-Oncology. 2013 Apr;22(4):807-13. https://doi.org/10.1002/pon.3069

10. Humphris GM, Rogers S, McNally D, Lee-Jones C, Brown J, Vaughan D. Fear of recurrence and possible cases of anxiety and depression in orofacial cancer patients. International journal of oral and maxillofacial surgery. 2003 Jan 1;32(5):486-91. https://doi.org/10.1016/S0901-5027(03)90399-1

11. Vickberg SM. The Concerns About Recurrence Scale (CARS): a systematic measure of women's fears about the possibility of breast cancer recurrence. Annals of Behavioral Medicine. 2003 Jan 1;25(1):16-24. https://doi.org/10.1207/S15324796ABM2501_03

12. Monti DA, Stoner ME, Zivin G, Schlesinger M. Short term correlates of the Neuro Emotional Technique for cancer-related traumatic stress symptoms: A pilot case

series. Journal of Cancer Survivorship. 2007 Jun 1;1(2):161-6. https://doi.org/10.1007/s11764-007-0018-x

13. Di Matteo MR, Lepper HS, Croghan TW. Depression is a risk factor for noncompliance with medical treatment: meta-analysis of the effects of anxiety and depression on patient adherence. Archives of internal medicine. 2000 Jul 24;160(14):2101-7. https://doi.org/10.1001/archinte.160.14.2101

14. Harrison JD, Young JM, Price MA, Butow PN, Solomon MJ. What are the unmet supportive care needs of people with cancer? A systematic review. Supportive care in cancer. 2009 Aug;17(8):1117-28. https://doi.org/10.1007/s00520-009-0615-5

15. Grassi L, Spiegel D, Riba M. Advancing psychosocial care in cancer patients. F1000Research. 2017;6. https://doi.org/10.12688/f1000research.11902.1

16. Travado L, Reis JC, Watson M, Borràs J. Psychosocial oncology care resources in Europe: a study under the European Partnership for Action Against Cancer (EPAAC). Psycho-oncology. 2017 Apr;26(4):523-30. https://doi.org/10.1002/pon.4044

17. Dimitrov L, Moschopoulou E, Korszun A. Interventions for the treatment of cancer-related traumatic stress symptoms: A systematic review of the literature. Psycho-oncology. 2019 May;28(5):970-9. https://doi.org/10.1001/archinte.160.14.2101

18. Stein MB, Walker JR, Hazen AL, Forde DR. Full and partial posttraumatic stress disorder: findings from a community survey. The American journal of psychiatry. 1997 Aug. https://doi.org/10.1176/ajp.154.8.1114

19. Zlotnick C, Franklin CL, Zimmerman M. Does “subthreshold” posttraumatic stress disorder have any clinical relevance?. Comprehensive psychiatry. 2002 Nov 1;43(6):413-9. https://doi.org/10.1053/comp.2002.35900

20. Mundy E, Baum A. Medical disorders as a cause of psychological trauma and posttraumatic stress disorder. Current opinion in psychiatry. 2004 Mar 1;17(2):123-7.

21. Van Der Kolk. BA & McFarlane, AC (1996). The black hole of trauma. Traumatic Stress: The Effects of Overwhelming Experience on Mind, Body, and Society. BA Van der Kolk, AD McFarlane & L. Weisaeth (eds.).:3-23.

22. Rustad JK, David D, Currier MB. Cancer and post-traumatic stress disorder: diagnosis, pathogenesis and treatment considerations. Palliative & supportive care. 2012 Sep;10(3):213-23.

23. Moher D, Liberati A, Tetzlaff J, Altman DG, Prisma Group. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. PLoS medicine. 2009 Jul 21;6(7):e1000097. https://doi.org/10.1371/journal.pmed.1000097

24. Hong QN, Fàbregues S, Bartlett G, Boardman F, Cargo M, Dagenais P, Gagnon MP, Griffiths F, Nicolau B, O'Cathain A, Rousseau MC. The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers. Education for Information. 2018 Jan 1;34(4):285-91. https://doi.org/10.3233/EFI-180221

25. Hong QN, Gonzalez-Reyes A, Pluye P. Improving the usefulness of a tool for appraising the quality of qualitative, quantitative and mixed methods studies, the Mixed Methods Appraisal Tool (MMAT). Journal of evaluation in clinical practice. 2018 Jun;24(3):459-67. https://doi.org/10.1111/jep.12884

26. Popay J, Roberts H, Sowden A, Petticrew M, Arai L, Rodgers M, Britten N, Roen K, Duffy S. Guidance on the conduct of narrative synthesis in systematic reviews. A product from the ESRC methods programme Version. 2006 Apr 1;1:b92. https://doi.org/10.13140/2.1.1018.4643

27. Cohen J. Statistical power analysis for the behavioral sciences. Academic press; 2013 Sep 3.

28. DuHamel KN, Mosher CE, Winkel G, Labay LE, Rini C, Meschian YM, Austin J, Greene PB, Lawsin CR, Rusiewicz A, Grosskreutz CL. Randomized clinical trial of telephone-administered cognitive-behavioral therapy to reduce post-traumatic stress disorder and distress symptoms after hematopoietic stem-cell transplantation. Journal of Clinical Oncology. 2010 Aug 10;28(23):3754. https://doi.org/10.1200/JCO.2009.26.8722

29. Marcus AC, Garrett KM, Cella D, Wenzel L, Brady MJ, Fairclough D, Pate-Willig M, Barnes D, Powell Emsbo S, Kluhsman BC, Crane L. Can telephone counseling post-treatment improve psychosocial outcomes among early stage breast cancer survivors?. Psycho-oncology. 2010 Sep;19(9):923-32. https://doi.org/10.1002/pon.1653

30. Charlson ME, Loizzo J, Moadel A, Neale M, Newman C, Olivo E, Wolf E, Peterson JC. Contemplative self healing in women breast cancer survivors: a pilot study in underserved minority women shows improvement in quality of life and reduced stress. BMC complementary and alternative medicine. 2014 Dec;14(1):1-0. https://doi.org/10.1186/1472-6882-14-349

31. Arch JJ Mitchell JL. An Acceptance and Commitment Therapy (ACT) group intervention for cancer survivors experiencing anxiety at re-entry. Psycho-Oncology. 2016 May;25(5):610-5. https://doi.org/10.1002/pon.3890

32. Offidani E, Peterson JC, Loizzo J, Moore A, Charlson ME. Stress and response to treatment: Insights from a pilot study using a 4-week contemplative self-healing meditation intervention for posttraumatic stress in breast cancer. Journal of evidence-based complementary & alternative medicine. 2017 Oct;22(4):715-20. https://doi.org/10.1177/2156587217708522

33. Owen JE, O'Carroll Bantum E, Pagano IS, Stanton A. Randomized trial of a social networking intervention for cancer-related distress. Annals of Behavioral Medicine. 2017 Oct 1;51(5):661-72. https://doi.org/10.1007/s12160-017-9890-4

34. Johns SA, Stutz PV, Talib TL, Cohee AA, Beck-Coon KA, Brown LF, Wilhelm LR, Monahan PO, LaPradd ML, Champion VL, Miller KD. Acceptance and commitment therapy for breast cancer survivors with fear of cancer recurrence: A 3-arm pilot randomized controlled trial. Cancer. 2020 Jan 1;126(1):211-8. https://doi.org/10.1002/cncr.32518

35. Arch JJ, Mitchell JL, Genung SR, Judd CM, Andorsky DJ, Bricker JB, Stanton AL. Randomized trial of acceptance and commitment therapy for anxious cancer survivors in community clinics: Outcomes and moderators. Journal of Consulting and Clinical Psychology. 2021 Apr;89(4):327. https://doi.org/10.1037/ccp0000630

36. Ochoa C, Casellas-Grau A, Vives J, Font A, Borràs JM. Positive psychotherapy for distressed cancer survivors: Posttraumatic growth facilitation reduces posttraumatic stress. International Journal of Clinical and Health Psychology. 2017 Jan 1;17(1):28-37. https://doi.org/10.1016/j.ijchp.2016.09.002

37. Lleras de Frutos M, Medina JC, Vives J, Casellas-Grau A, Marzo JL, Borràs JM, Ochoa-Arnedo C. Video conference vs face-to-face group psychotherapy for distressed cancer survivors: A randomized controlled trial. Psycho-Oncology. 2020 Dec;29(12):1995-2003. https://doi.org/10.1002/pon.5457

38. Ochoa-Arnedo C, Casellas-Grau A, Lleras M, Medina JC, Vives J. Stress management or post-traumatic growth facilitation to diminish distress in cancer survivors? A randomized controlled trial. The Journal of Positive Psychology. 2020 May 14:1-1. https://doi.org/10.1080/17439760.2020.1765005

39. Fisher PL, Byrne A, Fairburn L, Ullmer H, Abbey G, Salmon P. Brief metacognitive therapy for emotional distress in adult cancer survivors. Frontiers in Psychology. 2019 Jan 31;10:162. https://doi.org/10.3389/fpsyg.2019.00162

40. Rico L. Cognitive behavioral therapy for highly stressed breast cancer survivors. Journal of Pain Management. 2012;5(1):33. https://psycnet.apa.org/record/2012-07911-001

41. Bränström R, Kvillemo P, Brandberg Y, Moskowitz JT. Self-report mindfulness as a mediator of psychological well-being in a stress reduction intervention for cancer patients—A randomized study. Annals of behavioral medicine. 2010 May 1;39(2):151-61. https://doi.org/10.1007/s12160-010-9168-6

42. Butow PN, Turner J, Gilchrist J, Sharpe L, Smith AB, Fardell JE, Tesson S, O'Connell R, Girgis A, Gebski VJ, Asher R. Randomized trial of ConquerFear: a novel, theoretically based psychosocial intervention for fear of cancer recurrence. Journal of Clinical Oncology. 2017 Dec 20;35(36):4066-77. https://doi.org/10.1200/JCO.2017.73.1257

43. Weathers FW, Litz BT, Herman D, Huska J, Keane T. The PTSD checklist-civilian version (PCL-C). Boston, MA: National Center for PTSD. 1994;10.

44. Horowitz M, Wilner N, Alvarez W. Impact of Event Scale: A measure of subjective stress. Psychosomatic medicine. 1979 May 1;41(3):209-18. https://doi.org/10.1097/00006842-197905000-00004

45. Weiss DS. The impact of event scale: revised. InCross-cultural assessment of psychological trauma and PTSD 2007 (pp. 219-238). Springer, Boston, MA.

46. Wilkins KC, Lang AJ, Norman SB. Synthesis of the psychometric properties of the PTSD checklist (PCL) military, civilian, and specific versions. Depression and anxiety. 2011 Jul;28(7):596-606. https://doi.org/10.1002/da.20837

47. Sundin EC, Horowitz MJ. Impact of Event Scale: psychometric properties. The British Journal of Psychiatry. 2002 Mar;180(3):205-9. https://doi.org/10.1192/bjp.180.3.205

48. Creamer M, Bell R, Failla S. Psychometric properties of the impact of event scale—revised. Behaviour research and therapy. 2003 Dec 1;41(12):1489-96.

49. Beck AT, editor. Cognitive therapy of depression. Guilford press; 1979.

50. Hayes, S. C., Strosahl, K. D., & Wilson, K. G. Acceptance and commitment therapy: An experiential approach to behavior change. Guilford Press; 1999

51. Hayes, S. C., Strosahl, K. D., & Wilson, K. G. Acceptance and commitment therapy: The process and practice of mindful change (2nd ed.). Guilford Press; 2012

52. Wells, A. Metacognitive for Anxiety and Depression. Guildford Press; 2009

53. Walker S. Neuro emotional technique: NET basic manual. Encinitas, CA: NET Inc. 1996.

54. Ochoa-Arnedo C, Casellas-Grau A. Positive psychotherapy in cancer: Facilitating posttraumatic growth in assimilation and accommodation of traumatic experience. . In C. R. Martin, V. R., Preedy, & B. P. Vinood (Eds.), *Comprehensive Guide to Post-Traumatic Stress Disorder* (pp. 113-127). Springer International Publishing; 2015

55. Antoni MH. Stress management intervention for women with breast cancer. American Psychological Association; 2003 https://doi.org/10.1037/10488-000

56. Loizzo J, Charlson M, Peterson J. A Program in Contemplative Self-Healing: Stress, Allostasis, and Learning in the Indo-Tibetan Tradition. Annals of the New York Academy of Sciences. 2009 Aug;1172(1):123-47. https://doi.org/10.1111/j.1749-6632.2009.04398.x

57. Williams S, Dale J. The effectiveness of treatment for depression/depressive symptoms in adults with cancer: a systematic review. British journal of cancer. 2006 Feb;94(3):372-90. https://doi.org/10.1038/sj.bjc.6602949

58. Osborn RL, Demoncada AC, Feuerstein M. Psychosocial interventions for depression, anxiety, and quality of life in cancer survivors: meta-analyses. The international journal of Psychiatry in Medicine. 2006 Mar;36(1):13-34. https://doi.org/10.2190/EUFN-RV1K-Y3TR-FK0L

59. National Institute for Health and Care Excellence. Post-traumatic stress Disorder [Internet] [London]: NICE; 2018. (Clinical Guideline [NG116]). Available from: https://www.nice.org.uk/guidance/ng116

60. Essali A. Psychotherapy: From Eminence-Based to Evidence-Based. The Editorial Assistants–Jordan. 2017;28(1):164-9.

61. Lees J. Cognitive-behavioural therapy and evidence based practice: past, present and future. European Journal of Psychotherapy and Counselling. 2008 Sep 1;10(3):187-96. https://doi.org/10.1080/13642530802337827

62. Tedeschi RG, Calhoun LG. " Posttraumatic growth: conceptual foundations and empirical evidence". Psychological inquiry. 2004 Jan 1;15(1):1-8. https://doi.org/10.1207/s15327965pli1501_01

63. Pals JL, McAdams DP. The transformed self: A narrative understanding of posttraumatic growth. Psychological Inquiry. 2004 Jan 1:65-9. https://www.jstor.org/stable/20447204

64. Angus LE, McLeod J, editors. The handbook of narrative and psychotherapy: Practice, theory and research. Sage; 2004.

65. Freda MF, Martino ML. Health and writing: Meaning-making processes in the narratives of parents of children with leukemia. Qualitative Health Research. 2015 Mar;25(3):348-59. https://doi.org/10.1177/1049732314551059

66. Hermans HJ. The construction and reconstruction of a dialogical self. Journal of constructivist psychology. 2003 Apr 1;16(2):89-130. https://doi.org/10.1080/10720530390117902

67. Martino ML, Freda MF. Post-traumatic growth in cancer survivors: Narrative markers and functions of the experience's transformation. The Qualitative Report. 2016 Apr 25;21(4):765. http://nsuworks.nova.edu/tqr/vol21/iss4/11

68. Marziliano A, Tuman M, Moyer A. The relationship between post-traumatic stress and post-traumatic growth in cancer patients and survivors: A systematic review and meta-analysis. Psycho-Oncology. 2020 Apr;29(4):604-16. https://doi.org/10.1002/pon.5314

69. Kawachi I, Berkman LF. Social ties and mental health. Journal of Urban health. 2001 Sep;78(3):458-67. https://doi.org/10.1093/jurban/78.3.458

70. McDonough MH, Sabiston CM, Wrosch C. Predicting changes in posttraumatic growth and subjective well-being among breast cancer survivors: the role of social support and stress. Psycho-Oncology. 2014 Jan;23(1):114-20. https://doi.org/10.1002/pon.3380

71. Gopalakrishnan S, Ganeshkumar P. Systematic reviews and meta-analysis: understanding the best evidence in primary healthcare. Journal of family medicine and primary care. 2013 Jan;2(1):9.

72. Schauer M, Schauer M, Neuner F, Elbert T. Narrative exposure therapy: A short-term treatment for traumatic stress disorders. Hogrefe Publishing; 2011.

73. Foa EB, Hembree EA, Rothbaum BO. Prolonged exposure therapy for PTSD: Emotional processing of traumatic experience. Therapist Guide. 2007.

74. Foa EB, Rothbaum BO, Riggs DS, Murdock TB. Treatment of posttraumatic stress disorder in rape victims: a comparison between cognitive-behavioral procedures and counseling. Journal of consulting and clinical psychology. 1991 Oct;59(5):715. https://doi.org/10.1037/0022-006X.59.5.715

75. Resick PA, Schnicke MK. Cognitive processing therapy for sexual assault victims. Journal of consulting and clinical psychology. 1992 Oct;60(5):748. https://doi.org/10.1037/0022-006X.60.5.748

76. Elliott R, Slatick E, Urman M. Qualitative change process research on psychotherapy: Alternative strategies. Psychological Test and Assessment Modeling. 2001;43(3):69. https://psycnet.apa.org/record/2003-99376-005

77. Bhide A, Shah PS, Acharya G. A simplified guide to randomized controlled trials. Acta obstetricia et gynecologica Scandinavica. 2018 Apr;97(4):380-7. https://doi.org/10.1111/aogs.13309

Supplemental Appendices

Table 1

Inclusion Criteria

Inclusion Criterion	Rationale
Cancer survivors not in active treatment	To allow enough time for traumatic stress to develop and avoid confounding treatment-induced distress
Adults (18 years and above), diagnosed with cancer in adulthood	This review focused on cancer survivors who were diagnosed with cancer in adulthood Being diagnosed with cancer in childhood might represent a different experience compared to receiving a diagnosis in adulthood
All cancer types	Having access to papers which included all types of cancer widened the search and allows to be more inclusive as all cancer experiences have the potential to be traumatic
Measure of traumatic stress with documented psychometric properties	The focus of this review was to identify research that aimed to reduce symptoms of traumatic stress in cancer survivors To ensure the reliability and validity of the findings
Comorbidity with other mental health disorders	Traumatic stress is often associated with other mental health disorders (e.g., depression and anxiety) and therefore studies were participants presented with comorbidities were included to facilitate ecological validity. Patients with or without comorbidities were included
Any psychotherapeutic therapist-led interventions	Having access to papers which included any therapist-led psychotherapeutic interventions widened the search Interventions which are therapist-led or guided are likely to be categorically different from self-help programmes
Any study designs	Having access to papers which included all study designs widened the search

	Because the literature in this area highlights an overall heterogeneity of designs, choosing one specific study design would have limited our search
Studies published in English	The authors speak English
Studies published in peer-reviewed journal	It’s a quality standard and they are more likely to be of higher methodological quality

Table 2

Study Characteristics

Author	Study Location	Participants	Study Characteristics	Measure of traumatic stress	Intervention	Control	Results
1. Monti et al., 2007[12]	USA	7 cancer survivors Cancer type: breast, cervical, hodgkins Mean age: 56.8 All women	Case series	IES Pre and post Intervention	Neuro-Emotional Technique (NET) Number of sessions depends on time required for participants to report that the event no longer feels bothersome. Delivered by a psychiatrist	N/A	• NET was effective in reducing symptoms of stress triggered by distressing cancer-related recollections (d = 1.27)
2. Branstrom et al., 2010[41]	Sweden	71 cancer survivors Cancer type: varied Mean age: 51.8 70 women 1 man	Randomised Controlled Trial	IES-R Pre and Post Intervention	Mindfulness Based Stress Reduction (MBSR) (n = 32) 8 2-hour weekly group sessions Delivered by Clinical Psychologists	Waiting List (WL) (n = 39)	• Participants randomised to the intervention condition showed greater decrease in symptoms of posttraumatic stress (IES-subscales effect sizes ranged between .29 and .59)
3. Duhamel et al., 2010[28]	USA	81 survivors of hematopoietic stem-cell transplantation Cancer type: hematologic and lymphoid cancers and non-malignant diseases T-CBT: Mean age: 52.19 19 women 28 men Assessment only: Mean age: 49.38 22 women 12 men	Randomised Clinical Trial	PCL-C Baseline Follow ups: 6/9/12 months after intervention	Telephone -CBT T-CBT (n = 47) 10-session manualised intervention delivered during a period of 10-16 weeks Delivered by post-doctoral psychology research fellows	Assessment only (n=34)	• T-CBT participants experienced less PTSD symptoms and were less likely to meet criteria for a PTSD diagnosis at follow-up. • T-CBT was effective for intrusive thoughts and avoidance, but not for numbness and hyperarousal.

							• No effect sizes reported
4. Marcus et al., 2010[29]	USA	304 breast cancer survivors	Randomized Controlled Trial	IES – only Intrusion Subscale Baseline 3/6/12/18 months post-enrolment	Telephone Counselling Programme (n = 114) 16 45-minute sessions Delivered by Master-level psychosocial oncology Counsellors	Resource booklet only	• The Telephone Counselling Programme led to reduction in symptoms of traumatic stress compared to the control condition • No effect sizes reported
5. Rico, 2012[40]	Hong Kong	5 cancer survivors Cancer type: colon, breast Mean age: 54.8 4 women 1 man	Case series	IES Pre and Post Intervention	CBT 9-10 individual sessions of approximately 90 minutes Delivered by Clinical Oncologist	N/A	• Two out of five participants showed a small reduction in symptoms of traumatic stress • There was no significant different between pre and post-tests in the two IES subscales • No effect sizes reported
6. Charlson et al., 2014[30]	USA	46 breast cancer survivors 42 completed follow-up Mean age: 63 All women	Pilot study	IES Pre and Post Intervention	Contemplative Self-Healing group intervention 20-week group meditation-based stress reduction programme Delivered by Psychologists	N/A	• The Contemplative Self-Healing group intervention reduced symptoms of post-traumatic stress, especially avoidance • No effect sizes reported but calculated: d = .37 which demonstrated the intervention had a small to medium effect
7. Arch & Mitchell, 2016[31]	USA	42 cancer survivors	Pilot study	IES-R	Acceptance and Commitment Therapy (ACT) group intervention	N/A	• Trauma Symptoms related to cancer diminished at

		Cancer type: breast, gastrointestinal, gynaecologic, leukaemia/lymphoma, other Mean age: 53.52 39 women 3 men		Three baseline points: 3.5/2/0.5 weeks prior to intervention Mid-intervention Post Intervention (1 week after) Follow-up (3 months after)	7 weekly 2 hours sessions Delivered by a Clinical Psychologist and an experienced Social Worker, both trained in ACT		both Post (d = .58) and FU (d = .84). • However, the magnitude of improvement was small for avoidance at both Post and FU (d = .17; d = .32)
8. Butow et al., 2017[42]	Australia	222 cancer survivors Cancer type: breast, colorectal, melanoma ConquerFear: Mean age:53.31 115 women 6 men TiE: Mean age: 52.27 96 women 5 men	Randomized Controlled Trial	IES Pre and Post intervention 3 and 6 months follow up	Conquer Fear (n = 121) 5 60-90 minute sessions Delivered by therapists	Taking-it-Easy (TiE) (n = 101) 5 60-90 minute sessions Delivered by therapist	• Conquer Fear led to greater reductions in symptoms of traumatic stress compared to the Taking-it-Easy intervention • Effect sizes: Conquer Fear: d = .57 TiE: d = .23
9. Ochoa et al., 2017[36]	Spain	126 cancer survivors Cancer type: mostly breast, and some uterine, hodgkins lymphoma, colon, ovary, rectum PCC Mean age: 48.93 All women WL Mean age: 48.49 All women	Non randomised-trial No random allocation	PCL-C Pre-intervention Post-intervention 3 and 12 months FU (FUs only for the intervention condition)	Positive Psychotherapy for Cancer Survivors (PCC) (n = 73) 12 weekly group sessions 90-120 minutes long Delivered by Clinical Psychologists	Waiting list (WL) (n = 53)	• The PCC group intervention promoted an increase in PTG among participants which then led to a reduction in symptoms of post-traumatic stress and emotional distress among participants • Effect size: d = 10.03
10. Offidani et al., 2017[32]	USA	31 breast cancer survivors Mean age: 60	Pilot Study	IES	Contemplative Self-Healing Meditation Intervention	N/A	• The Intervention was more effective in reducing symptoms

		All women		Pre and Post Intervention	4-week group programme 90-minute session		of traumatic stress in women who were distressed at baselined compared to those who were not • Effect sizes (not reported but calculated) ranged between d = 0 to 0.25 in the No stress group and between d = 0 to 48 in the Stress group
11. Owen et al., 2017[33]	USA	347 cancer survivors Cancer type: breast, prostate, colorectal, female reproductive, hematologic, others Health-Space Mean age: 52.9 136 women 40 men WL Mean age: 53.3 138 women 33 men	Pilot Randomised Controlled Trial	IES-R Pre and Post Intervention	Health-Space Intervention (n = 176) 12-week multicomponent distress management group intervention (guided) Delivered by doctoral-level Clinical Psychology students	Waiting list (WL) (n = 171)	• Health-Space was not associated with significant improvements in cancer-related distress • Both the treatment and control condition showed improvement over time (SNI: d = .25; WL: d = .29)
12. Fisher et al., 2019[39]	UK	27 cancer survivors Cancer type: breast, haematological, ovarian, sarcoma, colorectal, ocular, lung Mean Age: 51.15 23 women 4 men	Open Trial	IES-R Pre and Post Treatment 3-month follow up 6-month follow up	Metacognitive therapy 6 individual face to face sessions Delivered by therapists	N/A	• Metacognitive Therapy led to significant reductions in post-traumatic symptoms and treatment gains were sustained through the 6-month follow-up (Post: d = 1.21, 3-month: d = 1.14, 6-month: d = 1.18)
13. Johns et al., 2020[34]	USA	91 breast cancer survivors ACT Mean age: 59.84	3-arm Pilot Randomised Controlled Trial	IES-R Baseline	ACT (group-based) (n = 33)	Survivorship Education (group-based) (n = 32)	• Both the SE and EUC groups demonstrated weak reductions in fear of

		All women Survivorship Education Mean age: 57.53 All women Enhanced Usual Care Mean age: 58.68 All women		Post Intervention 1 month after the intervention 6 months after the intervention	6 weekly 2-hour sessions Delivered by a doctoral-level provider trained in mindfulness and ACT	6 weekly 2-hour sessions Delivered by master level oncology social workers <u>Enhanced Usual Care</u> (n = 26) Participants received standard care from their healthcare providers and a booklet entitled: '*Facing Forward: Life After Cancer Treatment'* Delivered by a doctoral level oncology nurse	recurrence distress and posttraumatic stress disorder symptoms compared with individuals who engaged in the ACT group • Effect sizes: ACT VS SE: d = .33 ACT VS EUC: d = .42
14. Lleras de Frutos et al., 2020[37]	Spain	269 cancer survivors Cancer type: breast F2F Mean age: 52.17 All women Online Mean age: 47.34 All women	Randomized Controlled Trial	PCL-C Baseline Immediately after treatment 3 months after treatment	Face to Face Group Positive Psychotherapy (n = 145) 12 weekly group sessions Delivered by Clinical Psychologists	Online Group Positive Psychotherapy (n = 124) 11 weekly online group sessions and 1 session conducted face to face	• Treatment effect was clinically significant in both modalities showing that Positive Psychotherapy can reduce symptoms of traumatic stress in cancer survivors • No effect sizes Reported
15. Ochoa-Arnedo et al., 2020[38]	Spain	140 cancer survivors Cancer type: mostly breast, but also colorectal, gynaecological, others	Randomised Controlled Trial	PCL-C Pre and Post Intervention	Cognitive Behavioural Stress Management (CBSM) (n = 67)	Positive Psychotherapy for Cancer Survivors (PCC) (n = 73)	• PCC was more effective in reducing stress and distress in cancer survivors (d

		CBSM Mean age: 49.68 All women PPC Mean age: 50.81 All women		3 and 12 months FU	12 weekly 90 minute group sessions Delivered by Clinical Psychologists	12 weekly 90 minute group sessions Delivered by Clinical Psychologists	=.67) compared to CSBM: (d = .28)
16. Arch et al., 2021[35]	USA	134 cancer survivors Cancer type: breast, blood, gastrointestinal, gynaecologic, lung, head and neck, prostate or testicular, other ACT Mean age: 56.19 57 women 10 men EUC Mean age: 56.09 61 women 6 men	Randomised Clinical Trial	IES-R Baseline (before randomization) Follow ups: 1/2/5/8 months after randomization (the 2 months assessment occurred at 1-week post-intervention)	ACT group intervention (n = 67) 7 weekly 2 hours sessions Delivered by Social workers	Enhanced Usual care - EUC (n = 67) Emailing an extensive list of oncology support group resources and encouraging to contact their onsite clinical social worker for support as needed	• Trauma symptoms improved in the ACT condition compared to the EUC one. • Effect sizes: ACT: d = .30 EUC: d = .28

Table 3

Critical appraisal of the included studies based on the MMAT tool.

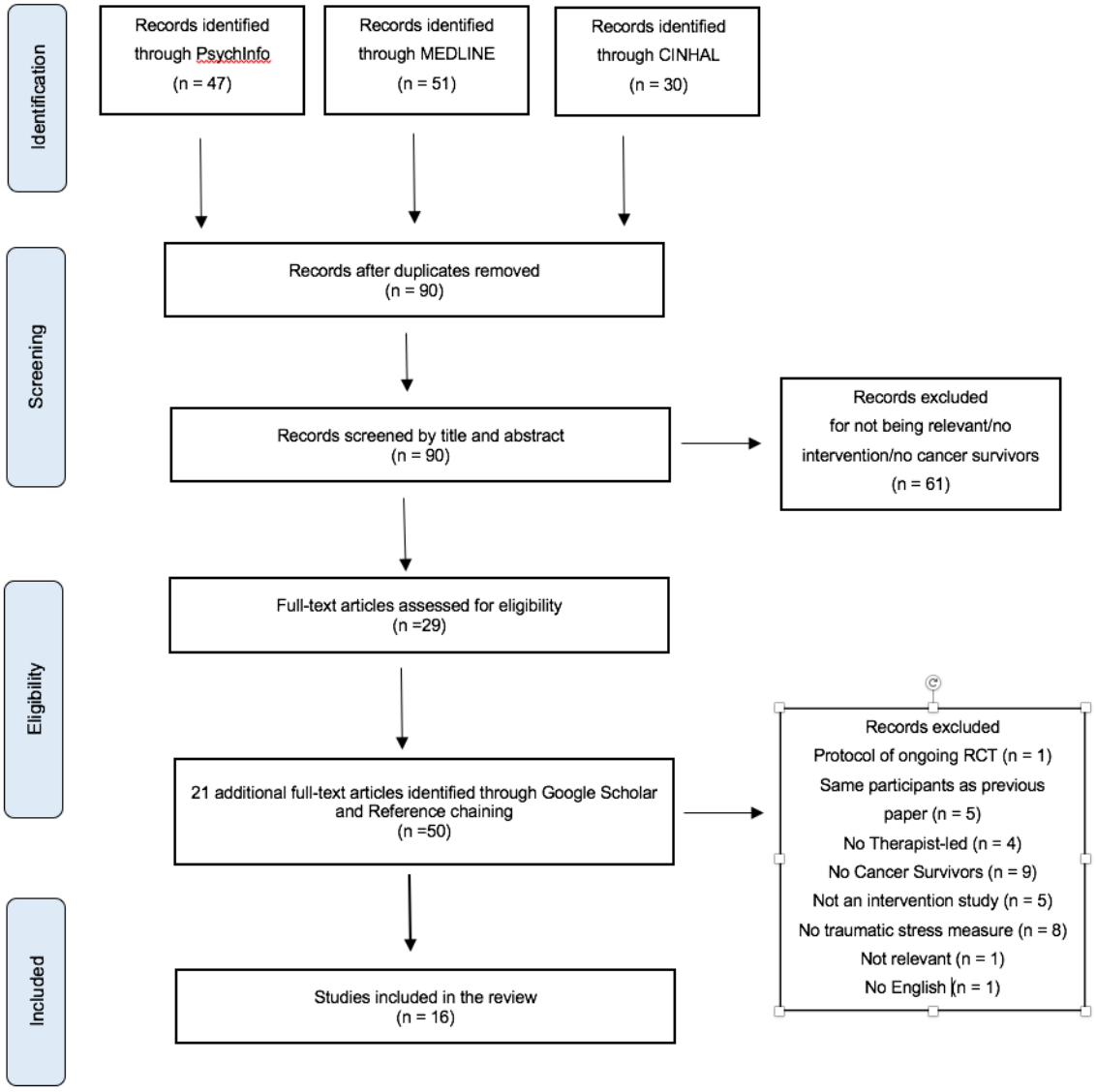
Study	**Quantitative Randomised Controlled MMAT Item**				
	Is randomization appropriately performed?	Are the groups comparable at baseline?	Are there complete outcome data?	Are outcome assessors blinded to the intervention provided?	Did the participants adhere to the assigned intervention?
Branstrom et al., 2010	Yes	Yes	Yes	Can't tell	Can't tell
DuHamel et al., 2010	No	Yes	Yes	Can't tell	Can't tell
Marcus et al., 2010	Can't tell	Can't tell	Can't tell	Can't tell	Can't tell
Butow et al., 2017	Yes	No	No	No	Can't tell
Owen et al., 2017	Yes	Yes	Yes	No	Can't tell
Johns et al., 2020	Yes	Can't tell	Yes	Yes	Can't tell
Lleras de Frutos et al., 2020	No	No	No	No	Yes
Ochoa et al., 2020	Yes	Yes	Yes	Yes	Can't tell
Arch et al., 2021	Yes	Yes	Yes	Yes	Can't tell
Study	**Quantitative Non-Randomised MMAT Item**				
	Are the participants representative of the target population?	Are measurements appropriate regarding both the outcome and intervention (or exposure)?	Are there complete outcome data?	Are the confounders accounted for in the design and analysis?	During the study period, is the intervention administered (or exposure occurred) as intended?
	Yes	Yes	No	Can't tell	Can't tell

Ochoa et al., 2017

Study	Quantitative Descriptive MMAT Item				
	Is the sampling strategy relevant to address the research question?	Is the sample representative of the target population?	Are the measurements appropriate?	Is the risk of nonresponse bias low?	Is the statistical analysis appropriate to answer the research question?
Monti et al., 2007	Yes	No	Can't tell	Can't tell	Can't tell
Rico, 2012	Yes	No	Can't tell	Can't tell	Can't tell
Arch & Mitchell, 2016	Yes	Yes	Yes	Can't tell	Yes
Offidani et al., 2017	Yes	No	Yes	Can't tell	Yes
Fisher et al., 2019	Yes	Yes	Yes	Can't tell	Yes
Study	**Mixed Method MMAT Item**				
	Is there an adequate rationale for using a mixed methods design to address the research question?	Are the different components of the study effectively integrated to answer the research question?	Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?
Charlson et al., 2014	No	No	No	No	Can't tell

Figure 1

PRISMA flowchart of study selection process



JOURNAL PAPER

Investigating the Application of Narrative Exposure Therapy (NET) to Reduce Symptoms of Traumatic Stress in Cancer Patients not in Active Treatment: A Naturalistic Single Case Study Series*

Short title: NET to reduce symptoms of traumatic stress in cancer survivors

Dr Danila D'Errico[1,2], Prof Thomas Schröder[1,2], Dr Mark Gresswell[3], Dr Cathryn Young[2]

[1] The University of Nottingham

[2] Nottinghamshire Healthcare NHS Foundation Trust

[3]The University of Lincoln

Correspondence should be address to Dr Danila D'Errico, Yang Fujia Building, Jubilee Campus, NG7 2TU, Nottingham, UK
(e-mail: danila.d'errico@nottingham.ac.uk)

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* Disclaimer:

Under supervision from Prof Schröder and Dr Gresswell, Dr D'Errico (Trainee Clinical Psychologist) developed and wrote a research protocol, parts of which are now included in the final thesis.

Abstract

Objective: This study aimed to evaluate the feasibility, acceptability, and effectiveness of Narrative Exposure Therapy (NET) in reducing symptoms of traumatic stress and anxiety and depression in cancer patients who are not in active treatment.

Design: This research adopted a naturalistic, mixed-method, explanatory sequential measurement single case study design**.**

Methods: The design collected repeated weekly outcome measurements using the PTSD Checklist Civilian and the Hospital Anxiety and Depression Scale. The feasibility and acceptability of NET was investigated through the use a Change Interview. Effect sizes, Reliable Change Index, and Clinically Significant Change were calculated.

Results: The findings demonstrated a reduction in symptoms of traumatic stress at post-intervention for three participants and no change for one participant. No change was found in symptoms of depression, whilst only one participant experienced clinically significant change in symptoms of anxiety. Effect sizes for traumatic stress and anxiety ranged between moderate and very large, whilst they ranged between moderate and large for depression.

Conclusion: In conclusion, it appears that NET can be an effective intervention to reduce symptoms of traumatic stress in cancer patients not in active treatment, but not anxiety and depression symptoms. As a time-limited and structured intervention, the benefits of NET are clear. Not only did participants find it feasible and acceptable, but its accessibility makes it easy to implement within services.

Keywords:
Narrative Exposure Therapy, Cancer, Traumatic Stress, Depression and Anxiety, Single Case Study Series

Data availability statement:

Data available on request due to privacy/ethical restrictions

(Templates available at: https://authorservices.wiley.com/author-resources/Journal-Authors/open-access/data-sharing-citation/data-sharing-policy.html)

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No funding was received for the purpose of this study.

Ethical Approvals and Study Registration

This study received final ethical approval from the North West - Liverpool Central Research Ethics Committee and Health Research Authority on the 14th of February 2022 (22/NW/0024). This study was also registered on a public trial database prior to recruitment (https://clinicaltrials.gov/; NCT05272553).

Practitioner Points:

- Cancer research is still in its infancy. As more attention has been brought on the psychosocial needs of cancer patients and survivors, more research is needed to ensure their needs are met.
- The research on NET is growing and promising. However, it mostly focused on asylum seekers, refugees, survivors of organised violence or intimate partner violence.
- Psycho-oncology services across the UK lack the resources to deliver long-term interventions. NET could represent an appropriate alternative to offer cancer patients and survivors with trauma-focused interventions.

Background

Many elements of cancer[1] diagnosis and treatment can be perceived as traumatic by cancer patients, including diagnostic testing, waiting periods, treatment procedures, and follow-up scans and appointments (Leano et al., 2019). Unlike single traumatic events that might lead to Post-traumatic Stress Disorder (PTSD; American Psychiatric Association [APA], 2013)[2] (e.g., natural disasters), cancer behaves as a chronic and ongoing stressor (Cordova et al., 2017). The threat posed by cancer is internal, ever-present, and unavoidable (Kangas et al., 2002)[4]. Having cancer can have a major negative impact on individuals' assumptions of invulnerability and certainty (Janoff-Bulman, 1992). Emotional and social distress can lead cancer patients to question their own individual values, the meaning of their existence, and their sense of belonging with their loved ones. Patients with cancer often report feelings of loneliness, abandonment and marginalization (e.g., they might withdraw from friends and family to avoid talking about cancer) (Grassi et al., 2017).

Cancer-related traumatic stress symptoms[3] can lead to reduced treatment compliance and less adherence to a healthy lifestyle which might compromise cancer patients' chances of survival (Chen et al., 2017). Unfortunately, many cancer patients are not referred to psycho-oncology services to be assessed and treated as their emotional and social distress is often perceived as "normal" and therefore "manageable" (Grassi et al., 2017). Survivorship has occupied more attention recently with data indicating that promoting health and wellbeing of post treatment cancer patients is critical to achieve more comprehensive cancer care. However, most cancer survivors' psychological problems are not taken into consideration as the disease has been treated and therefore the patient is considered as "recovered" (Grassi et al., 2017). The result is that the emotional and social distress experienced by 30-40% of cancer survivors is not identified and therefore not treated (Kissane, 2014, as cited in Grassi et al., 2017).

[1] See Extended Literature Review for further information on cancer
[2] See Extended Literature Review for further information on psychological trauma
[3] See Extended Literature review for further information on PTSD in cancer patients

Although research has shown that most cancer survivors are interested in receiving psychosocial support, the literature in this field is still scarce (Leano et al., 2019). A recent systematic literature review (D'Errico et al., 2022) found sixteen papers that explored interventions for the treatment of cancer-related traumatic stress symptoms in cancer survivors. Effect sizes ranged from small to moderate, and none of the studies utilised evidence-based psychological interventions tailored to reduce symptoms of traumatic stress as recommended by the National Institute for Health and Care Excellence guidelines (NICE, 2018).

An intervention that has the potential to be beneficial and feasible for cancer survivors who experience symptoms of traumatic stress is Narrative Exposure Therapy (NET; Schauer et al., 2011)[4]. In 2018 NICE recommended NET as a first-line treatment option for PTSD. NET is an evidence-based, short-term, manualised treatment for trauma-spectrum disorders. Previous studies have demonstrated that NET has lower rates of drop-out compared to other treatments (e.g. Dialectical Behavioural Therapy, Eye Movement Desensitization and Reprocessing Therapy) (Mørkved et al., 2014) and treatment gains for PTSD symptoms and comorbid disorders were found to be stable at follow-up (Lely et al., 2019; Raghuraman et al., 2020; Robjant & Fazel, 2010; Siehl et al., 2021; Wright et al., 2020). NET aims to reduce post-traumatic stress through two main mechanisms: fear habituation and integration of traumas within autobiographical memory. In NET with the help of the therapist, the client constructs a consistent, coherent autobiographical narrative of their most significant experiences by laying a symbolic lifeline which includes both positive (flowers) and negative (stones) events. During each session, traumatic events that were highly arousing are narrated in detail. Contextual information is crucial at this stage to aid habituation, the aim is to help the client to place trauma memories activated within the associated fear network within the appropriate space and time of their occurrence. At the end of each session, the therapist transcribes the session's narrative. These transcriptions are then read to the client at the beginning of the following session, and the client is encouraged to fill in any gaps and address any distortions or inconsistencies. The detailed account of the client's story will then become the client's testimony at the end of therapy.

[4] See Extended Literature Review for further information on NET

As a time-limited and structured intervention, NET might be suitable for use in psycho-oncology services which might lack resources to offer long-term psychosocial support. Due to the ongoing and chronic distressing nature of cancer, NET may help cancer patients to process (and habituate to the fear engendered by) the traumatic events they experienced throughout their journey into cancer. The testimony focus as well will give cancer patients the opportunity to openly share with loved ones and professionals the challenges they have faced during their journey into cancer.

The main purpose[5] of this study was to evaluate the feasibility, acceptability, and potential effectiveness of NET in reducing symptoms of traumatic stress (e.g., hyperarousal, avoidance, and intrusion) in cancer patients who are not in active treatment. A secondary aim involved evaluating the effectiveness of NET in reducing symptoms of anxiety and depression[6] in cancer patients who are not in active treatment.

Methods

Design[7]

This research adopted a naturalistic, mixed-method, explanatory sequential measurement single case study design (SCD)[8] which allowed the analysis and interpretation of change at the individual level. Once the series of single case studies was completed, within-case and cross-case analyses were conducted. SCDs' aim is to measure change occurring in the individual by comparing three phases: a non-treatment baseline phase (A), and intervention phase (B), and a follow-up phase (FU) (Parsonson & Baer, 1986). An AB design was chosen as it was considered the most appropriate design for this study (Barker et al., 2015).

Although there is consensus on the need for replication in single case study designs, a gold standard for the number of replications needed to draw a conclusion from the experiment has not yet been established (Kratochwill et al., 2013).

[5] See Extended Literature Review for further aims (results for them are included in the Extended Paper)
[6] See Extended Literature Review for further information on anxiety and depression in cancer
[7] See Extended Methods for information on Epistemological Position
[8] See Extended Methods for further information on SCD

However, a minimum of three replications is considered crucial to increase confidence that the findings demonstrate a functional relation between the intervention and the outcome (Kratochwill & Levin, 2014).

Participants

Participants were invited to take part in the study if they met the following inclusion criteria:

1. 18 years old or over.
2. Diagnosed with cancer in adulthood.
3. Able to provide informed consent.
4. Able to communicate verbally and speak English.
5. Not in active treatment (at any stage post-treatment).
6. Suffer from symptoms of traumatic stress caused or triggered by the cancer experience. A diagnosis of PTSD was not required.
7. Any cancer.

Participants were recruited with the support of Clinical Psychologists working in cancer services across Nottinghamshire and Lincolnshire (United Kingdom).

Measures

The design collected repeated weekly outcome measurements using the PTSD Checklist Civilian (PCL-C; Weathers et al., 1994) and the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983). The PCL-C explores items related to individuals' past stressful experiences using a 17-item self-report checklist (Weathers et al., 1994). The PCL-C has been widely used in cancer research (e.g., DuHamel et al., 2010; Lleras de Frutos et al., 2020). The PCL-C has shown good internal consistency (Cronbach's alpha >.75) (Wilkins et al., 2011) and good test-retest reliability with scores ranging from 0.68 and 0.92 (Hahn et al., 2015). Scores above 29 are indicative of clinical concerns. The HADS is the most extensively studied mood scale in cancer services (Mitchell et al., 2010). It is a fourteen item self-report measure of anxiety and depression that has been demonstrated to be psychometrically robust showing good internal consistency (Anxiety Cronbach's

alpha = .83; Depression Cronbach's alpha = .82) (Bjelland et al., 2002) and good test-retest reliability (Anxiety r = .82; Depression r = .52) (Martin & Thompson, 2002). Scores of 8 and above on each subscale are indicative of clinical concerns.

The feasibility and acceptability of NET and participants' view of the nature of change and why change occurred was investigated through the use of an adapted version of the Elliot and colleagues' *Change Interview* (2001; Appendix F). The adapted version of the Change Interview was conducted by an external researcher. The interviews were audio recorded and their recordings were transcribed and then analysed.

Procedure[9]

The study was sponsored by the University of Nottingham and approved by the North West – Liverpool Central Research Ethics Committee and the Health Research Authority (HRA) within the NHS. All participants gave informed consent before taking part in the study. Participants were informed that they could withdraw from the study at any point. All identifiable information was anonymised to ensure participants' confidentiality.

Three baseline measures were taken at three different points in time (weekly). Although establishing a stable baseline is the preferred standard in SCD methodologies, this was not ethically possible in this study. Therefore, three baseline measures were taken to minimise participants' burden.

Participants were offered circa twelve 60-90-minute sessions of NET depending on needs. Sessions were conducted on a weekly basis. The NET sessions included a psychoeducation session, a session focused on developing a lifeline, several sessions focused on narration and re-narration of trauma events (exposure and habituation), and a final session where a second lifeline was relayed (post-intervention). The first author (DD) was the therapist and received one-hour weekly supervision by a clinical supervisor (CY, fourth author) with experience delivering NET. The therapist kept reflective and clinical process notes. All sessions

[9] See Extended Methods for further information about procedure (e.g., recruitment)

were audio recorded to assess for treatment fidelity using adherence scales devised by the second author (TS; Appendix G), these scales were informed by the NET manual (Schauer et al., 2011). CY used the scales to assess treatment fidelity.

Two follow ups were completed after the intervention at two time points, one month and two months after the intervention ended. The Change Interview (Elliot et al., 2001) was completed at the first follow-up time point.

Participants were offered either face-to-face or online appointments depending on their needs and preferences.

Analysis

The What Works Clearinghouse (Kratochwill et al., 2010) assembled a panel of experts which established a set of guidelines to support researchers to conduct SCDs. According to these guidelines, the analysis should begin with a visual analysis of the data collected to determine whether there is a functional relation between the intervention and the outcome. Then, the visual analysis should be supplemented with quantitative analysis which may involve the analysis of the magnitude of the intervention effect. These guidelines informed our analysis strategy. Indeed, quantitative analyses including the calculation of effect sizes through the TAU-U (Parker et al., 2011), and the calculation of Reliable Change Index (RCI) and Clinically Significant Change (CSC; Jacobson & Truax, 1992) methods were adopted to supplement our visual analysis.

The primary data available in single case studies are multiple measures of a participant's target behaviour prior to, during, and after a clinical intervention. In evaluating single case data, visual inspection remains the most viable and long-practice strategy as it can simultaneously detect curvilinear trends and repeating patterns in the data set (Parsonson & Bear, 1986). Visual analysis is used to systematically analyse changes within-and-between phases (baseline, intervention, follow-ups) (Lane & Gast, 2014). This study focused on plotting linear trends in the baseline and intervention phases with the aim to identify changes in outcomes, and draw inferences on whether such changes can be associated with the individual engaging in the intervention. With regard to Type I errors, researchers have argued

that the likelihood of inferring a treatment effect via visual analysis when none exists is smaller compared with the conventionally accepted Type I error rate of 0.05 (Baer, 1977; Wolfe et al., 2018). However, this may be different when the data is highly variable (see Matyas & Greenwood, 1990).

As visual analysis can be susceptible to observer bias (Lenz, 2013), it is recommended that it is used alongside other statistical methods including effect sizes (Brossart et al., 2018; Kratochwill et al., 2010). Given the lack of extended baseline, the Tau-U test (Parker et al., 2011) was applied to control for potential trends in the baseline and to calculate effect sizes. Vannest & Vinci (2015; p. 408) recommended the following benchmarks for TAU-U: “a 0.20 improvement may be considered a small change, 0.20 to 0.60 a moderate change, 0.60 to 0.80 a large change, and above 0.80 a large to very large change”. Visual analysis and effect size indices were used to evaluate whether the intervention affected participants’ symptoms of traumatic stress using the PCL-C, which addressed the primary aim, and their scores of anxiety and depression using the HADS which addressed the secondary aim[10].

RCI and CSC (Jacobson & Truax, 1992) were calculated to assess change occurring at the individual level (Busch et al., 2011). RCI and CSC statistics are normally calculated to assess whether change has been found pre-and-post intervention, and whether this change has occurred due to real change or to chance variation (Ferguson et al., 2002)[11].

Results

Sample characteristics

Four participants were recruited for the purpose of the study (age range: 31 – 75, mean age: 49), all white British women. The primary concern reported by participants was ‘experiencing post-traumatic-stress symptoms as a result of having had cancer’. Most participants described the cancer journey as a precipitating event, as it “triggered” memories from past traumatic events (e.g., being sexually assaulted

[10] See Extended Analysis for further information on visual analysis and Tau-U
[11] See Extended Analysis for further information on RCI and CSC analyses

by a doctor when in their teen years). Participants' demographics are listed below in Table 4.

Table 4

Participant Demographics

Demographics	**Participant A (Pseudonym: Blake)**	**Participant B (Pseudonym: Kathryn)**	**Participant C (Pseudonym: Margaret)**	**Participant D (Pseudonym: Elizabeth)**
Age (years)	58	31	32	75
Occupation	Self-employed	Unemployed	Employed	Retired
Marital Status	Married	Single but cohabitating with partner	Single but cohabitating with partner	Married
Cancer Type	Breast	Thyroid	Breast	Ovarian
Time Since Active Treatment	Four years	One year	One year	Less than one year
Intervention modality	Online	Face-to-Face	Face-to-Face	Online

All participants completed the intervention and follow-ups. The number of sessions completed ranged between eight (Margaret) and eleven (Elizabeth). Blake, Margaret, and Kathryn explored all events on their lifelines (both positive and negative), whilst Elizabeth was supported in selecting the stones that were the most associated with high levels of psychological distress, this was jointly decided as the number of stones Elizabeth had placed on her lifeline would have exceeded the number of sessions available.

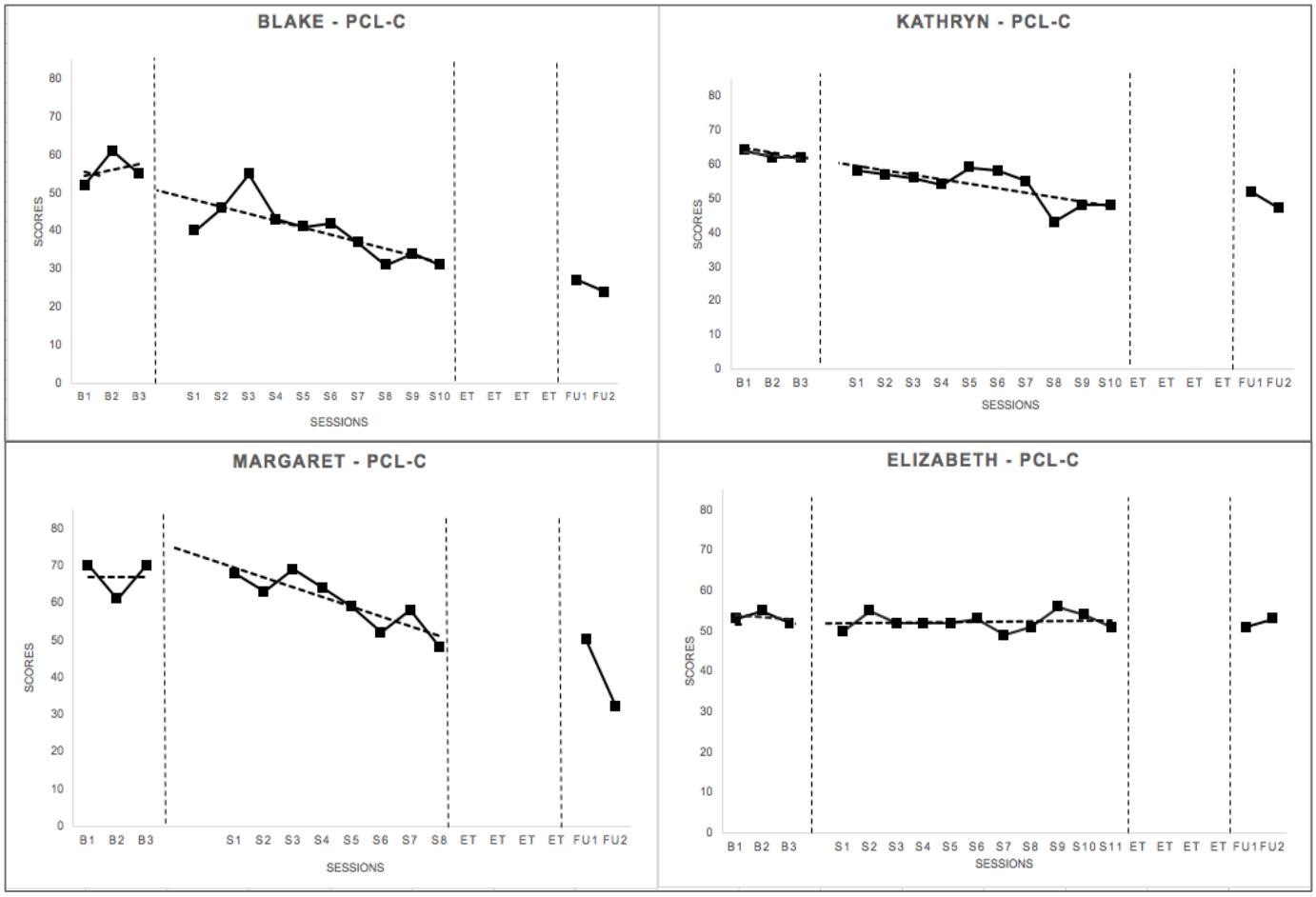
Visual Analysis

Visual analysis was carried out for the time series data collected from the repeated PCL-C (Weathers et al., 1994) and HADS (Zigmond & Snaith, 1983). The data collected were graphed and visually analysed for change across time.

Visual analysis showed a stable baseline trend for Margaret, Kathryn, and Elizabeth, and an upward and therefore deteriorating baseline trend for Blake. Visual analysis showed a downward and therefore improving intervention trend for Blake, Margaret, and Kathryn, and no change for Elizabeth as shown by the absence of a trend. All participants were in the “high severity” range (45 to 85) prior to the intervention. At post intervention, Blake was in the “moderate to moderately high severity” range (30-44), whilst Margaret, Kathryn, and Elizabeth were in the “high severity” range. At both the first and second follow-up time points, Blake was below the clinical range, whilst Kathryn was on the lower end of the “high severity” range. At the first follow-up time point, Margaret was on the lower end of the “high severity” range, whilst she was on the lower end of the “moderate to moderately high severity” range by the second follow-up. Elizabeth continued to score in the “high severity” range throughout.

Figure 2

PCL-C Trendline Graphs



Note. B = Baseline, S = Session, ET = End of Treatment, FU = Follow-Up. Session measures were collected at the beginning of each session.

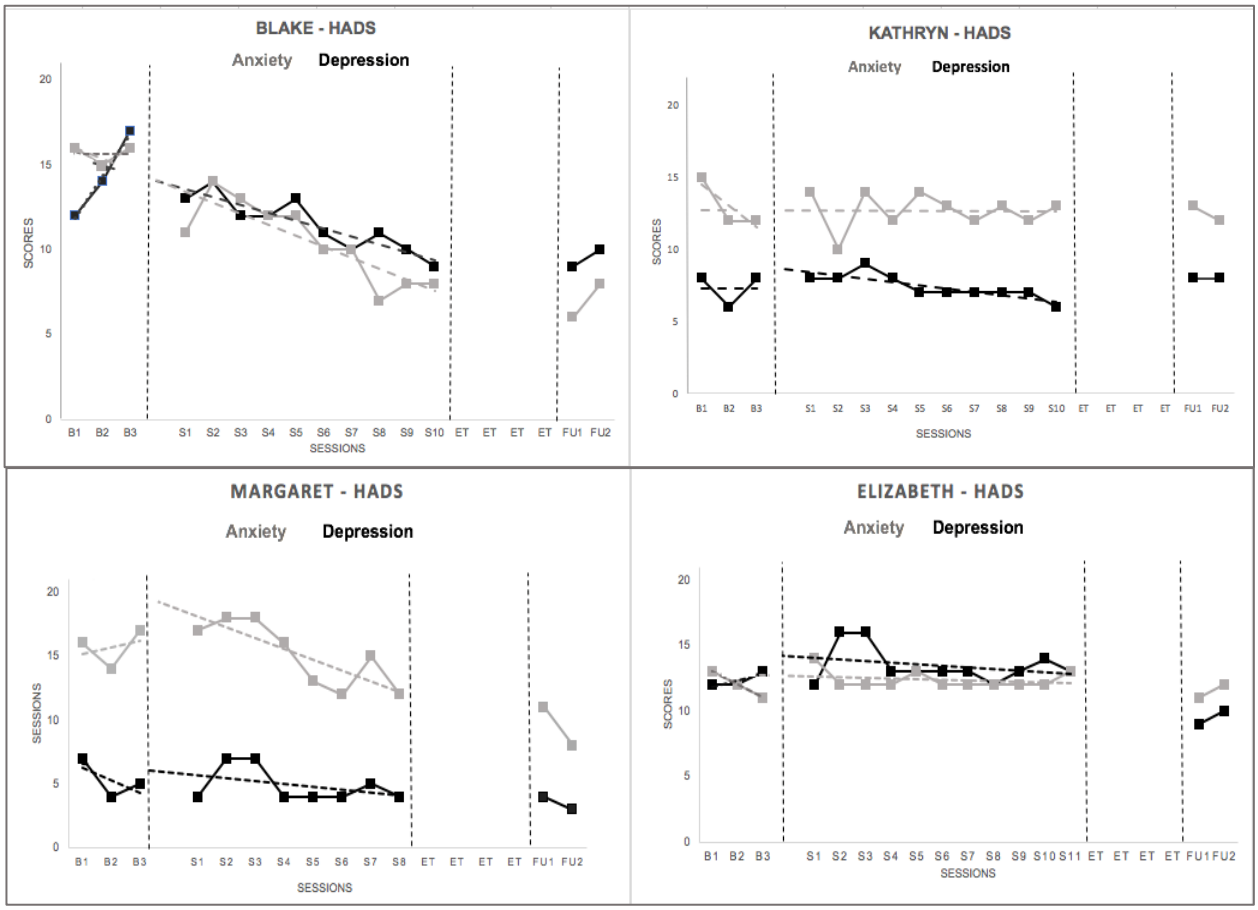
In terms of anxiety, visual analysis showed a stable baseline trend for Blake, a slight upward and therefore deteriorating baseline trend for Margaret, and a slight downward and therefore improving baseline trend for Kathryn and Elizabeth. Visual analysis showed an improving intervention trend for Blake and Margaret, and no change for two participants Kathryn and Elizabeth as shown by the absence of a trend. All participants were in the “abnormal” range (11-21) prior to the intervention. At post intervention and at the first follow-up time point, Blake was on the lower end of the “borderline abnormal” range (8-10), whilst Kathryn, Margaret, and Elizabeth were still in the abnormal one. At the second follow-up time point, Blake and Margaret were both on the lower end of the “borderline abnormal” range, whilst Kathryn and Elizabeth remained in the “abnormal” range.

In terms of depression, visual analysis showed an upward and therefore deteriorating baseline trend for Blake, a slight downward and therefore improving baseline trend for Margaret, and a stable baseline trend for Kathryn and Elizabeth. Visual analysis also showed an improving intervention trend for all participants. However, it is worth noting that Margaret was below the clinical range at baseline, throughout the intervention, and at both follow-up time points. Prior to the intervention, Kathryn was on the lower end of the “borderline abnormal” range (8-10), whilst Blake and Elizabeth were in the “abnormal” range (11-21). At post intervention, Kathryn was below the clinical range, whilst Blake was on the lower end of the “borderline abnormal” range and Elizabeth in the “abnormal” range. At both follow-up time points, Blake, Kathryn and Elizabeth were all in the “borderline abnormal” range.

All baseline trends were not found significant (see TAU-U calculations below) which suggests that baseline levels of anxiety and depression were overall stable, and the intervention phases did not need adjusting for baseline trends (Fingerhut et al., 2021; Tarlow, 2017).

Figure 3

HADS Trendline Graph



Note. B = Baseline, S = Session, ET = End of Treatment, FU = Follow-Up. Session measures were collected at the beginning of each session.

Effect sizes

TAU-U $_{A \text{ VS } B}$ was calculated for all participants on the PCL-C and HADS as none of the baseline trends were found to be statistically significant ($p<0.05$) (Table 5 and 6). Controlling for baseline trends in the absence of trend significance can lead to neglecting “true” variance from the treatment effect (Fingerhut et al., 2021; Tarlow, 2017). Effect sizes for traumatic stress as assessed by the PCL-C ranged between moderate and very large at post intervention for all participants which indicated effects in the desired direction (improvement). Effect sizes for depression as assessed by the HADS – Depression subscale ranged between moderate to large for all participants which indicated effects in the desired direction (improvement), it is again worth noting that Margaret was below the clinical cut-off throughout. Effect sizes for anxiety as assessed by the HADS – Anxiety subscale ranged between

moderate to very large for Blake and Elizabeth which indicates effect in the desired direction (improvement), but no change was detected for Kathryn and Margaret.

Table 5

Baseline Trends

Participant	PCL-C		HADS Depression		HADS Anxiety	
	Baseline Trend τ	Baseline Trent *p*	Baseline Trend τ	Baseline Trent *p*	Baseline Trend τ	Baseline Trent *p*
Blake	0.333	1.000	1.000	0.296	0.000	1.460
Kathryn	0.816	0.540	0.000	1.460	0.816.	0.540
Margaret	0.333	1.000	0.333	1.000	0.333	1.000
Elizabeth	0.000	1.460	0.816	0.540	-1.000	0.296

Table 6

Effect Sizes

Participant	**PCL-C**		**HADS Depression**		**HADS Anxiety**	
	Tau-U A vs B	**P-value**	**Tau-U**	**P-value**	**Tau-U**	**P-value**
Blake	-0.9	0.023*	-0.7	0.076	-1	0.011*
Kathryn	-1.0	0.012*	-0.03	0.93	0	1
Margaret	-0.6	0.102	-0.25	0.54	-0.08	0.83
Elizabeth	-0.36	0.35	0.57	0.14	-0.3	0.39

Note. Tau-U $_{A\ vs\ B}$ indicates a Tau-U with no baseline trend correction. Effect sizes were calculated using the following reference points: baseline phase vs intervention phase. On the PCL-C and HADS (Depression and Anxiety) a negative sign indicates effect in the desired direction (symptoms reduction/improvement).

Reliable Change Index and Clinically Significant Change

RCI and CSC analyses were completed on all measures at several time points, including pre intervention (first baseline time point), post intervention, and at follow-up points (one month and two months after the end of the intervention). RCI and CSC were calculated using the following reference points: baseline 1 vs post-intervention, baseline 1 vs follow-up 1, baseline 1 vs follow-up 2.

Table 5 presents all RCI and CSC analyses. Blake, Kathryn, and Margaret demonstrated reliable change on the PCL-C at all time points (post-intervention, and both follow-ups) which is indicative of reliable improvement. Blake also showed clinically significant improvement at the first and second follow-up time points. None of the participants demonstrated reliable change on the HADS-Depression subscale. Blake demonstrated reliable change on the HADS-Anxiety subscale at the post intervention and second follow-up time points, and clinically significant change on the first follow-up time point. Margaret demonstrated reliable change on the second follow-up time point, whilst Kathryn and Elizabeth demonstrated no change.

Table 7

RCI and CSC Analyses

Participant	Time-points	PCL-C	HADS	
			Depression	Anxiety
Blake	B1	52	12	16
	Post	31^{R+}	9	8^{R+}
	FU-1	27^{RC+}	9	6^{RC+}
	FU-2	24^{RC+}	10	8^{R+}
Kathryn	B1	64	8	15
	Post	48^{R+}	6	13
	FU-1	52^{R+}	8	13
	FU-2	47^{R+}	8	12
Margaret	B1	70	7	16
	Post	48^{R+}	4	12
	FU-1	50^{R+}	4	11
	FU-2	32^{R+}	3	8^{R+}
Elizabeth	B1	53	12	12
	Post	51	13	13
	FU-1	51	9	11
	FU-2	53	10	12

Note. RCI and CSC were calculated using clinical and non-clinical norms in published literature. ^{R} denotes Reliable Change. ^{C} denotes Clinically Significant Change. + or – indicate improvement or deterioration, respectively. B1 = baseline 1, FU = follow-up

Change Interviews[12]

All participants agreed to take part in and completed the change interviews at the first follow-up time point. Although participants found NET and its process *"very hard"* and *"difficult"*, they felt it was very helpful and they all agreed they would recommend it to others *("It's been a very valuable experience and I would love more of it. I'd love for more people to have more of it"*– Elizabeth). Blake felt enough time had been allocated for the intervention, whilst the others felt they would have liked more. However, they acknowledged that wanting more time was not necessarily related to wanting more NET but to struggling to bring therapy to an end (*"I think it's an attachment issue, I get attached to certain things"* – Margaret). All participants described having experienced change as a result of having engaged in NET,

[12] See Extended Results for Change Interview data

including reduction in flashbacks and increased sense of hope and confidence in their resilience *("When I am triggered by something, I still have the awful feeling, … but I know it's going to pass"* – Elizabeth). None of the participants suggested changes to the protocol to fit with cancer patients' needs. Kathryn and Elizabeth reflected on how having had the opportunity to process all events on their lifeline was important to then process their cancer experience ("*It was perfect for me because I needed to also focus on other things, I needed to process other things properly other than then just the cancer."* - Kathryn).

Discussion

The study primary aim was to investigate the feasibility, acceptability, and potential effectiveness of NET in reducing symptoms of traumatic stress in cancer patients not in active treatment. Secondary aim involved evaluating the effectiveness of NET in reducing symptoms of anxiety and depression in cancer patients who are not in active treatment.

The findings demonstrated a reduction in symptoms of traumatic stress at Post intervention for three participants and no change for one participant. Where improvement occurred, it was also maintained at both follow-up time points which is in line with previous research on NET (Lely et al., 2019; Raghuraman et al., 2020; Robjant & Fazel, 2010; Siehl et al., 2021; Wright et al., 2020). The findings provide preliminary evidence for the effectiveness of NET for this client group, as SCD guidelines suggest that at least three demonstrations of effect are needed to draw conclusions about treatment effectiveness (Kratochwill et al., 2010). Differences in effectiveness amongst participants could be explained in terms of length of time without having received cancer treatment (e.g., Blake having showed the most improvement). Trauma theorists and mental health professionals have often raised concerns around patients' "readiness" for trauma-focused interventions (Cohen et al., 2011). Some have argued that using exposure-based components (e.g., gradual exposure, trauma narration) may not be appropriate when the individual is still exposed to repeated traumas in real life. When the brain is "attacked" this way, it is not fully able to assimilate or process the event, and therefore one could argue that the individual may also be less likely to benefit from trauma-focused interventions

(Herman, 2015). While there is some evidence that has showed how NET can be safely and effectively used in situations that remain unstable (Orang et al., 2018), ongoing stressors (e.g., follow-up scans and appointments, fear of recurrence) may have still interfered with participants' ability to fully engage with trauma processing.

In terms of depression, the findings demonstrated no change for all participants, which is in line with previous research on NET. Effect sizes for symptoms of depression ranged between small to medium and NET only outperformed non-active treatment (Lely et al., 2019; Raguraman et al., 2020; Robjant & Fazel, 2010; Siehl et al., 2021; Wright et al., 2020). Whilst in terms of anxiety, Blake was the only participant who experienced reliable and clinically significant change which could again be related to the length of time without having received cancer treatment. It could also be argued that NET is specifically tailored to reduce symptoms of traumatic stress and therefore may be less effective in reducing comorbid symptoms.

NET's feasibility and acceptability for this client group was assessed through the Change Interview (Elliot et al., 2001). All participants described having benefitted from NET and agreed they would recommend it to others. There were no dropouts which is in line with previous research on NET, but also with previous research on cancer patients wanting psychosocial support for their cancer-related emotional and social distress[1] (Leano et al., 2019).

Study Limitations[13]

To the authors' knowledge, this is the first exploratory study which investigated the application of NET to treat cancer patients not in active treatment in the UK. Although the findings are promising, the problem of generalisability in case study research is widely acknowledged (McLeod, 2010). Although participants described having experienced change as a result of engaging in NET, other factors may have also contributed to change. For instance, it is hard to establish whether change was purely influenced by the intervention or the individual therapist factors (e.g., the therapeutic alliance). Further research may want to examine the application

[13] See Extended Discussion for further Study Limitations

of NET for this client group by using other study designs (e.g., uncontrolled trials, Randomised Controlled Trials). The study only recruited white British women which is considered a limitation; women are often over represented in the cancer-related literature (Cordova et al., 2017).

Clinical Implications[14]

As a brief trauma-focused intervention, NET might be suitable for use in psycho-oncology services which might lack resources and/or are not commissioned to offer long-term psychosocial support. As the NET protocol is highly accessible, it could be argued that its components and methods could easily be disseminated within services by offering a short training programme and clinical supervision to professionals from other disciplines (e.g., occupational therapists, cancer nurses). This can contribute to achieve the aims set out by the NHS Long Term Plan in 2019 (including providing cancer patients with a personalised care plan which must take into account their psychological needs).

There were no differences between delivering NET online or face to face as demonstrated by having obtained the most change and no change through the online delivery method. Therefore, NET could be offered either online or face to face depending on individuals' needs and preferences.

Conclusion

In conclusion, it appears that NET can be an effective intervention to reduce symptoms of traumatic stress in cancer patients not in active treatment, but not anxiety and depression symptoms. As a time-limited and structured intervention, the benefits of NET are clear. Not only did participants find it feasible and acceptable, but its accessibility makes it easy to implement within services.

[14] See Extended Discussion for further Clinical Implications

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed..).* American Psychiatry Association

Baer, D. M. (1977). “Perhaps it would be better not to know everything. *Journal of Applied Behavior Analysis*, *10*(1), 167-172. https://doi.org/10.1901/jaba.1977.10-167

Barker, C., Pistrang, N., & Elliott, R. (2015). *Research methods in clinical psychology: An introduction for students and practitioners*. John Wiley & Sons.

Bjelland, I., Dahl, A. A., Haug, T. T., & Neckelmann, D. (2002). The validity of the Hospital Anxiety and Depression Scale: an updated literature review. *Journal of Psychosomatic Research*, *52*(2), 69-77. https://doi.org/10.1016/S0022-3999(01)00296-3

Busch, A. M., Wagener, T. L., Gregor, K. L., Ring, K. T., & Borrelli, B. (2011). Utilizing reliable and clinically significant change criteria to assess for the development of depression during smoking cessation treatment: The importance of tracking idiographic change. *Addictive Behaviors*, *36*(12), 1228-1232. https://doi.org/10.1016/j.addbeh.2011.07.031

Chen, A. M., Hsu, S., Felix, C., Garst, J., & Yoshizaki, T. (2017). Effect of psychosocial distress on outcome for head and neck cancer patients undergoing radiation. *The Laryngoscope, 128*(3), 641-645. https://doi.org/10.1002/lary.26751

Cohen, J. A., & Mannarino, A. P. (2017). Evidence based intervention: Trauma-focused cognitive behavioral therapy for children and families. In *Parenting and family processes in child maltreatment and intervention* (pp. 91-105). Springer, Cham. https://doi.org/10.1007/978-3-319-40920-7_6

Cordova, M. J., Riba, M. B., & Spiegel, D. (2017). Post-traumatic stress disorder and cancer. *The Lancet Psychiatry*, *4*(4), 330-338. https://doi.org/10.1016/S2215-0366(17)30014-7

D'Errico, D., Schröder, T., & Gresswell, M. (2022). Therapist-led interventions for the treatment of traumatic stress symptoms in cancer survivors: A systematic literature review. *Psycho‐Oncology*, *31*(7), 1057-1075. https://doi.org/10.1002/pon.5964

DuHamel, K. N., Mosher, C. E., Winkel, G., Labay, L. E., Rini, C., Meschian, Y. M., ... & Redd, W. H. (2010). Randomized clinical trial of telephone-administered cognitive-behavioral therapy to reduce post-traumatic stress disorder and distress symptoms after hematopoietic stem-cell transplantation. *Journal of Clinical Oncology*, *28*(23), 3754. https://doi.org/10.1200/JCO.2009.26.8722

Elliott, R., Slatick, E., & Urman, M. (2001). Qualitative Change Process Research on Psychotherapy: Alternative Strategies. *Psychologische Beitrage, 43*(3), 69-111. https://psycnet.apa.org/record/2003-99376-005

Ferguson, R. J., Robinson, A. B., & Splaine, M. (2002). Use of the reliable change index to evaluate clinical significance in SF-36 outcomes. *Quality of Life Research*, *11*(6), 509-516. https://doi.org/10.1023/A:1016350431190

Janoff-Bulman, R. (1992). *Shattered assumptions*. Simon and Schuster.

Grassi, L., Spiegel, D., & Riba, M. (2017). Advancing psychosocial care in cancer patients. *F1000Research*, *6*. https://doi.org/10.12688/f1000research.11902.1

Hahn, E. E., Hays, R. D., Kahn, K. L., Litwin, M. S., & Ganz, P. A. (2015). Post-traumatic stress symptoms in cancer survivors: relationship to the impact of cancer scale and other associated risk factors. *Psycho‐Oncology*, *24*(6), 643-652. https://doi.org/10.1002/pon.3623

Herman, J. L. (2015). *Trauma and recovery: The aftermath of violence--from domestic abuse to political terror*. Hachette.

Jacobson, N. S., & Truax, P. (1992). Clinical significance: a statistical approach to defining meaningful change in psychotherapy research. In A. E. Kazdin (Ed.), *Methodological Issues & Strategies in Clinical Research* (p. 631–648). American Psychological Association. https://doi.org/10.1037/10109-042

Kangas, M., Henry, J. L., & Bryant, R. A. (2002). Posttraumatic stress disorder following cancer: A conceptual and empirical review. *Clinical Psychology Review*, *22*(4), 499-524. https://doi.org/10.1016/S0272-7358(01)00118-0

Kissane, D. W. (2014). Unrecognised and untreated depression in cancer care. The Lancet Psychiatry, 1(5), 320-321. https://doi.org/10.1016.S2215-0366(14)70345-1

Kratochwill, T. R., Hitchcock, J., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M., & Shadish, W. R. (2010). *Single-case designs technical documentation*. What works clearinghouse. https://eric.ed.gov/?id=ED510743

Kratochwill, T. R., Hitchcock, J. H., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M., & Shadish, W. R. (2013). Single-case intervention research design standards. *Remedial and Special Education*, *34*(1), 26-38. https://doi.org/10.1177/0741932512452794

Kratochwill, T. R., & Levin, J. R. (Eds.). (2014). *Enhancing the scientific credibility of single-case intervention research: Randomization to the rescue.* In T. R. Kratochwill & J. R. Levin (Eds.), *School psychology series. Single-case intervention research: Methodological and statistical advances* (p. 53–89). American Psychological Association. https://doi.org/10.1037/14376-003

Lambert, J. E., & Alhasson, O. M. (2015). Trauma-focused therapy for refugees: Meta-analytic findings. *Journal of Counseling Psychology*, *62*(1), 28–37. https://doi.org/10.1037/cou0000048

Lane, J. D., & Gast, D. L. (2014). Visual analysis in single case experimental design studies: Brief review and guidelines. *Neuropsychological rehabilitation*, *24*(3-4), 445-463. https://doi.org/10.1080/09602011.2013.815636

Leano, A., Korman, M. B., Goldberg, L., & Ellis, J. (2019). Are we missing PTSD in our patients with cancer? Part I. *Canadian Oncology Nursing Journal*, *29*(2), 141. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6516338/

Lely, J. C., Smid, G. E., Jongedijk, R. A., W. Knipscheer, J., & Kleber, R. J. (2019). The effectiveness of narrative exposure therapy: A review, meta-analysis and meta-regression analysis. *European journal of psychotraumatology*, *10*(1), 1550344. https://doi.org/10.1080/20008198.2018.1550344

Lleras de Frutos, M., Medina, J. C., Vives, J., Casellas-Grau, A., Marzo, J. L., Borràs, J. M., & Ochoa-Arnedo, C. (2020). Video conference vs face-to-face group psychotherapy for distressed cancer survivors: A randomized controlled trial. *Psycho-Oncology*, *29*(12), 1995-2003. https://doi.org/10.1002/pon.5457

Martin, C. R., & Thompson, D. R. (2002). The hospital anxiety and depression scale in patients undergoing peritoneal dialysis: internal and test–retest reliability. *Clinical Effectiveness in Nursing*, *6*(2), 78-80. https://doi.org/10.1016/S1361-9004(02)00029-8

Matyas, T. A., & Greenwood, K. M. (1990). Visual analysis of single-case time series: Effects of variability, serial dependence, and magnitude of intervention effects. *Journal of Applied Behavior Analysis*, *23*(3), 341-351. https://doi.org/10.1901/jaba.1990.23-341

McLeod, J. (2010). *Case study research in counselling and psychotherapy*. Sage Publications.

Mitchell, A. J., Meader, N., & Symonds, P. (2010). Diagnostic validity of the Hospital Anxiety and Depression Scale (HADS) in cancer and palliative settings: a meta-analysis. *Journal of Affective Disorders*, *126*(3), 335-348. https://doi.org/10.1016/j.jad.2010.01.067

Mørkved, N., Hartmann, K., Aarsheim, L. M., Holen, D., Milde, A. M., Bomyea, J., & Thorp, S. R. (2014). A comparison of Narrative Exposure Therapy and Prolonged Exposure therapy for PTSD. *Clinical Psychology Review, 34*(6), 453-467. https://doi.org/10.1016/j.cpr.2014.06.005

National Institute for Health and Care Excellence. (2018). *Post-traumatic stress disorder* [NICE Guideline No. 116]. https://www.nice.org.uk/guidance/ng116

Neuner, F., Schauer, M., Klaschik, C., Karunakara, U., & Elbert, T. (2004). A comparison of narrative exposure therapy, supportive counseling, and psychoeducation for treating posttraumatic stress disorder in an african refugee settlement. *Journal of consulting and clinical psychology*, *72*(4), 579. https://doi.org/10.1037/0022-006X.72.4.579

NHS England. (2019). *NHS Long Term Plan*. NHS England https://www.england.nhs.uk/long-term-plan/

Orang, T., Ayoughi, S., Moran, J. K., Ghaffari, H., Mostafavi, S., Rasoulian, M., & Elbert, T. (2018). The efficacy of narrative exposure therapy in a sample of Iranian women exposed to ongoing intimate partner violence—a randomized controlled trial. *Clinical Psychology & Psychotherapy*, *25*(6), 827-841. https://doi.org/10.1002/cpp.2318

Parker, R. I., Vannest, K. J., Davis, J. L., & Sauber, S. B. (2011). Combining nonoverlap and trend for single-case research: Tau-U. *Behavior Therapy, 42*(2), 284-299. https://doi.org/10.1016/j.beth.2010.08.006

Parsonson, B. S., & Baer, D. M. (1986). The graphic analysis of data. In J. S. Bailey & M. R. Burch (Eds.), *Research methods in applied behavior analysis* (pp. 157-186). Springer

Raghuraman, S., Stuttard, N., & Hunt, N. (2021). Evaluating narrative exposure therapy for post-traumatic stress disorder and depression symptoms: A meta-analysis of the evidence base. *Clinical Psychology & Psychotherapy*, *28*(1), 1-23. https://doi.org/10.1002/cpp.2486

Robjant, K., & Fazel, M. (2010). The emerging evidence for Narrative Exposure Therapy: A review. *Clinical Psychology Review*, *30*(8), 1030–1039. https://doi.org/10.1016/j.cpr.2010.07.004

Schauer, M., Neuner, F., & Elbert, T. (2011). *Narrative exposure therapy: A short-term treatment for traumatic stress disorders*. Hogrefe Publishing.

Siehl, S., Robjant, K., & Crombach, A. (2021). Systematic review and meta-analyses of the long-term efficacy of narrative exposure therapy for adults, children and perpetrators. *Psychotherapy Research*, *31*(6), 695-710. https://doi.org/10.1080/10503307.2020.1847345

Vannest, K. J., & Ninci, J. (2015). Evaluating intervention effects in single-case research designs. *Journal of Counseling & Development*, *93*(4), 403-411. https://doi.org/10.1002/jcad.12038

Weathers, F. W., Litz, B. T., Huska, J. A., & Keane, T. M. (1994). The PTSD Checklist-Civilian Version (PCL-C) for DSM-IV. Boston: National Center for PTSD. *Behavioral Science Division. VA Boston Healthcare System*.

Wilkins, K. C., Lang, A. J., & Norman, S. B. (2011). Synthesis of the psychometric properties of the PTSD checklist (PCL) military, civilian, and specific versions. *Depression and anxiety*, *28*(7), 596-606. https://doi.org/10.1002/da.20837

Wolfe, K., Seaman, M. A., Drasgow, E., & Sherlock, P. (2018). An evaluation of the agreement between the conservative dual-criterion method and expert visual analysis. *Journal of Applied Behavior Analysis*, *51*(2), 345-351. https://doi.org/10.1002/jaba.453

Wright, A., Reisig, A., & Cullen, B. (2020). Efficacy and cultural adaptations of narrative exposure therapy for trauma-related outcomes in refugees/asylum-seekers: A systematic review and meta-analysis. *Journal of Behavioral and Cognitive Therapy*, *30*(4), 301-314. https://doi.org/10.1016/j.jbct.2020.10.003

Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica, 67*(6), 361-370. https://doi.org/10.1111/j.1600-0447.1983.tb09716.x

EXTENDED PAPER*

* The term ‘cancer survivors’ is used to refer to cancer patients not in active/curative treatment

Extended Literature Review

1.1 Background on Cancer

Cancer is often associated with chemotherapy, hair loss, nausea, mortality, and other physical symptoms (Leano et al., 2019). Cancer can be so overwhelming that many individuals struggle to even say the “C word” (Wess, 2007). Cancer Research UK has predicted that in the next twenty years, the incidence of cancer worldwide will increase to 27.5 million new cancer cases per year (https://www.cancerresearchuk.org/). Although this will consequently increase the number of cancer-related deaths, recent improvement in earlier diagnosis and cancer treatment has led to an overall increase in the number of cancer survivors too (World Health Organisation, 2017, as cited in Grassi et al., 2017). Indeed, cancer survival rates have doubled in the last forty years in the United Kingdom (https://www.cancerresearchuk.org/).

Most people’s journey in cancer begins with the identification of some worrying symptoms, such as a lump that is rapidly increasing in size somewhere on their body, blood in their urine and/or faeces, unexplained weight loss, and/or a persistent cough (National Health Service [NHS], 2019). Screening procedures and clinical examinations are then carried out to establish whether the cancer is present (Cordova et al., 2017). During this time, people normally and understandably experience high levels of anxiety (Brocken et al., 2012).

Uncertainty, understanding complex medical information, and identifying suitable treatments can make the early period of the cancer journey overwhelming (Cordova et al., 2017). Cancer treatments usually involve prolonged and invasive procedures, including surgery, chemotherapy, radiation, and hormonal therapy which can all have severe side effects (e.g., pain, fatigue, hair loss, skin irritation, disfigurement, etc.) (Cordova et al., 2017). Those people who survive cancer face constant fear of recurrence, and enduring physical and emotional distress (Cordova & Andrykowski, 2003). Fear of recurrence in cancer survivors is often triggered by follow-up scans and appointments, and physical symptoms which are perceived by the individual as cancer related (Ghazali et al., 2013; Humphris et al., 2003; Vickberg, 2003). Cancer patients are often told by loved ones and professionals that

they should “stay strong and positive” and “fight the cancer”; this does not always match with how they are feeling and they might worry that by expressing fear or sadness they are being weak (Leano et al., 2019).

In 2004, NICE released guidelines on how to improve care for cancer patients. The guidelines acknowledged the burden of cancer not only on the individuals affected, but also on their families. As both cancer patients and their families may experience high levels of anxiety, the guidelines have highlighted the need to support them throughout their cancer journey. Health and social care professionals have been asked to assess each individual’s needs with the purpose to identify and establish appropriate care plans, and ensure access to physical, psychological, social, and spiritual care. From a psychological perspective, the guidelines recommend assessment of cancer patients’ psychological needs on a regular basis and to offer psychological support where appropriate. As the literature has demonstrated how the psychological needs of cancer patients are often either not recognised or dismissed, NICE guidelines (2004) have highlighted the need for healthcare professionals working in cancer services to be adequately trained and supervised to ensure support is always available. The guidelines have developed a four-level model of professional psychological assessment and intervention which should be implemented in every cancer service. Psychological support at Level One and Two should be provided by all healthcare professionals and involves providing cancer patients and their families with effective information, compassionate communication, and general psychological support (e.g., problem solving skills). Level Three and Four should be provided by trained and accredited mental health professionals (e.g., Psychiatrists, Clinical Psychologists) and involves providing cancer patients and their families with specialist psychological support (e.g., CBT). The level at which each cancer patient can be placed depends on their individual needs. In 2019, the NHS Long Term Plan further reinforced the need to assess all cancer patients and provide them with personalised care plans to promote their physical and psychological wellbeing.

1.1.1 Cancer Treatment and Survivorship

The number of cancer survivors continues to grow worldwide mostly due to the advances in early detection and treatment. Most cancer survivors describe experiencing post-treatment physical, cognitive, and psychological impairments as a result of cancer treatment (Miller et al., 2019). Some side effects and impairments are often acute and tend to reduce over time if supportive care is offered (e.g., psychological interventions, pain management), whilst others can become more persistent and chronic. The type of side effect and impairment experienced depends on cancer type and treatment, and patients' characteristics (e.g., comorbid physical illnesses, age, etc.) (van Leeuwen et al., 2018). Most common side effects described by cancer patients are fatigue, pain, emotional distress, sexual dysfunction, cardiomyopathies, and fertility impairments (Stanton et al., 2015).

In our study, participants' cancer types included breast cancer, ovarian cancer, and thyroid cancer. Further information about their treatment, survival rates, and side effects is presented below; this was collected from https://www.cancerresearchuk.org/.

Breast Cancer

Breast cancer develops when abnormal cells in the breast begin to grow and divide, this eventually forms a growth (a tumour). Breast cancer is the most common cancer type in the UK with around 55900 people being diagnosed every year. Women are more likely to be diagnosed with breast cancer, but men can be too. The main treatment options for breast cancer include surgery (mastectomy), chemotherapy, radiotherapy, hormonal therapy, targeted cancer drugs, and bone strengthening drugs. Survival rates are good overall especially if the cancer is diagnosed early. Most women (98%) will survive cancer for five years or more if it is diagnosed at Stage One, whilst 25% will survive if diagnosed at Stage Four (cancer is not curable but can be controlled with treatment). Recent studies have shown that around one-third of women who undergo surgery or radiotherapy, then develop persistent pain, cognitive impairments (e.g., forgetfulness, lack of concentration), and chronic fatigue (Pinto & de Azambuja, 201; Runowicz et al., 2016; Wang et al., 2018).

Ovarian Cancer

Ovarian cancer develops when abnormal cells in the ovary begin to grow and divide, this eventually leads to them forming a growth (a tumour). Around 7500 women are diagnosed with ovarian cancer every year in the UK, those who are more likely to be diagnosed are women aged between 75 and 79. The main treatment options for ovarian cancer include surgery and chemotherapy, this will depend on where the cancer is and how far it has spread. Survival depends on factors such as stage of cancer at point of diagnosis. Almost 95% of women will survive ovarian cancer for five years or more if it is diagnosed at Stage One, whilst circa 15% will survive five years it if it is diagnosed at Stage Four. The most common side effects experienced by survivors of ovarian cancer are fatigue, nausea and vomiting, and cognitive impairment (e.g., forgetfulness, lack of concentration).

Thyroid Cancer

Thyroid cancer develops when abnormal cells in the thyroid gland (which sits in the throat) start to divide and grow. Without treatment, the cancer cells will eventually surround healthy tissue and spread to other parts of the body. Thyroid cancer is rare; around 3900 people are diagnosed in the UK each year. Treatment options for thyroid cancer include surgery (thyroidectomy), radioactive iodine treatment, thyroid hormone therapy, targeted cancer drugs, external radiotherapy, and chemotherapy. The prevalence rate of thyroid cancer in women is double that for men, which means that the majority of thyroid cancer survivors are women. Survival will depend on the type and stage of thyroid cancer. Almost 90% of people who develop thyroid cancer survive for at least one year after diagnosis, almost 85% survive for five to ten years. Most patients who undergo surgery, will require hormone replacement therapy. Moreover, removing the thyroid gland can damage the underlying parathyroid glands which can create problems with calcium metabolism, and the larynx which can in turn lead to voice changes.

1.1.2 Psychosocial Needs of Cancer Survivors

As survival rates have increased throughout the years, more cancer survivors have reported a broad range of unmet psychosocial needs as a result of the side effects arising from cancer treatment. Many cancer survivors have reported

experiencing symptoms of depression and anxiety, fear of recurrence, uncertainty about the future, altered relationship, and impact on quality of life including changes in physical ability (Miroševič et al. 2019; Lisy et al., 2019). Research has suggested how identifying cancer survivors needs and providing appropriate aftercare may improve health outcomes, quality of life, and satisfaction with care (Lambert et al., 2012; Maguire et al., 2015). It has been suggested that one of the main barriers to addressing the unmet psychosocial needs of cancer survivors appears to be lack of funding (e.g., not enough psychologists hired in cancer services). The lack of funding often means that cancer survivors have to seek psychosocial support from charities (e.g., Macmillan) (Halpern et al., 2016). Other barriers include the prioritisation of the medical model over the psychosocial one. The controversy around the lack of equity between physical and mental health has been highlighted in the NHS England Parity of Esteem (2016) report which has showed how physical health is often prioritised over mental health (including in terms of resource allocation). The report highlighted how people who experience mental health difficulties are not treated with the same vigour as those treated for physical health concerns. It could be argued that this disparity is often experienced by cancer survivors who may be considered as "recovered" by physical health professionals, and therefore not signposted to psychological services for support around their cancer-related psychological and emotional problems (Grassi et al., 2017). The report highlighted the importance of promoting a person-centred approach when caring for people with mental health difficulties, which is in line with NICE guidelines for cancer (2004) and the aims of the more recent NHS Long Term Plan (2019).

1.2 Post-traumatic Stress Disorder

The Diagnostic and Statistical Manual of Mental Health Disorders 5th Edition (DSM-5; American Psychiatry Association [APA], 2013, p. 271) defined a traumatic event as "the exposure to actual or threatened death, serious injury or sexual violence". However, defining psychological trauma has proved challenging as what makes an event traumatic depends on how it is perceived by the individual. An event may be considered "traumatic" when it changes the individual's assumptions around their invulnerability and when it distorts their identity, making them more fragile and unstable (Khan, 1964; Perrotta, 2019). The traumatic event can be single (e.g., a

natural disaster) or repeated (e.g., domestic violence) (Heimann, 1975). It has been suggested that most adults will experience at least one traumatic event in their lifetime (Benjet et al., 2016). It is estimated that around 25-30% of people experiencing a traumatic event go on to develop Post Traumatic Stress Disorder (PTSD; APA, 2013). According to the DSM-5, to receive a diagnosis of PTSD the individual has to experience the following: recurrent and involuntary intrusive memories of the traumatic event(s), nightmares in which the content is related to the traumatic event(s), dissociative episodes (including flashbacks), psychological distress when exposed to internal or external cues associated with the traumatic event(s), negative alterations in mood and cognition, and marked alteration in arousal and reactivity (e.g., hypervigilance). These symptoms are often experienced shortly after the traumatic event has occurred, however for some people onset is delayed (APA, 2013).

For most people, PTSD symptoms resolve within several weeks with approximately 50% of those diagnosed improving even without treatment within a year (Fletcher et al., 2010; NICE, 2018). However, a substantial minority of those exposed to trauma (10-20%) continue to experience symptoms making it chronic. In England the prevalence of PTSD is 3.7% in men and 5.1% in women, with women between the age of 16 and 24 being most likely to receive a diagnosis (NICE, 2018). Higher rates of PTSD have been found in military personnel, and in survivors of rape, genocide, and childhood trauma (APA, 2013). Individuals who have experienced childhood trauma are also more likely to develop PTSD in adulthood; this may be partly associated with the high likelihood of these individuals facing further traumatic events in their life (Classen et al., 2005). However, it is worth noting that childhood trauma does not only lead to the development of PTSD symptoms. Indeed, childhood trauma has been found to have a strong link with various psychiatric disorders (e.g., mood and anxiety disorders) (Gilbert et al., 2009). Kessler and colleagues (2005) found that the lifetime prevalence of PTSD among older adults (age 60 and over) was 2.5% which is lower than in the adult population, but still significant. PTSD often co-occurs with other psychiatric disorders such as anxiety and depression with rates ranging from 21% to 94% and 39% to 97% respectively (Ginzburg et al., 2010). High levels of perceived social support in the

aftermath of a traumatic event have been associated with a lower risk developing PTSD, and mood and anxiety disorders (Meyer et al., 2012; Pietrzak & Cook, 2013).

1.3 Depression

According to the DSM-5 (APA, 2013, p. 160-161), the core symptoms of Major Depressive Disorder (MDD) are “depressed mood most of the day and nearly every day”, “diminished interest or pleasure in all, or almost all, activities”, “insomnia”, disturbed appetite with consequent significant “weight loss”, “fatigue or loss of energy”, “feelings of worthlessness or excessive and inappropriate guilt”, “diminished ability to think or concentrate”, and “recurrent suicidal ideation”; these symptoms must be present “during the same 2-week period”. Depression is often associated with severe disability and mortality. Depression is one of the leading mental health disorders worldwide affecting around 5% of the adult population. In the United Kingdom, the prevalence of depression in children and young people is estimated to be around 1%, in the adult population between 5.3% and 11.3%, and in the older adult population around 20% which makes it the most prevalent mental health problem in this age group (Age UK, 2016; de la Torre et al., 2021). Depression can occur at any age; however, research had showed how its incidence appears to mostly peak in young adulthood with an average age of onset in the mid-20s (Moffitt et al., 2010; Nihalani et al., 2009 as cited Mahli & Mann, 2018). Predisposing factors for depression include interpersonal difficulties, stress, poverty, social isolation, family history of depression, and past history of depression (NICE, 2022).

1.4 Anxiety

According to the DSM-5 (APA, 2013, p. 189), “anxiety disorders include disorders that share features of excessive fear and anxiety and related behavioural disturbances”. As a result of the excessive fear, individuals experience surges of autonomic arousal which lead to fight, flight, and freeze responses (e.g., fast heartbeat, dizziness, sweating). The anxiety disorders described in the DSM-5 (APA, 2013) include Generalised Anxiety Disorder, Panic Disorder, and Social Anxiety Disorder. Anxiety disorders are among the most common mental health disorders worldwide. In the UK, over 8 million people experience an anxiety disorder at any one time (https://mentalhealth-uk.org/). The prevalence rates range from 5% to 19%

in children and adolescents, from 4% to 5% in adults, and between 1.3% and 4.7% in older adults (NICE, 2020). Predisposing factors for anxiety disorders include childhood adversity (e.g., neglect, witnessing domestic violence), sociodemographic factors (e.g., unemployment, low socioeconomic status), and chronic physical conditions (e.g., diabetes, cancer) (NICE, 2020).

1.5 PTSD, Depression and Anxiety in Cancer Survivors

Many cancer survivors appear to adjust well to life after cancer; however, some experience persistent emotional distress including cancer-related PTSD, anxiety, or/and depression. After treatment, many cancer survivors have to cope with the side effects of the treatment received (e.g., fatigue, cognitive impairments, sleep disruptions), and often report feeling alone and abandoned by their care team. Survivors may become hypervigilant to physical symptoms that could be potentially associated to the cancer returning (e.g., localised pain), and therefore experience fear of recurrence (Ghazali et al., 2013). They might become hyper aroused when exposed to reminders of the cancer (e.g., hospital), and may want to avoid situations that remind them of the treatment (e.g., doctor's appointments, scans) (Cordova et al., 2017).

Metanalyses (Irwin et al., 2013; Nordin et al., 2001; Vahdaninia et al., 2010). have highlighted the high prevalence of anxiety and depression (17.9% and 11.6%, respectively) in cancer survivors, which suggests that anxiety and depression in cancer survivors are more common than in healthy controls (Mitchell et al., 2013). Risk factors for anxiety and depression in cancer survivors include fatigue, pain, lack of social support, and sleep disturbances. In terms of cancer-related PTSD, Abbey and colleagues' (2015) metanalysis reported a prevalence range between 7.3% and 13.8% which is higher than in the general adult population (NICE, 2018). The authors identified several risk factors which contributed to the development of PTSD in cancer survivors, including young age, advanced disease, and recently completed treatment. Other studies have identified further predictors including reduced income, pre-cancer mental health difficulties, poor social support, and childhood trauma (Butler et al., 1999; Cordova et al., 1995; Green et al., 2000). It was only in the DSM-4 (1994), that cancer was recognised as a stressor capable of leading to a diagnosis

of PTSD. The change was brought after several studies on cancer patients indicated the presence of traumatic stress symptoms in this population (Andrykowski & Kangas, 2010). This change had therefore a positive effect on both clinical practice as well as research (Sumalla et al., 2009). Indeed, it led to a proliferation of studies focused on investigating the prevalence of PTSD in cancer patients (Kangas, 2013). However, further changes to the PTSD diagnosis and its criteria were carried out in the DSM-5 (2013). The new PTSD criteria do not include a life-threating illness as a traumatic experience anymore. Medical incidents can qualify as traumatic if they are sudden and catastrophic. Cancer patients can still be diagnosed with PTSD, but only in the event of something catastrophic occurring during their cancer journey or if they had previous mental health difficulties. These changes to DSM criteria have had important clinical implications. Recommendations have been made to clinicians regarding the importance of screening cancer patients adequately, including collecting information about patients' psychological history and the influence of this on their symptomatology. Screening cancer patients' history can help clinicians to understand whether their symptoms are an exacerbation or recurrence of pre-existing mental health difficulties or are strictly cancer-related (Kangas, 2013).

1.6 Critique of DSM-5

Using diagnostic criteria and classification systems such as the DSM-5 (APA, 2013) to describe and diagnose individuals who experience mental health difficulties has often led to controversial conversations around the advantages and disadvantages of using such methods. Having access to a diagnostic system allows mental health professionals to communicate with one another, offer different treatment options to clients, and shape the structure of mental health services (APA, 2013; Craddock et al., 2010). Diagnostic systems have also helped researchers to design studies aimed at identifying evidence-based interventions to support individuals with various mental health difficulties; diagnostic checklists help to ensure that different groups of researchers study the same disorder (Rief et al., 2013). On the other hand, diagnoses have continuously showed poor reliability and validity (Timimi, 2014) and concerns have been raised around the application of medical labels to normal human responses (Raskin & Gayle, 2016). The DSM-5 has reduced the threshold for many disorders which meant that "false epidemics" of diagnoses

such as Autism, Attention Deficit Disorder, and Childhood Bipolar Disorder have increased benefitting pharmaceutical companies worldwide (Rief et al., 2013). Some authors have argued that the interpretation of trauma and other mental health problems (e.g., hearing voices), as depicted by diagnostic systems such as the DSM-5, is mostly Western-centric and therefore shared concerns around the universality of such diagnoses.

1.7 Post-Traumatic Growth and Cancer

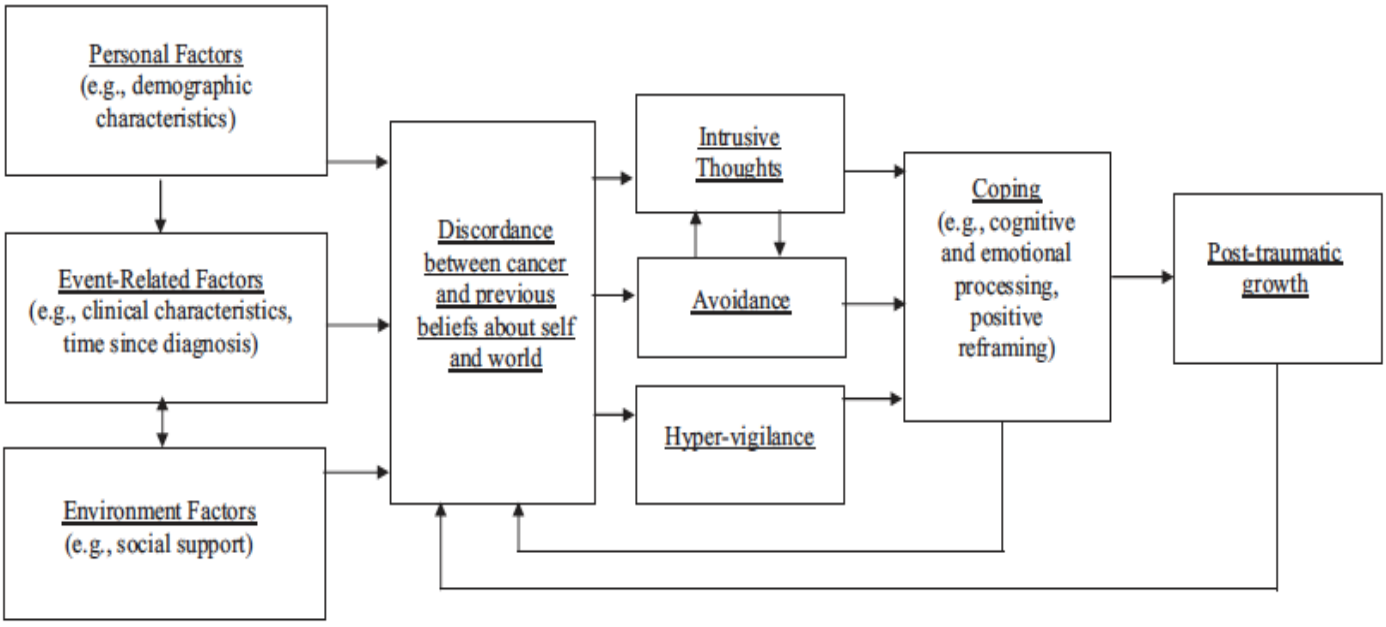
The term Post-traumatic Growth was initially coined by Tedeschi and Calhoun in 1996. The term referred to the cognitive processes that lead to positive reinterpretation, psychological change, and drawing strength from adversity as a result of having experienced a traumatic event. The authors reflected on how crucial significant life disruption can promote change. They emphasised that post-traumatic growth is more likely to occur in the event of major crises rather than lower level stressful situations. Among the events that could lead to post-traumatic growth, the authors reported the following: bereavement, cancer, HIV infection, heart attacks, children physical illness, sexual abuse, and combat. In order to experience post-traumatic growth, the individual would have not only survived the event, but experienced significant and deeply profound changes to their person (Tedeschi & Calhoun, 2004).

Jim and Jacobsen (2008) introduced a theoretical model of post-traumatic stress and growth in cancer survivors (Figure 4) where they hypothesised how individuals' prior beliefs about self and the world are challenged by the cancer diagnosis (e.g., "I am a good person, so why is this happening to me?"). As post-traumatic stress symptoms occur when the brain is unable to process trauma memories, the authors hypothesised that post-traumatic growth can only occur in the event in which these memories are "correctly" processed, and the individual is able to change the meaning behind their traumatic experience to maintain positive assumptions about self and the world.

Research has suggested that cancer patients and survivors might describe their experience and its outcome as either positive or negative. In their metanalysis, Marziliano and colleagues (2019) found an overall modest and positive relationship between growth and stress in the cancer populations. The authors found that a stronger positive relationship was found in Stage Four cancer patients (the cancer has spread to at least one another body organ from where it started), which is in line with Tedeschi and Calhoun's concept (1996; 2004) whereas the more an event is perceived as threatening ("a crisis"), the more likely it is for the individual to experience profound change.

Figure 4

Theoretical Model of Post-traumatic stress and growth in cancer survivors (Jim & Jacobsen, 2008)



1.8 Cancer Survivors' Quality of Life

As cancer survival rates increase, more research has focused on the impact of cancer on cancer survivors' quality of life (QoL). Cancer survivors have reported several long-term physical and psycho-social effects of having received cancer diagnosis and treatment (Pearce et al., 2008). Among these, cancer survivors have reported infertility, impaired cognitive function, chronic fatigue, sexual problems, localised pain (e.g., in the area where the cancer was), body image difficulties, fear

of recurrence, anxiety and depression (Gotay & Muraoka, 1998; Kim, 2006; Loge et al., 2000; Mols et al., 2005; Tannock et al., 2004). Predictors of low QoL in the aftermath of cancer include having received chemotherapy, having a comorbid disease, not having received sufficient emotional support from family members and friends, having a low income, and having experienced no other major traumatic events in life (Mols et al., 2005).

1.9 Existential Anxiety and Cancer

The concept of Existential Anxiety (EA) was first developed by philosophers such as Kierkegaard, Jaspers, and Heidegger, since then its concept has been embraced by several psychologists and psychiatrists (e.g., Iverach et al., 2014; Yalom, 1980). EA represents individuals' concerns about life itself, including its meaning, death, and lack of certainty. Most people appear to be able to manage the feelings associated with such concerns; however, this might not be the case anymore when people are faced with adversity (e.g., trauma, loss) (Fuchs, 2013). The concept of EA has been often been used to understand human behaviour. For instance, people who experience mental health problems seem to be more sensitive to the ultimate concerns of life (e.g., death, meaningless, guilt, identity), possibly as a result of having experienced a traumatic event. As cancer patients are faced with such ultimate concerns (e.g., threat to existence, identity loss), one could argue that they are likely to experience existential anxiety as a result of it. Being physically unwell to the point where threat to life is experienced means "finding oneself in a pattern of disorientation, resistance, helplessness, and perhaps even despair" (Missel et al., 2022; p.292).

1.10 Psychological Theories of Trauma

1.10.1 Ehlers and Clark's Cognitive Model of PTSD

Ehlers and Clark's cognitive model of PTSD (2000) is based on the idea that PTSD occurs when individuals process/appraise the traumatic event in a way which leads to a feeling of serious current and constant threat. Individuals may start to overgeneralise from the event and therefore perceive normal activities as more dangerous than they really are. They may develop catastrophic beliefs such as "bad things always happen to me" and "I attract disasters" (Ehlers & Clark, 2000, p.321).

The perception of current threat then leads to the development of several symptoms such as intrusive thoughts and images, hyperarousal, anxiety, and other emotional responses. In order to avoid experiencing these symptoms, the individual then engages in a series of behaviours and cognitive mechanisms (e.g., avoidance, rumination, distractions) which in the long-term prevent cognitive change and therefore maintain the problem.

Ehlers and Clark (2000) emphasised that it is the type of cognitive processing that occurs during the traumatic event that lead to the development of a sense of current threat; it depends on how the trauma memory is encoded. They distinguished between two encoding mechanisms: *data-driven and conceptual processing*. Some trauma victims report confusion and overwhelming sensory-perceptual impressions which means that the traumatic event was poorly incorporated and organised into their autobiographical memory system. If the individual lacks conceptual processing and therefore mostly engages in data-driven processing, they are more likely to suffer from persistent PTSD as the resulting memory will be poorly discriminated from other memory traces and therefore more likely to be "accidentally and unintentionally" retrieved (e.g., flashbacks, re-experiencing, nightmares, dissociation). Whilst when individuals engage in conceptual processing, they are more likely to explore the meaning of the situation and more able to organise the memory by attributing context (e.g., it happened on this day) which facilitates its integration within the autobiographical memory system. This means that the memory is well-organised and can be intentionally retrieved without leading to unpleasant symptoms.

1.10.2 Brewin and colleagues' Dual Representation Theory

Similarly to Ehlers and Clark Cognitive Model of PTSD (2000), Brewin and colleagues' Dual Representation Theory (1996) also claimed that traumatic memories are processed differently compared to non-traumatic ones. Their model includes two memory systems which operate alongside each other: Verbally Accessible Memories and Situationally Accessible Memories. Verbally Accessible Memories consist of memories that are well integrated into the autobiographical context and can be deliberately retrieved. Verbally Accessible Memories include

enough information for the memory to be processed and then transferred to the long-term memory system.

On the other hand, Situationally Accessible Memories contain the sensory and physiological components of traumatic memories which have not been correctly processed/encoded. As a result, the individual might struggle to retrieve the memory and the recall is involuntary leading to emotional distress (e.g., PTSD symptoms). Brewin and Holmes (2003) suggested exposure and habituation and integration of trauma memory into existing memory pathways to achieve symptoms' reduction.

1.10.3 Foa and Kozak's Emotional Processing Theory

Emotional Processing Theory (Foa & Kozak, 1986) postulates that the fear network/structure of trauma survivors includes excessive stimulus and response elements (e.g., sights, sounds, smells, etc.) and two basic dysfunctional beliefs, "the world is completely dangerous" and "I am totally incompetent which means I cannot handle any stress", which contribute to the development and maintenance of PTSD (Rauch & Foa, 2006; p. 62). As a result of this, trauma survivors' fear network is more likely to easily activate even when the threat is not real (e.g., a survivor of a car accident not only associates threat with driving but also with blue cars as the car that hit them was blue). When something in the environment activates one or more of the elements within the fear network (e.g., a smell), it is likely that the entire fear network activates as a consequence. Foa and Kozak (1986) identified two mechanisms that are crucial to achieve the modification of the fear/trauma network: *the activation of the fear network through repeated exposure* (also known as habituation) and *the replacement of pathological elements with realistic ones* (this mostly occurs through engagement in daily activities that disconfirm them). This eventually leads to the modification or extinction of the pathological fear network (as the fear network is modified, the strength of the response will diminish) and to the recovery from a traumatic event.

1.10.4 Porges' Polyvagal Theory

Polyvagal Theory as introduced by Porges (1995, 2001, 2007) is rooted in evolutionary and neuropsychological theories. It describes an autonomic nervous system (ANS) that is influenced by the central nervous system and responds to

signals from both the environment and bodily organs. The ANS is part of the peripheral nervous system and it regulates involuntary physiologic processes such as blood pressure, respiration, heart rate, digestion, and sexual arousal. Polyvagal Theory explains that early vertebrate ANS engaged in behavioural shut down (freeze) and reduced metabolic functions when under threat. This gradually changed and they learned new ways to cope with threat, including flight and fight responses. When individuals experience a traumatic event, they may become 'stuck' into these threat-responses. So, even when the threat is gone, the body still perceives danger and acts accordingly (e.g., hyperarousal, irritability, avoidance). Porges argued that it is not the event in itself that becomes the "problem", but the consequences of this event on a person's physiology and nervous system that changes their ability to function every day. Polyvagal theory has brought a new understanding of trauma by providing physiological explanations to trauma survivors. Polyvagal theory proposes a set of exercises which may help the individual to feel safe again and therefore come out of their threat response (flight/fight). These include meditation, exposure to cold, exercise, and socialising with others.

1.10.5 Critique of Theories

There is significant overlap between the Ehlers and Clark's Cognitive Model of PTSD (2000), Brewin and colleagues' Dual Representation Theory (2000), and Foa and Kozak's Emotional Processing Theory (1986) mostly in relation to how trauma memories are processed, and how exposure and habituation can result in PTSD symptoms reduction. However, Brewin and Holmes (2003) have argued that in some cases it is unclear whether the between session reduction in PTSD symptoms is to be attributed to exposure and habituation, or to other mechanisms including cognitive reappraisal.

Polyvagal theory has been often criticised due to its lack of empirical evidence (Grossman & Taylor, 2007); however, a recent metanalysis published by Scheider and Schwedtfeger (2020) emphasised the potential link between having experienced a traumatic event(s) and the ANS dysfunction.

1.11 Narrative Exposure Therapy (NET)

NET was originally developed for the treatment of PTSD resulting from

organised or family violence, and for use in low-resource settings; it is specifically designed for individuals who have experienced severe and repeated physical and social threats to life and integrity (Schauer et al., 2011). NET integrates effective therapeutic components from a combination of therapeutic approaches including Cognitive Behavioural Therapy (CBT; Beck et al., 1979; Beck, 2021), Prolonged Exposure (Foa et al., 2007) and Testimony Therapy (Van Dijk et al., 2003). NET aims to achieve symptoms reduction through two main mechanisms of change:

1. The activation of the fear/trauma structure through exposure with subsequent habituation of the emotional, sensory-perceptual, cognitive, and physical responses.
2. Autobiographical integration which involves the chronological reconstruction of the individual autobiographical memory where memories are placed in a coherent, consistent, and declarative narrative.

NET follows a manualised and detailed treatment protocol; Table 8 illustrates the structure and content of the intervention session by session.

Table 8

Structure of Intervention

Session no.	Content
Session One	Psychoeducation
Session Two	Lifeline
Session Three	Start the narration beginning at birth and continuing through to the first traumatic event
Session Four and Subsequent Sessions	Rereading of the narrative collected in previous sessions. Continuing the narration of subsequent life and traumatic events
Final Session	Rereading of the narrative collected in previous sessions (the Testimony)

Notes. This table was taken from the NET Manual (Schauer, et al., 2011; p. 38).

The *Psychoeducation Session* focuses on normalising and legitimising clients' responses ("it is normal to have such reactions after having experienced a traumatic event"), on describing different trauma reactions/symptoms (e.g., flashbacks, dissociation), and on explaining the intervention and its aims. The *Lifeline Session* focuses on helping the client to construct their autobiographical timeline which will then become the roadmap for the upcoming sessions. The client is encouraged to place flowers for positive events, stones for negative/traumatic events, and candles for loss. At this point in the intervention, the client is encouraged to focus only on the contextual information (e.g., "how old were you when it happened?") and to label the event without exploring its content. In the following sessions, each event is explored in rich detail (*Narration Sessions*). Sensory, cognitive, emotional, and physiological components are explored to ensure the client is "fully exposed" to the memory. Contextual information is gathered to aid habituation; the emotional and sensory perceptual components of the narrative (hot memories) are placed into a coherent narrative (cold memories). During each session, the therapist writes down the client's narrative in as much detail as possible using the client's own words. The transcription is then read to the client before exploring the next event on the lifeline.

The entire narrative is then compiled at the end of therapy and it becomes the client's testimony, a written acknowledgment of their experiences/life.

For the purpose of this study, a second lifeline was laid out with participants at the end of the intervention. The aim was to explore whether changes to the lifeline content had occurred post intervention (e.g., less stones, more flowers, new events). It has represented a further source of qualitative data to analyse the effectiveness, feasibility, and acceptability of NET for this client group.

1.11.1 Brief Overview of the NET Evidence

In recent years, several systematic literature reviews have been conducted to evaluate the effectiveness of NET in treating symptoms of traumatic stress, as well as depression (Lely et al., 2019; Raguraman et al., 2020; Robjant & Fazel, 2010; Siehl et al., 2021; Wright et al., 2020). Overall, NET demonstrated superiority in reducing symptoms of PTSD compared to both active and non-active treatments (e.g., psychoeducation, trauma counselling). Effect sizes for symptoms of traumatic stress ranged between medium to large at post treatment and follow-up indicating sustained change. Effect sizes for symptoms of depression ranged between small to medium and NET only outperformed non-active treatments. No information was gathered on symptoms of anxiety. The reviews highlighted low dropout rates which can be considered an indicator of NET's acceptability and feasibility with relevant populations. It is worth noting that the most improvements have been observed at follow-up which could suggest that, even though NET is delivered over a short period of time, it still leads to such significant change to trigger a longer term healing process for those who engage (Neuner et al., 2020). The NET manual has been translated in several languages including Dutch, English, French, and Italian demonstrating the growing interest in such a model. Moreover, special adaptations have been made to tailor NET to specific client groups such as children (KIDNET; Schauer et al., 2011), forensic patients (FORNET; Elbert et al., 2012; Robjant et al., 2019), and for adults with a mild learning disability (Marlow et al., 2021). In recent years, especially in the aftermath of the COVID19 pandemic, increasing interest has been placed on how and whether it is possible to deliver NET online. Kaltenbach and colleagues (2021) provided with practical guidelines for online NET (e-NET)

including directions on how to manage dissociation and flashbacks when using online therapy (e.g., assess dissociative symptoms prior to starting NET). Although the evidence of NET is growing and promising, most studies have focused on using NET with survivors of war and organised violence such as refugees and asylum seekers, more research should therefore focus on other client groups (e.g., physical health patients).

1.12 Study Aims and Predictions

The main purpose of this study was to evaluate the feasibility, acceptability, and potential effectiveness of NET in reducing symptoms of traumatic stress (e.g., hyperarousal, avoidance, and intrusion) in cancer patients who are not in active treatment. A secondary aim involved evaluating the effectiveness of NET in reducing symptoms of anxiety and depression in cancer patients who are not in active treatment. These are addressed in the Journal Paper.

Further aims were also evaluated for the purpose of this research project. Due to the word count limitation in the Journal Paper, these aims were included in the Extended Paper.

Further aims included:

- Can NET improve existential anxiety for cancer patients who are not in active treatment?
- Can NET improve the Quality of Life (QoL) of cancer patients who are not in active treatment?
- Can NET lead to post-traumatic growth in cancer patients not in active treatment?

The study predicted:

- Reduction in post-traumatic stress symptoms as assessed by the *PTSD Checklist Civilian (PCL-C; Weathers et al., 1994)*

- Reduction in symptoms of anxiety, depression, and existential anxiety as assessed by the *Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983)* and *Existential Concerns Questionnaire (ECQ; van Bruggen, 2018)*
- Reduction in physiological arousal as a result of habituation as assessed by the *Subjective Unit of Distress (SUD; Wolpe, 1969)* and the *Body Perception Questionnaire Short Form – Autonomic Nervous System Subscale (BPQ-SF; Porges, 1993, 2015*)
- Improved quality of life and post-traumatic growth as assessed by the *Functional Assessment of Cancer Therapy – General 7 items (FACT-G7; Yanez et al., 2013)* and the *Post-traumatic growth inventory (PTGI; Tedeschi & Calhoun, 1996)*

Extended Methods

2.1 Epistemological Position

The epistemological position adopted for this research is Critical Realism. According to Bhaskar (2013), critical realism's most basic claim is that reality operates and largely exists independently of the researcher's knowledge or awareness of it; our knowledge of the world varies historically, and theories develop and/or fade. Critical realism constantly reflects on and revises theories and instruments, perceiving them as provisional and fallible (Gorski, 2013).

When it comes to research, critical realism is compatible with a wide range of research methods and it claims that the methodology choice should depend on the nature of the object under study and what the researcher wants to learn about it (Sayer, 2000). Critical realism claims that the most effective approach in research is adopting both qualitative and quantitative methodologies. Critical realism uses quantitative approaches to test out theories about how causal mechanisms might operate under specific conditions and qualitative approaches to enable the investigation of more complex phenomena (Mingers, 2004). Critical realism is deemed suitable to case study research because this research seeks to investigate complex phenomena through the use of both quantitative and qualitative

methodologies; moreover, the small sample size in any case study research is never going to be large enough to be justified in terms of positivism (Albert et al., 2020).

2.2 Ethical Approvals and Study Registration

This study received final ethical approval from the North West - Liverpool Central Research Ethics Committee and Health Research Authority on the 14th of February 2022 (22/NW/0024; Appendices A and B). This study was registered on a public trial database prior to recruitment (https://clinicaltrials.gov/; NCT05272553). The lead researcher (DD) completed the Introduction to Good Clinical Practice training offered by the National Institute for Health Research prior to the start of the study. Also prior to the start of the study but after HRA approval, the Research Departments (R&Ds) of the two participating sites (Nottinghamshire Healthcare NHS Foundation Trust and Lincolnshire Partnership NHS Foundation Trust) were notified and confirmation for their capacity and capability to support the study was obtained.

2.3 Study Design and Rationale

Single Case Designs (SCDs) are beneficial for investigating complex processes within psychological interventions, due to their flexibility and ability to integrate both qualitative and quantitative methodologies (Easton, 2010; Nash et al., 2011). The case study is seen as a vehicle of hypothesis-testing, and the hypothesis being tested is whether that therapy model has been helpful in reducing the client's problem behaviours/symptoms and whether a specific element of the intervention has had an effect (McLeod, 2010). This design is ideal when a control group is difficult to attain or when a control condition may not be ethically appropriate (Barnett et al., 2012). Indeed, single case designs can represent practical complements to larger clinical trials (e.g., randomised controlled trials) as they are helpful to refine protocols and/or address recommendations prior to repeating the same intervention with a larger sample (Graham et al., 2012; Krasny-Pacini & Evans, 2018).

The baseline (A) consists of a series of measures of the problem behaviour collected before the start of therapy, which will then be compared to measures taken at the end of therapy (B); more than one baseline measure is needed as a single observation could be unreliable (e.g., the client might feel particularly low on that day

and score lower than they would usually do). A follow-up (FU) is used to test whether any changes that have occurred are attributable to simply seeing a therapist on a weekly basis or whether they represent a more fundamental and stable type of change (McLeod, 2010).

An AB design was chosen as it was considered the most appropriate design for this study (Barker et al., 2015). Other designs could not be taken into consideration due to their nature. The reversal design (or ABAB) which involves withdrawing the intervention to then reintroducing it at a later stage (Barker et al., 2015) could not be used for this study as the learning from NET cannot be withdrawn. Engaging in NET might change the way in which the individual gives meaning to and feels about the traumatic events they explored in therapy; this change may therefore be irreversible. Furthermore, this design was not considered appropriate from an ethical perspective given that participants were recruited from the NHS. The repeated removal of the intervention was not deemed in the best interest of participants' care and inconsistent with NHS values (e.g., "working together for patients", "respect and dignity", and "commitment to quality of care"). According to the BPS Code of Human Research Ethics (2021, p. 9), psychology researchers have a duty of care towards participants: "psychologists should consider all research from the standpoint of the research participants and any other persons, groups or communities who may be potentially affected by the research, with the aim of maximising potential benefits and avoiding potential risks to psychological wellbeing, mental health, personal values, privacy or dignity."

It is worth noting that the AB design has often being criticised for not establishing sufficient causality as changes in outcome variables could be associated with other factors (e.g., social support, therapeutic alliance). However, at least three replications have been recommended to increase confidence that the findings demonstrate a functional relation between the intervention and the outcome, and to draw any conclusions on external validity (Kratochwill & Levin, 2014; Lobo et al., 2017; Morgan & Morgan, 2008). Finally, the sample size does lead to problems of generalisability in case study research. Indeed, it is not possible to make general statements about patterns or trends from single case series (McLeod, 2010).

2.4 Rationale and Critique of the Baseline Phase

Traditionally, the literature around SCDs recommends collecting data during the baseline phase until the participant has stabilised (Krasny -Pacini & Evans, 2018). The more baseline data points, the more likely it will be to differentiate between baseline and intervention phases. However, this is rarely possible in naturalistic designs as waiting for baseline data to stabilise would mean withholding the intervention, which is considered unethical. Although more baseline data points are normally linked to increased validity (Smith, 2012), most studies have stated that a minimum of three replications are needed to calculate effect sizes (Krasny -Pacini & Evans, 2018; Tate et al., 2008). Three baseline datapoints were collected in this study to reduce burden on participants and thus ensure the study was in line with BPS Code of Human Research Ethics (2021) and NHS Values.

2.5 Rationale for Sample Size and Intervention Length

The original aim was to recruit up to six participants to account for potential dropouts. Four participants were recruited for the purpose of this study. Four participants were considered sufficient to ensure three replications were obtained.

Circa twelve sessions were offered to clients depending on their needs; this is in line with the literature on NET and recommendations made by the authors (Schuaer et al., 2011). In this study, the youngest client had eight sessions of NET (Margaret) and the oldest had eleven (Elizabeth).

2.6 Procedure

2.6.1 Sample Recruitment

Two participants were recruited from Lincolnshire Partnership NHS Foundation Trust (LPFT) Physical Health Psychology, and two more from Nottinghamshire Healthcare NHS Foundation Trust (NHFT) Physical Health Psychology. Recruitment was supported by local Clinical Psychologists working in psycho-oncology services who functioned as gatekeepers. Participants were offered either online or face-to-face sessions; this was based on their own preferences and service procedures. For instance, as the service in LPFT only operated online,

participants were offered online sessions, whilst both participants from NHFT chose to attend face to face.

Eligible participants were identified and approached by gatekeepers; the method depended on the usual procedure within the service, this included face to face, videocall, or phone call appointments. The gatekeepers briefly summarised the aim of the study and, after having received verbal consent, they passed on participants' contact details to the lead researcher/Trainee Clinical Psychologist. Once potential eligible participants had been referred, the Trainee met with them to explain the aims of the research study and the screening procedure using the Participant Information Sheet. Participants were given up to 24 hours to consider their participation. Before the screening took place (Baseline One), participants had to sign a Participant Informed Consent Form, one copy of the PCF was kept by the participant, one was kept by the main investigator, and a third was retained in the patient's hospital records. Participants were made aware that to enter the study they had to meet specific eligibility criteria (see Table 6 and 7 for eligibility criteria) to ensure NET is the right intervention for them. If they did not meet them, they were still offered treatment through the standard service procedures as part of the usual care outside of this study. The screening functioned as Baseline 1 when participants met eligibility criteria. Participants were then invited to complete the measures again twice (Baseline 2 and 3) before the intervention could begin (more information on measures timeline is provided below, Table 11)

Participation in the study was voluntary and participants were explained that their treatment and care would not be affected by their decision. It was also explained that they could withdraw at any time. In the event of their withdrawal, participants were explained that the data collected so far would not be erased and might still be used in the final analyses where appropriate.

The lead researcher (DD – Trainee Clinical Psychologist) had access to participant information through their medical notes, this helped to contextualise the findings for each case and inform cross-case comparisons. Additional information includes demographic data (e.g., gender, age, ethnicity, socioeconomic status,

education), and clinical information (e.g., type of cancer, treatment received, and previous involvement with mental health services).

Participants did not receive financial incentives for their involvement in the research project.

Table 9

Inclusion Criteria

Inclusion Criteria	Rationale
Adults (18 and over) Diagnosed with cancer in adulthood Able to provide informed consent	The focus of this research project is on adults.
Able to communicate verbally and speak English	CI and supervisor speak English NET requires the ability to narrate events verbally.
Not in active treatment (at any stage post-treatment)	Around 22% of cancer survivors suffer from some form of lifetime Cancer-Related Posttraumatic Stress Disorder (CR-PTSD) (American Psychiatric Association, 2000). During treatment, cancer patients can be very busy with appointments and often experience strong toxicities from the treatment which can make them fatigued, nauseous, and likely to struggle with engaging in a structured therapy. Also, it will give cancer patients enough time to monitor their emotional experiences after treatment, as understandably, it can be fairly normal to feel distressed by initial diagnosis and treatment.

Suffer from symptoms of traumatic stress caused or triggered by the cancer experience. A diagnosis of PTSD is not required (PTSD Checklist Civilian, PCL-C cut-off score: 29 and above).	The purpose of the study is to evaluate the feasibility, acceptability, and effectiveness of NET in reducing symptoms of traumatic stress (e.g. hyperarousal, avoidance, and intrusion) in cancer patients who are not in active treatment.
No specific form of cancer	Symptoms of traumatic stress can be experienced by all cancer patients regardless of their diagnosis.

Table 10

Exclusion Criteria

Exclusion Criteria	Rationale
Participants have a known diagnosis of Intellectual Disability (ID)	The adaptation of NET for this population is ongoing as part of a different DClinPsy project but is not currently available.
Participants must not be receiving other forms of psychosocial support whilst engaging in NET	To limit confounders.
They are substance dependent	Significant substance misuse may interfere with the processing of memories essential to NET and overall engagement.
They are actively psychotic	Psychotic symptoms may interfere with the processing of memories essential to NET and overall engagement.

2.6.2 Measures

The design collected repeated weekly outcome and process measurements using several measures. During the baseline phase, the PCL-C, HADS*, and FACT-G7 were administered to all participants at three data points (weekly) to assess for stability, against which the intervention could then be compared. They were then administered weekly throughout the intervention and at follow-ups (one month and two months after the end of the intervention). The ECQ, BPQ, and PTGI were administered at the following time points: second baseline, post intervention, and at both follow-ups. The rationale behind this was to reduce burden on participants. See table 11 for Timeline of Measures and Table 12 for measures cut-off points.

Functional Assessment of Cancer Therapy – General 7 items (FACT-G7; Yanez et al., 2013)

The FACT-G7 is a seven item self-report measure on cancer-specific QoL measure; its items comprise physical, emotional and functional domains. Total scores range between 0 and 28, and higher scores indicate better quality of life. The FACT-G7 has shown good internal consistency (Cronbach's alpha = between .72 and .80) (Mah et al., 2020) and good test-retest reliability (scores between .52 and .74) (King et al., 2020).

Existential Concerns Questionnaire (ECQ; van Bruggen, 2018)

EA represents a form of anxiety that goes beyond experiencing anxiety as a consequence of a concrete threat, it is instead related to a threat to our existence as a whole (Glas, 2003); as mentioned in the background section, cancer patients often question their own individual values and the meaning of their existence. Research has demonstrated that cancer patients with higher levels of existential well-being (e.g., less fear related to disease recurrence) report better QoL and lower emotional distress (Brady et al., 1999; Edmondson et al., 2008, Visser et al., 2010). This 13-item questionnaire covers anxiety in reaction to death, guilt, and meaninglessness. The ECQ has shown good internal consistency with a Cronbach's alpha of .91 and test-retest reliability (van Bruggen, 2018).

* Information on the PCL-C and HADS is included in the Journal Paper.

Post-traumatic growth inventory (PTGI; Tedeschi & Calhoun, 1996)

Post traumatic growth is defined as the ability of the individual to experience positive changes in the aftermath of extremely negative experiences; the positive changes usually occur in the context of the self, interpersonal relationships, and philosophy of life (Anderson & Lopez-Baez, 2011). The PTGI consists of 21 items which cover five domains: relating to others, new possibilities, personal strength, spiritual change, and appreciation of life. The PTGI has shown good internal consistency (Cronbach's alpha = .90) and test-retest reliability (r = .71) (Tedeschi & Calhoun, 1996).

Body Perception Questionnaire Short Form – Autonomic Nervous System subscale (BPQ-SF; Porges, 1993, 2015)

The Body Perception Questionnaire (BPQ) is a self-report measure of body awareness and autonomic reactivity. For the purpose of this research project, the ANS subscale was taken into consideration. The ANS is a set of neural pathways connecting the brain and body; these pathways send information and signals from the body about the status of organs and tissues (i.e., afferent projections). These signals can alter the functions of the body, depending on internal and external needs. The BPQ-SF has shown good internal consistency (categorical omega between .77 and .96) and test-retest reliability (r = .96 to .99) (Cabrera et al., 2018).

Subjective Unit of Distress (SUD; Wolpe, 1969)

The SUD is a self-report scale from 0 to 10 for measuring the subjective intensity of distress experienced by an individual; subjective distress refers to uncomfortable or painful emotions felt. The SUD was completed pre and post narration of each trauma event to assess for within session habituation and then repeated for re-narration of each trauma event for between session habituation.

The feasibility and acceptability of NET and participants' view of the nature of change and why change occurred was investigated through the use of an adapted version of the Elliot and colleagues' *Change Interview* (2001). Questions on feasibility and acceptability were based on the eight areas of focus highlighted by Bowen and colleagues (2009). The NET-focused adaptations (e.g., "was there a particular flower that was very important?") have been developed by a previous

Trainee Clinical Psychologist which research project looked at the effectiveness of NET to reduce symptoms of traumatic stress in female survivors of Intimate Partner Violence (Lane, 2019). The adapted version of the Change Interview was conducted by an external researcher (Trainee Clinical Psychologist) after the intervention was completed. See Appendix F for the full interview schedule.

Table 11

Timeline of measures

	Baseline			NET Intervention				Follow-up	
Measures	Consent/Screening B1	B2	B3	S1 Psychoed	S2 Lifeline	S3-S11 Intervention	S12 Lifeline	FU1	FU2
PCL-C	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
HADS	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
FACT-G7	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
ECQ		**X**						**X**	**X**
PTGI		**X**						**X**	**X**
BPQ		**X**						**X**	**X**
SUD						**X**			
Change Interview								**X**	

Note. B = Baseline; S = Session; F = Follow-up; **X** = Measure taken. The ECQ, PTGI, and BPQ will be administered during baseline 2 as baseline 1 will already involve completing consent forms and giving space to participants to ask more questions about the research project if needed.

2.6.3 Measures Rationale

The selection of the chosen measures was informed by the literature around the topic area and consultation with local stakeholders (e.g., Clinical Psychologists working in local cancer services). Indeed, measures such as the PCL-C, HADS, FACT-G7, and PTGI have been widely used in cancer research and services (e.g., DuHamel et al., 2010; Lleras de Frutos et al., 2020; Marziliano et al., 2019; Mitchell et al., 2010).

Although the SUD and BPQ-SF have showed several limitations (see Extended Strengths, Limitations and Future Research), they were considered a more appropriate measure to assess physiological arousal, memory reprocessing, and autonomic reactivity than using other possibly more invasive methods (e.g., heart

rates monitors). As the literature has showed how cancer survivors may experience fear of recurrence as a result of follow-up scans and other invasive follow-up tests (Cordova & Andykowski, 2003; Ghazali et al., 2013; Humphris et al., 2003, Vickberg, 2003), it was felt a less invasive approach would be more ethical and compassionate. The literature on fear of recurrence also informed the choice of the ECQ as it explores individuals' anxiety in response to death, identity, personal vulnerability, and life meaning.

2.6.4 Quality Check

Appendix G illustrates the Quality Check Forms designed by the Chief Investigator (Prof Schröder), these forms were informed by the NET Manual (Schuaer et al., 2011). Separate forms were developed for each NET component: Psychoeducation, Lifeline, and Narration. Intervention fidelity has been defined as a set of strategies or methodological practices which are used by practitioners and researchers to monitor, evaluate, and improve the reliability and validity of psychosocial interventions (Bellg et al., 2004; Preyde & Burnham, 2011). Quality scales are developed with the aim to ensure that the intervention delivered matches with how it was originally developed. Ensuring high intervention fidelity is crucial because it strengthens the study of external validity by improving the generalisability of the results to other similar settings, and improves its internal reliability by improving the replicability of the study's findings.

2.6.5 Confidentiality and Data Storage

All study staff and investigators endeavoured to protect the rights of the study's participants to privacy and informed consent, and have adhered to the Data Protection Act, 2018 (https://www.legislation.gov.uk/ukpga/2018/12/contents/enacted). Only the minimum required information was collected for the purposes of the study. All data will be held securely, in a locked room, or locked cupboard or cabinet at The University of Nottingham.

All data completed by participants (e.g., questionnaires) are only accessible to the research team or to the personnel approved by the Chief Investigator (Prof Schröder). All data is stored on the University of Nottingham's (UoN) secure systems (OneDrive), all files are password protected. The recordings of the sessions were stored on an NHS shared drive on an NHS laptop in order for them to be checked by the CI for treatment fidelity and to help with the write up of the narratives which are an essential part of NET; once this process was completed, the recording files were then deleted from the recorders and laptop. The recordings of the Change Interviews are stored on an NHS shared drive until they are transcribed and anonymised, they will then be transferred on the University of Nottingham's secure systems. The progress notes about the NET sessions and the written narrative produced at the end of treatment have been made available to the participant's care team and saved in their medical notes under a confidential folder that only authorised professionals are able to access.

To ensure confidentiality, each participant was assigned a study ID number on study forms, copies of questionnaires, recordings, transcriptions, other research documents, and the electronic database. All identifiable information is kept separately from the research data they are linked to and stored as password-protected files on UoN web servers. Participants will be made aware that their anonymity will be protected throughout the study and in any dissemination of the research. All research data will be destroyed after seven years from completion and destroyed after this time, apart from participants' contact details which will be kept securely for six months and then destroyed afterwards.

2.6.6 Risk to participants and researcher/therapist

Participants' safety was a priority throughout the study, risk was assessed on an ongoing basis. Participants were informed about the potential negative impacts of engaging in trauma therapy (e.g., increased anxiety and low mood) at screening, and again during the psychoeducation session. Participants were offered the opportunity to ask question and share their potential concerns throughout the study. Participants' emotional distress during the session was managed through the use of coping strategies including grounding techniques (e.g., the five senses exercise). Participants

were provided with contact details of local crisis teams, and encouraged to contact the service, their GP, or 111/999 if needed in between sessions.

The researcher/therapist (DD; Trainee Clinical Psychologist) received weekly supervision by a qualified Clinical Psychologist (Dr Cathryn Young) experienced in delivering NET to discuss the emotional impact of their work as well as receive guidance when needed. The researcher/therapist also had access to monthly research supervision to monitor her progress.

Extended Analysis

3.1 Visual Analysis and Effect Sizes

Although visual analysis remains the most viable strategy when evaluating single case data as it can simultaneously detect curvilinear trends and repeating patterns in data (Parsonson & Bear, 1992), its analysis can be further strengthened by calculating effect sizes. Traditionally, visual analysis was the only method used to analyse data in single case designs as statistical methods were seen as unnecessary. Different visual analysis techniques (Morley, 2017) can be used to explore single case data (see Figure 5 for visual representation), including:

- Central Tendency: the mean value is plotted as a horizontal line for each phase of a single case study (e.g., baseline, intervention). However, as in single case design the sample size is small, the mean value is more likely to be affected by extreme scores. The median may be a better value to plot; however, the median is based on only one or two numbers and therefore it may again not be a true representation of the data.

- Variability: it can be explored by simply imposing the measure of central tendency on each phase and draw lines which capture the range of the data. However, similar to the central location technique, this method is more likely to be affected by outliers as they can extend the range value.

- Point of Change: it looks at how quickly the data may change between phases. This is illustrated by simply circling the two adjacent points (e.g., end

of baseline – start of the intervention). This method may be an effective way to explore single case design data depending on the type of intervention introduced. Some interventions may act quite rapidly and therefore generate a significant change within only a few sessions, but other interventions may need longer before change can be noted.

- Overlap between phases: it looks at how many areas of the data in different phases overlap with each other. The idea behind this method is to explore whether the amount of overlap could be considered as evidence against the interpretation that the intervention has been effective. The TAU-U family of coefficients was used for the purpose of this study. More information about this method can be found below.

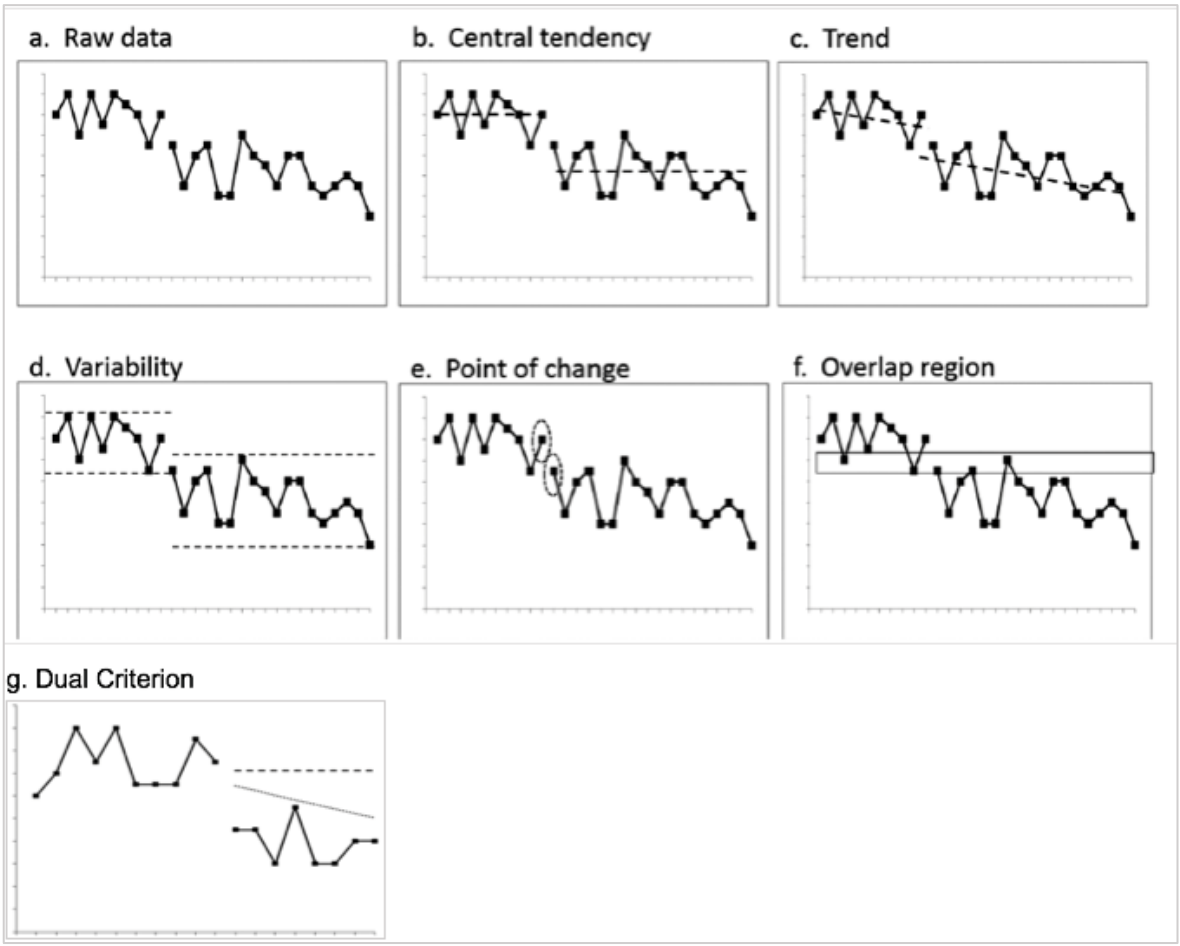
- Conservative Dual Criterion (Fisher et al., 2003): the mean, trend, and variability in the first phase (e.g., baseline) are projected onto the second phase (intervention). The researcher then has to make an estimate about whether the patterns of the two data sets are sufficiently different to suggest that a change has occurred. Although this method can produce an acceptable proportion of Type I error (<.05), some have criticised it for being too conservative and to likely lead to Type II errors also defined as “false negative” (Wolfe et al., 2018)

The final visual analysis technique that can be used to explore single case data is the Trend which was the chosen method for the purpose of this study:

- Trend: it represents a systematic shift in the value of the data’s central location over time; the data are arranged by the order in which the single observations have occurred as a way to explore whether there is a trend in the data. This method is resistant to the influence of outliers which is extremely valuable in small data sets.

Figure 5.

Visual Analysis Strategies



Note. Picture is taken from Morley (2017)

As visual analysis requires a high degree of interpretation, and, therefore, can be susceptible to bias (Lenz, 2013), most experts raised concerns regarding the reliability of visual analysis as a stand-alone method of analysis, and recommended for visual analysis to be used alongside other statistical methods when analysing single case data (Brossart et al., 2018; Brossart et al., 2014; Shadish et al., 2015). Effect sizes can provide objective indices of change, dependability which means having confidence that a similar effect can be achieved under similar conditions, and inform power analyses and metanalyses in future research (Parker & Hagan-Burke, 2007). Several methods of calculating effect sizes were considered for the purpose of this study. These methods are defined as 'non-overlap' statistics, which involve computing a statistic that summarises the extent to which the observations in the

phases (e.g., baseline and intervention) do not overlap. The Percentage of Non-Overlapping Data (PND; Scruggs et al., 1987) is one of the oldest methods used to calculate effect sizes and it is used widely by researchers due to its accessibility. PND is computed by calculating the percentage of intervention data points that do not overlap with the ones in the baseline phase. PND has often been criticised for being purely descriptive (Morley, 2017), for not addressing trends, and for not being able to discriminate between differences at the higher and lower range (Vannest & Ninci, 2015). The Percentage of Data Exceeding the Median (PEM; Ma, 2006) relies on a median score in order to establish the degree of non-overlap. However, if a large variability in the data is noted, a median score may not reflect the data correctly (Vannest & Ninci, 2015).

For the purpose of this study and given the lack of extended baseline, the Tau-U family of coefficients (Parker et al, 2011) were chosen as an appropriate method to calculate effect sizes. Tau-U adjusts for trend which can result in modest but important changes to the effect size. Tau-U can control for the baseline trend, discriminate well at the upper and lower range, and handle smaller data sets. To decide which Tau-U coefficient is best to use (e.g., with - Tau-U $_{\text{trend A}}$ or without - Tau-U $_{\text{A vs B}}$ baseline trend correction), it is important to test whether an observed baseline trend is statistically significant. In terms of empirical rationale for baseline trend correction, the p value for Tau-U $_{\text{trend A}}$ is a reasonable estimate for the necessity of baseline trend. “When there is a statistically significant Tau-U $_{\text{trend A}}$ effect, the researcher may use a baseline trend corrected method, when Tau-U $_{\text{trend A}}$ is not statistically significant, then the researcher probably lacks the empirical support for baseline trend correction” (Brossart et al., 2018; p.9). Controlling for baseline trends in the absence of trend significance can lead to neglecting “true” variance from the treatment effect (Fingerhut et al., 2021; Tarlow, 2017). Although the Tau-U coefficients have demonstrated to be advantageous in single case design, several limitations have also been highlighted. One of the most significant limitations is its weak association with visual analysis as a specific way to visualise its procedure has not been provided. For instance, the use of the Tau-U baseline trend correction has often been described as a “black box” process which makes subtle interpretations of effect sizes outcomes challenging (Brossart et al., 2018). Finally, as the Tau-U is essentially a family of indices that require difference interpretations,

several discrepancies around their interpretations have been noted in the literature. Broassart and colleagues (2018) have attempted to provide a unified way to interpret Tau-U.

3.2 Reliable and Clinically Significant Change

Reliable Change Index (RCI) and Clinically Significant Change (CSC) statistics (Jacobson & Truax, 1992) is normally calculated to assess whether change has been found pre and post intervention (Busch et al., 2011), and whether this change has occurred due to real change or to chance variation (Ferguson et al., 2002). The RCI is calculated by using the standard error of the measure used. The post intervention score is subtracted from the pre intervention score, and the result is divided by the SE. Change is considered reliable when the resulting value is within ±1.96. The post-intervention scores can be assessed further for CSC when a reliable change has been found (Jacobson & Traux, 1992). The CSC has happened if the post-intervention value is two standard deviations away from the mean of a clinical group (Criterion A); the post intervention value is two standard deviations within the mean of a nonclinical group (Criterion B); or the post intervention value is closer to the mean of the nonclinical group than the mean of the clinical group (Criterion C) (Barrett-Naylor et al., 2018). Another option is to use an External Criterion, this is usually an established criterion or clinical cut-off score which must be relevant for and validated with the client group which is being analysed. Within the current study, Criterion A, C, and External were used; this was dependent on available comparative data (see Table 12).

Table 12

Comparison Data for Outcome Measures to calculate RCI and CSC

MEASURE		SAMPLE	POPULATION	*N*	MEAN (SD)	Cronbach's Alpha	Cut-off Scores
PCL-C		Clinical (Ochoa et al., 2020)	Cancer survivors (waiting to receive treatment for traumatic stress symptoms)	140	52.88 (12.20)	.90	17-29 This cut off shows little to no severity
		Non-Clinical (Ruggiero et al., 2003)	College Students	392	29.4 (12.9)		30–44 Moderate to Moderately High severity 45-85 High Severity
HADS	Depression Subscale	Clinical (Dagnan et al., 2000)	Participants of a Self-help Group for depression	700	9.5 (4.5)	.82	0-7 = Normal 8-10 = Borderline case 11-21 = Abnormal case
		Non-Clinical (Crawford et al., 2001)	General Adult Population	1792	3.68 (3.07)		
	Anxiety Subscale	Clinical (Dagnan et al., 2000)	Participants of a Self-Help Group for depression	700	12.5 (4.0)		
		Non-Clinical (Crawford et al., 2001)	General Adult Population	1792	6.14 (3.76)		
FACT-G7	Pearman et al., 2014	Clinical	Adult Cancer Patients	1400	16.3 (5.0)	.81	Normal activity = 22 and above

		Non-Clinical	General Adult Population	5065	20.1 (5.4)		Some symptoms but not requiring bed rest = 18 - 21 Requires bed rest <50% of the day = 14 – 17 Requires bed rest >50% = 0 - 13
ECQ	Van Bruggen et al., 2018	Clinical	Individuals diagnosed with anxiety or depressive disorders	99	58.34 (13.75)	.92	
		Non-Clinical	Undergraduate Students and their family members	389	42.92 (12.59)		
BPQ SF – Autonomic Nervous System Reactivity Subtest		Clinical*	Cancer patients	4	66 (14.83)	.87	Scores of 45 or lower = the autonomic stress response system activates only occasionally Scores higher than 45 = the system activates often (high stress levels)
PTGI		Clinical (Silva et al., 2012)	Breast Cancer Patients	78	62.22 (21.90)	.90	Scores of 45 and below = none to low PTG levels
		Non-Clinical	Undergraduate Students who had experienced a significant negative life	405	75.18 (21.24)		Scores of 46 and above = moderate to very high PTG levels

	(Tedeschi & Calhoun, 1996)	event during the past 5 years

*data calculate from own sample due to lack of data in the literature

3.3 Content Analysis

Content Analysis was used to analyse the Change Interviews. Content Analysis' assumption is that texts are a valuable source to explore important information about a particular phenomenon (Kondracki et al., 2002). In Content Analysis, both the participant and their context are taken into consideration when organising text into groups of related categories (Graneheim et al., 2017). Content Analysis is useful for directly analysing language use, relationships between words and concepts, and changes over time (Hurtworth & Mathison, 2011). The chosen unit of analysis was the whole interview with a focus on the manifest content which is concerned with data that is clearly and easily observable without the need to discern intent or identify deeper meaning (Kleinheksel et al., 2020). The Lead Researcher will familiarise with the data by reading the transcripts several times, the data will then be organised using a deductive approach. This approach was considered suitable given that the analysis will be guided by pre-determined questions which aim to explore the change perceived by the participant and the study's feasibility and acceptability (Elliot et al., 2001; Bowen et al., 2009). The results of the qualitative analysis will be presented and used to triangulate the quantitative findings.

3.4 SUD Data

SUD measurements were graphed and inspected to assess for within and between sessions habituation.

Extended Results

4.1 Visual Analysis

Visual analysis was carried out for the time series data collected from the repeated PCL-C (Weathers et al., 1994) and HADS (Zigmond & Snaith, 1983)* and FACT-G7 (Yanez et al., 2013). The data collected was graphed and visually analysed for change across time.

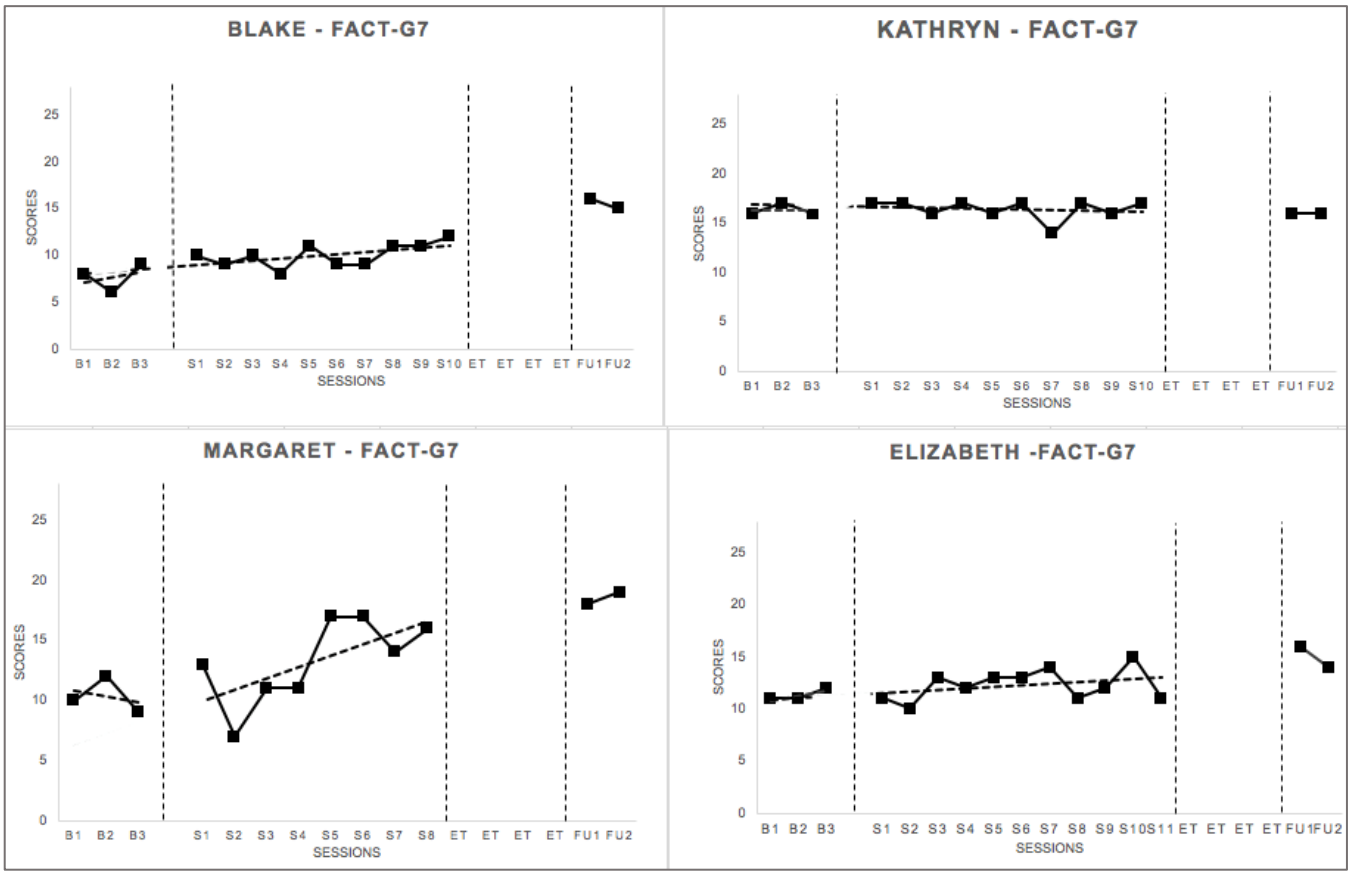
Did NET improve quality of life in cancer patients not in active treatment?

Visual analysis showed a slight upward and therefore improving baseline trend for Blake and Elizabeth, a stable baseline trend for Kathryn, and a slight downward and therefore deteriorating baseline trend for Margaret. All baseline trends were not found significant (see TAU-U calculations below) which suggests that baseline levels of quality of life were overall stable and the intervention phases did not need adjusting for baseline trends (Fingerhut et al., 2021; Tarlow, 2017). Visual analysis also showed a visible improving intervention trend for Margaret, a slight improving intervention trend for Blake and Elizabeth, and a stable intervention trend for Kathryn. Prior to intervention, Blake, Margaret, and Elizabeth were all in the "requires bed rest >50% of the time" range (0-13), whilst Kathryn was in the "require bed rest <50% of the time" range (14-17). At post-intervention, Blake and Elizabeth were in the "requires bed rest >50% of the time" range, whilst Kathryn and Margaret were in the "requires bed rest <50% of the time" range. At both follow-up time points, Blake, Elizabeth, and Kathryn were in the "requires bed rest <50% of the time", whilst Margaret was in the 'some symptoms but not requiring bed rest' range (18-21). It is worth mentioning that although the FACT-G7 cut off scores are defined in the context of how much bed rest participants required, none of the participants actually required bed rest. This has been further discussed in the *Extended Strengths, Limitations and Future Research* section (p. 102).

* The visual analysis of the PCL-C and HADS is included in the Journal Paper

Figure 6

FACT-G7 Trendline Graphs



Note. B = Baseline, S = Session, ET = End of Treatment, FU = Follow-Up. Session measures were collected at the beginning of each session.

4.2 Effect sizes

In terms of effect sizes (see Table 13), TAU-U $_{A\ vs\ B}$ was calculated for all participants on the FACT-G7, as the baseline trend was not statistically significant ($p<0.05$). Effect sizes for cancer-specific QoL as assessed by the FACT-G7 (Table 2) ranged between moderate to very large for Elizabeth, Margaret, and Blake which demonstrates effect in the desired direction (improvement), but no change for Kathryn.

Table 13

Effect Sizes

Participant	FACT-G7			
	Baseline Trend τ	**Baseline Trend *p***	**Tau-U**	**P-value**
Blake	0.333	1.000	0.8	0.04*
Kathryn	0.000	1.460	0.2	0.61
Margaret	0.333	1.000	0.6	0.15
Elizabeth	0.816	0.540	0.4	0.35

Note. Tau-U $_{A\ vs\ B}$ indicates a Tau-U with no baseline trend correction. Effect sizes were calculated using the following reference points: baseline phase vs intervention phase. On the FACT-G7 a positive sign indicates effect in the desired direction (symptoms reduction/improvement).

4.3 Reliable Change Index and Clinically Significant Change

RCI and CSC analyses were completed on all measures at several time points, including pre intervention (first baseline time point for the FACT-G7, and second baseline time point for the other measures), post intervention, and at the point of follow up (one month and two months after the end of the intervention). RCI and CSC were calculated using the following reference points: pre vs post-intervention, pre vs follow-up 1, pre vs follow-up 2.

Table 14 and 15 illustrate all RCI and CSC analyses. None of the participants demonstrated reliable change on the BPQ-Autonomic System Subscale; however, it is worth noting that both Margaret and Blake were never in the clinical range on the BPQ subscale. Blake demonstrated reliable and clinically significant change on the ECQ at all time points, whilst Elizabeth demonstrated reliable change at post intervention, but not at follow-up time points. Kathryn demonstrated deterioration at post intervention but not at all follow-up time points, and Margaret demonstrated no change. Finally, Blake demonstrated reliable change on the PTGI at post intervention and reliable and clinically significant change at the second follow-up time point, whilst Kathryn demonstrated reliable change at post intervention but not at

other time points, Margaret demonstrated reliable change at both follow-up time points, and Elizabeth demonstrated no change.

Table 14

RCI and CSC Analyses[*]

Participant	Time-points	FACT-G7	ECQ	BPQ SF Autonomic System Subscale	PTGI
Blake	Pre	8	59	37	39
	Post	12	29^{RC+}	33	60^{RC+}
	FU-1	16^{R+}	27^{RC+}	34	44
	FU-2	15^{R+}	34^{RC+}	29	63^{RC+}
Kathryn	Pre	16	65	47	20
	Post	17	78^{R-}	36	43^{R+}
	FU-1	16	62	37	33
	FU-2	16	61	43	29
Margaret	Pre	10	53	31	57
	Post	16	52	35	73
	FU-1	18^{R+}	56	31	87^{R+}
	FU-2	19^{R+}	44	31	102^{R+}
Elizabeth	Pre	11	87	49	29
	Post	11	69^{R+}	46	25
	FU-1	16	71	38	41
	FU-2	14	77	46	39

Note. The 'Pre' value represents the first baseline time-point for the FACT-G7, and the second baseline time-point for the other measures. RCI and CSC were calculated using clinical and non-clinical norms in published literature. ^{R} denotes Reliable Change. ^{C} denotes Clinically Significant Change. + or – indicate improvement or deterioration, respectively.

[*] The RCI and CSC values for the PCL-C and HADS are included in the Journal Paper

Table 15

RCI Values determining Reliable Change

Participant	Time-points	PCL-C	HADS		FACT-G7	ECQ	BPQ SF Autonomic System Subscale	PTGI
			Depression	Anxiety				
Blake	Post	3.85^{R+}	1.11	2.96^{R+}	1.30	5.45^{RC+}	0.53	2.14^{RC+}
	FU-1	4.58^{RC+}	1.11	3.70^{RC+}	2.60^{R+}	5.82^{RC+}	0.40	0.51
	FU-2	5.13^{RC+}	0.74	2.96^{R+}	2.27^{R+}	4.55^{RC+}	1.06	2.45^{RC+}
Kathryn	Post	2.93^{R+}	0.74	0.74	0.32	-2.36^{R-}	1.45	2.35^{R+}
	FU-1	2.20^{R+}	0	0.74	0	0.55	1.32	1.33
	FU-2	3.12^{R+}	0	1.11	0	0.73	0.53	0.92
Margaret	Post	4.03^{R+}	1.11	1.48	1.95	-0.18	-0.53	1.63
	FU-1	3.67^{R+}	1.11	1.85	2.60^{R+}	-0.55	0	3.06^{R+}
	FU-2	6.96^{R+}	1.48	2.96^{R+}	2.92^{R+}	1.64	0	4.59^{R+}
Elizabeth	Post	0.37	-0.37	-1	0	2.12^{R+}	0.40	-0.41
	FU-1	0.37	1.11	0.42	1.62	1.89	1.45	1.23
	FU-2	0	0.74	0	0.97	1.69	0.40	1.02

Note. RCI and CSC were calculated using clinical and non-clinical norms in published literature. ^{R} denotes Reliable Change. ^{C} denotes Clinically Significant Change. + or – indicate improvement or deterioration, respectively.

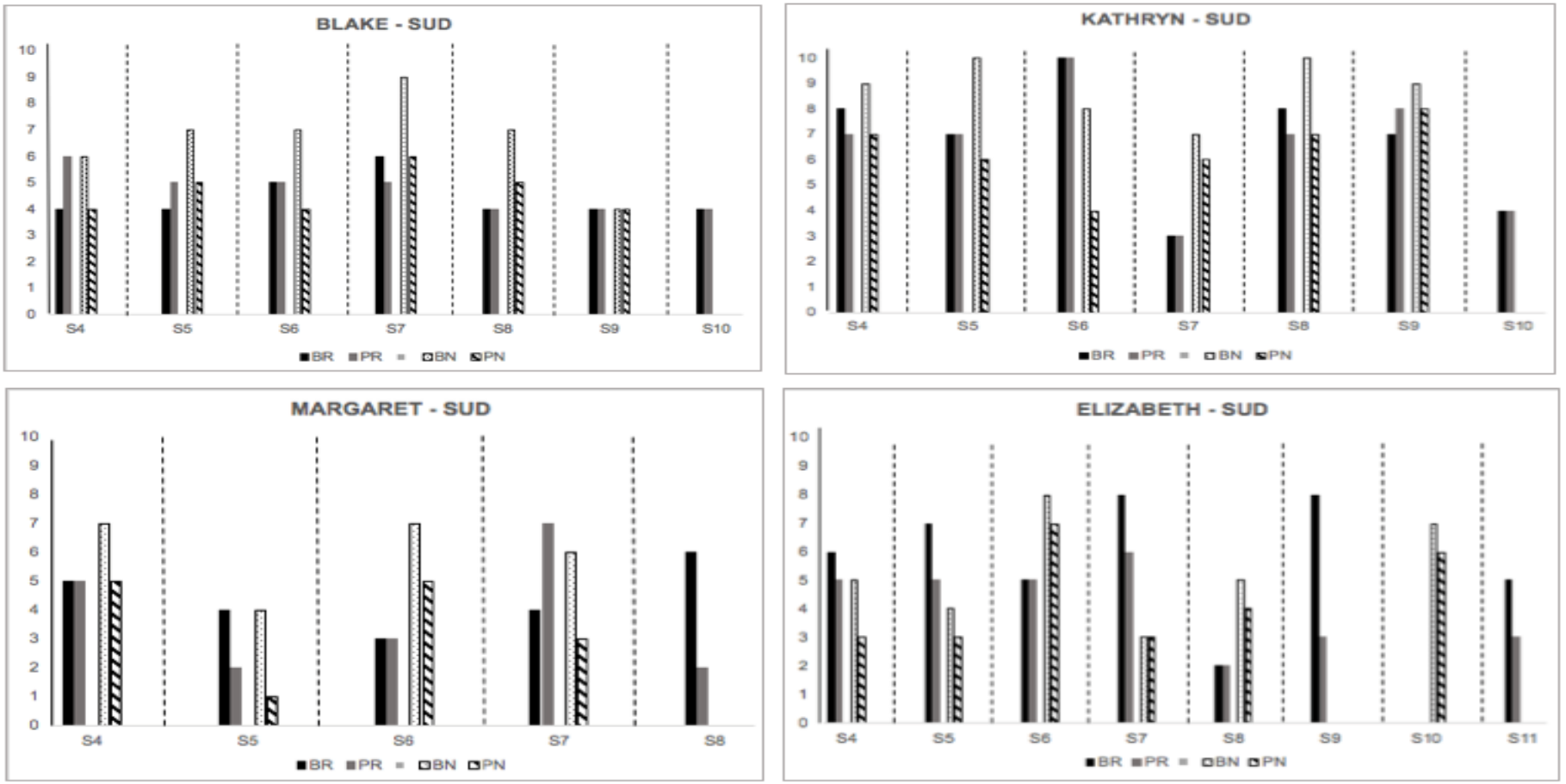
4.4 Exposure and Habituation

The SUD was used to assess for within and between sessions' habituation (Figure 7). Reductions for within-sessions subjective distress can be observed for all participants, all participants subjective distress appeared reduced at the end of the session. A few variations were noted between the pre and post reading depending on the event being read. The more the event was considered traumatic by participants, the more likely it was to see higher levels of subjective distress in the post-reading phase (e.g., Blake in session 4, Margaret in session 7). Some reductions were also observed for between-sessions subjective distress; however, this was again dependant on the nature of the event narrated/read (e.g., Kathryn's pre reading subjective distress in session 6 and 8). The observed within and

between session habituation is consistent with the theoretical underpinnings of NET, which suggest that its approach fosters habituation through the mechanism of change of exposure (Robjant et al., 2017).

Figure 7

Subjective Unit of Distress Graphs



Note. BR = Before Reading (plain black); PR = Post Reading (plain grey); BN = Before Narration (white background with black dots); PN = Post Narration (white background with black stripes)

4.5 Pre and Post-Intervention Lifelines

Participants' pre and post intervention lifelines are illustrated below (Figure 8[*]), the events have not been labelled for confidentiality reasons. However, the cancer related stones have been highlighted to illustrate pre and post-intervention differences.

Completing the lifeline process before and after the intervention represented an interesting source of qualitative data on the potential effectiveness, acceptability, and feasibility of NET for this client group. All lifelines changed at post intervention with all participants placing fewer events overall, and more specifically fewer stones. A change that was particularly noticed and discussed by all participants was associated with their cancer journey. All participants described their cancer journey through the use of multiple stones to represent each step (e.g., diagnosis, treatment) at pre intervention. Whilst at post intervention, Elizabeth, Margaret, and Kathryn all chose one stone to symbolise their cancer journey, and Blake chose a candle and a flower. Blake reflected on how having been able to process the trauma associated to her cancer journey, allowed her to "move forward" and interpret it more as a "loss of identity" (candle) and an opportunity to "rediscover herself" (flower). It is also worth noting how some events that were considered significantly traumatic, changed in their presentation at post-intervention. For instance, Kathryn placed four stones for one of the events at pre intervention, whilst placing only one at post intervention. Kathryn described experiencing no more flashbacks or nightmares associated with that specific event. Margaret described only wanting to place flowers on her post intervention lifeline, but acknowledged that some of the traumatic events she experienced made her who she is today and therefore still chose to include them.

Further information on participants' experience of the lifeline process was gathered through the adapted version of the Change Interview (Elliot et al., 2001). Most participants appeared unsure about the aim of the lifeline at first, but once the process was completed, they felt it helped them to place events into order and to clearly visualise them:

[*] Hand drawn by DD

"…there's a lot of memories that were very disjointed or I couldn't actually remember everything. You know, that particularly went on, but it was a really good way of reminding me and putting it all together." – Blake

"…I found it helpful to see things that were just in my mind. I could see them like on the timeline…Yeah, it was good to see the difference between the happiness with the flowers and the bad with the stones" - Margaret

When it came to complete the lifeline again at post-intervention, participants mostly described how much easier it was to establish what events they wanted to and needed to be placed on the lifeline, and how important it was to include more positive events, and therefore fewer stones. However, Elizabeth highlighted how completing the lifeline process again made her realise how she might have forgotten some significant events at pre-intervention.

"…It was easier to do, clearer. I knew whether I wanted a stone or a flower, or whatever. Before I was trying to remember bits and I was all over the place, whereas this time it seemed to come naturally." – Blake

"…I could see what was important to put down and what wasn't. The second time I mainly wanted the positives on it. I didn't want to put the negatives; it is not something I need in my life right now. I am just focusing on the positives." – Margaret

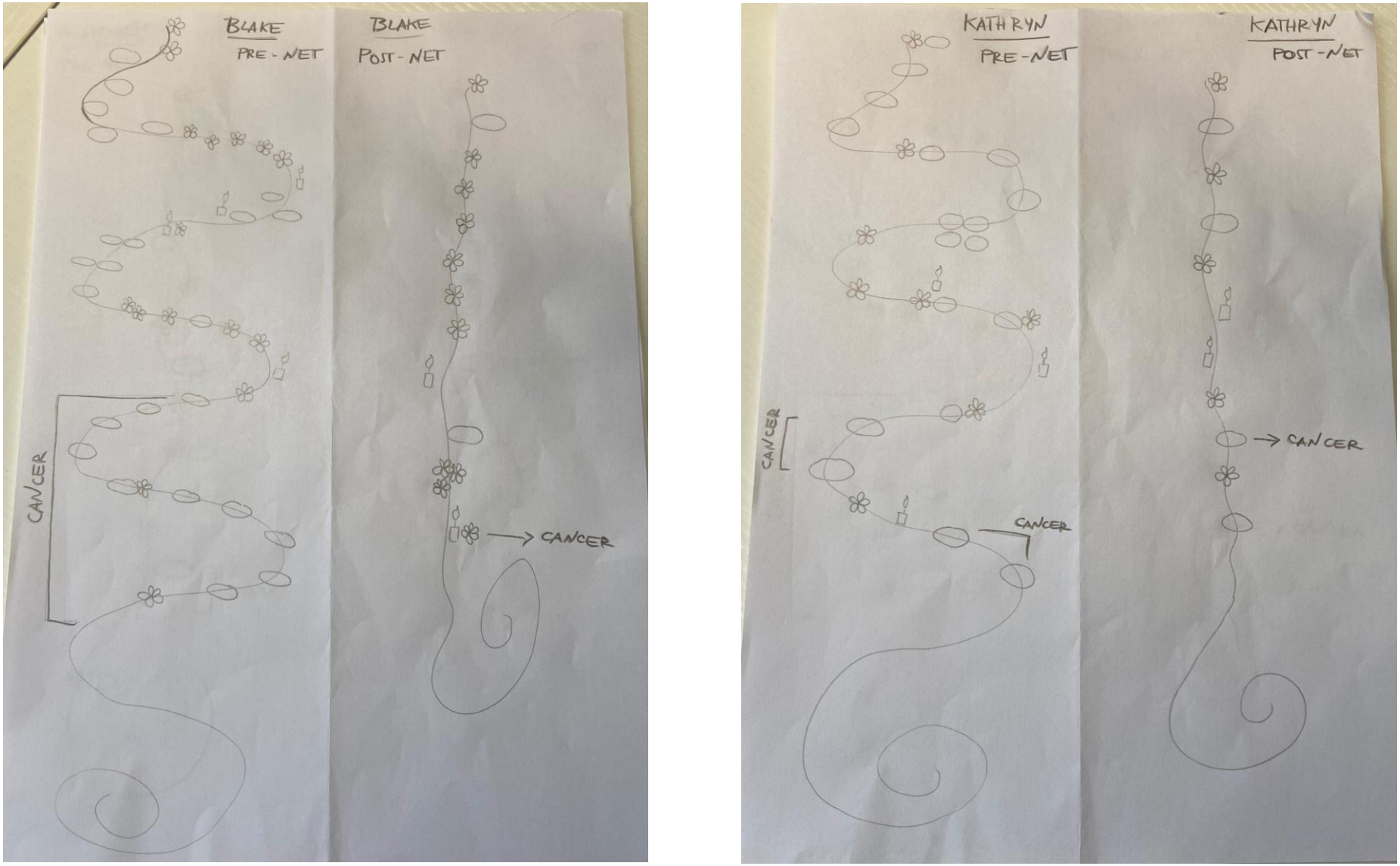
"…There were things that I wish I'd put in and there were things I had dealt with that didn't need to be revisited." - Elizabeth

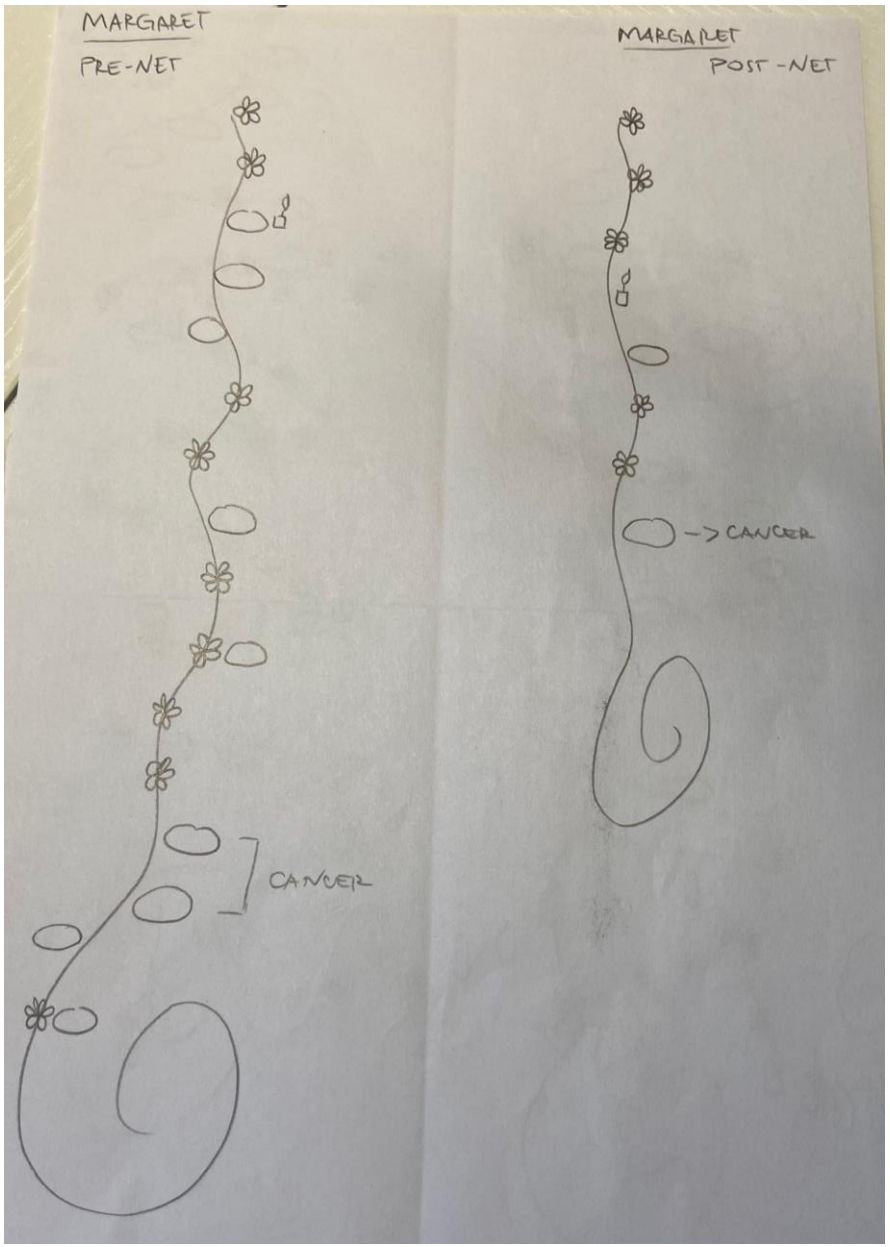
Finally, participants felt the use of flowers, stones, and candles to label the events were helpful and appropriate:

"Yes, that was that was a really good representation of. I think, I think it worked very well, yeah." - Blake

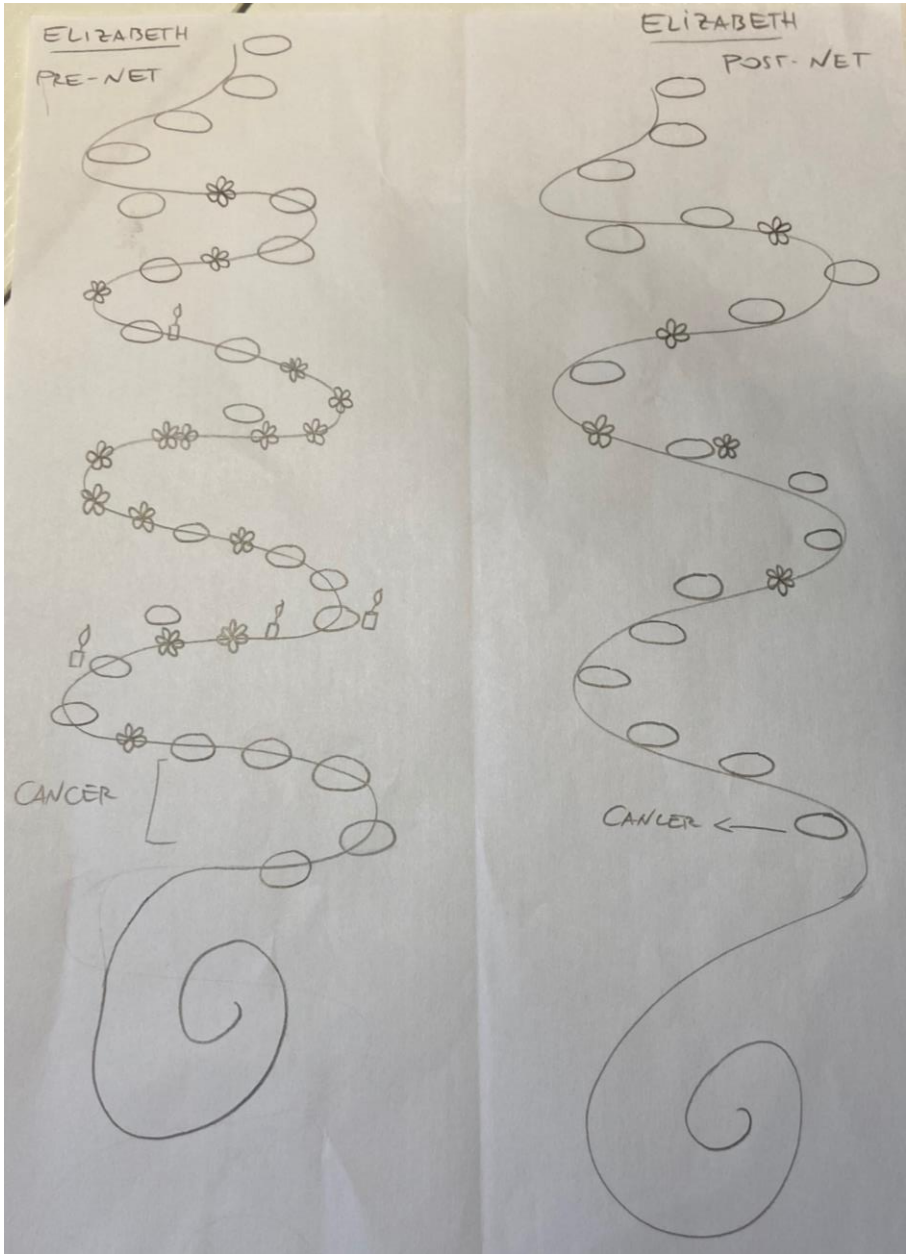
Figure 8

Pre and Post-Intervention Lifelines




MARGARET
PRE-NET
CANCER

MARGARET
POST-NET
-> CANCER


ELIZABETH
PRE-NET
CANCER

ELIZABETH
POST-NET
CANCER

4.6 Extended Data to Support the Feasibility and Acceptability of NET

Although participants acknowledged that engaging in NET was often "challenging", they overall gave positive feedback and stated that the change experienced was associated with having engaged in the intervention:

> *"I was frequently upset and emotional and discharging, but I consider that to be a good thing. The whole point of therapy was to get in touch with stuff … with the distress that has built up and thus trying to get rid of it" - Elizabeth*

> *"…definitely, I don't know what Dani did, but she has definitely changed the flashbacks." – Kathryn*

> *"Oh for sure. I don't know how you would get that from any other forms of counselling, I don't know how useful they are." - Elizabeth*

Some participants felt they could have benefitted from having had more sessions. This was mostly associated either with participants feeling some events needed to be processed more than once to achieve habituation as they were considered "more traumatic" (e.g., sexual abuse), or with participants struggling with endings:

> *"It is overwhelming dropping all this stuff and then you go ... There were times when her reading it back really brought back the stress, those perhaps were things that needed more than one visit." - Elizabeth*

> *"Yeah, I feel like I had enough time. I just feel in myself that I wish I could have had more time just because I think it was helping me. I managed to explain everything I needed to but I think for myself more time would have been good for me personally. I think it's an attachment issue, I get attached to certain things." - Margaret*

4.7 Change Interviews

Below in Table 16, all quotes from the Change Interviews conducted with participants can be found. Some of the quotes have been used to enhance other sections (e.g., Extended Discussion).

Table 16

Change Interview Data

Questions	Blake	Kathryn	Margaret	Elizabeth
How are you feeling in general?	Yeah, I'm feeling fine, actually. Yeah, yeah, absolutely.	That's an odd question at the minute. I've got a lot going on at the minute and I am not at home because we've had a flood. So, I am feeling very low and not good at the minute.	I am feeling a lot better in myself. I am great	That mixture of stuff as usual, I feel. I often feel sad about a lot of things, even like the state of the world has a saddening effect on me, so. Physically, I feel not too bad today, which is a good thing.
Looking back now, what was NET like for you? How did you find it?	At first, I was obviously a bit anxious, you know, not knowing Dani and didn't know what to expect, you know? But she's described it well. And I definitely was open to having a go at it because I've obviously wanted to improve where I was, basically.	Yeah. It was helpful. It helped massively. Going into things into detail and stuff. She did help with the PTSD side of things and with what happened with my uncle.	It was really good. It has definitely helped a lot. It was easy to understand, it was simple, yeah.	I was frequently upset and emotional and discharging, but I consider that to be a good thing. The whole point of therapy was to get in touch with stuff … with the distress that has built up and thus trying to get rid of it

	I built quite a good bond with Dani, I think very quickly. She has a very nice welcoming manners.			
Would you recommend NET to someone you know?	Oh, definitely, yeah, yeah, I was, you know, quite shocked with the results actually.	Yeah. I've already told my dad. I told him it would probably help him out, it's worth it. I told him even if you don't believe it at first.	Yeah. I would. I already have actually, to a lady that I know at work. I recommended if she can get into it, then it is really worthwhile	Certainly. I'd have to qualify that and say that it depends on the person, what they are looking for. I suppose.
Was Dani clear about each step? Did you know what to expect from each session?	Yes, yes she did. Everything was clearly sort of explained to me as we went along and what the sort of expectations were basically, yeah.	Yeah. Very good. Not really, I think I just tried to come in with an open mind more than anything and just sort of work together with whatever Dani had planned. I've been to counselling before and it never worked out, as I said I am quite negative toward things so I felt nothing would help me. I just opened my mind to her.	Yeah. She [Dani] would always explain like next time we'll do this and yeah.	My instinctive answer is yes because I can't remember her saying to me that's what we're going to do.
NET has a psychoeducation component. Did it make sense to you? Can you	Yes. Yeah, very much. I think I'm quite aware of that anyhow where I am and because of I've been	Yes, it was mind blowing at first. I can't remember the technical words.	Yeah. So like things with my body [the impact of trauma on the body] that have changed.	I had some experience of this before in something called re-evaluation counselling when I

remember any of it? What was the most important thing you remember?	through quite a few things that you know during my life and I think I've just learnt myself how it affects my body and so yes		[the most important thing] Just talking about certain things I thought about myself, like I used to think I was selfish, but I learned that I was just prioritizing myself, that was a big one for me. She [Dani] thought me that because of what I have been through, I had to learn to put myself first	worked for the Department of Employment. I learned how basically we are built from childhood onwards and have experiences that stick to us. Sometimes they are good and sometimes they are not. Dani was able to add some more information to my previous knowledge. I was able to make full use of what was on offer. There wasn't anything that was outstanding otherwise it would have sprung to mind.
Looking back now, what did you think of the lifeline exercise? How did you find using stones and flowers to symbolise different events?	Hmm, that was some very interesting actually. It was quite surprising because there's a lot of memories that were very disjointed or I couldn't actually remember everything. You know, that particularly went on, but it was a really good way of	Well, I was a bit, I don't know. I had never really done anything like that and I thought I was embarrassed. I didn't know what to say or what to put down to be honest. I didn't understand at first, but then as we went through everything, I did.	It was okay. It was difficult to think of certain things I felt like I didn't, I put things down that I then realise I didn't need to. But yeah, I found it helpful to see things that were just in my mind. I could see them like on the timeline.	I have done a lifeline before as part of my previous training in fact. So, it wasn't new to me. It was helpful to look at whether something was really a stone, really a horrible experience. There are events in your life that

	reminding me and putting it all together. I: It helped you understand. maybe connections and things you hadn't realized before. Blake: Yeah, yeah, exactly. Re stones and flowers: Yes, that was that was a really good representation of. I think I think it worked very well, yeah.	I remember I told her at first she didn't have enough stones in the box because I've got a lot of baggage. Dani guided me through and helped to choose where to put things.	Yeah it was good to see the difference between the happiness with the flowers and the bad with the stones	appear much smaller but then when you examine them. We didn't have much time to examine everything, so small things would fall by the wayside.
How did you find having to narrate each event in such details?	Very hard caused quite a lot of anxiety. I went to my doctor in the end because because of having to go reliving those situations again caused a lot of emotion. And so I went to my doctor and then they did put me on something for my anxiety because it was quite bad at that time.	It's quite hard getting it read back to you definitely. The most difficult one was the one with my uncle	I found it quite difficult because I can't remember a lot of the detail, and it's quite frustrating because I've got it in my mind so I supposed it's hard to saying it aloud. When I went away from that session, I realised I've said it aloud and it was kind of a relief.	No, I didn't [find it challenging]. I know it is good to get it out of me because if I leave it inside me, then it prevents me from living. I need to get stuff out and the opportunities to do that are very rare.

	It was really stressful, being there and smelling and tasting. She (Dani) did very well and give some good advice and always made sure that I was ok to carry on or not … We talked about grounding as well.		It was helpful to have Dani asking me to go back to where I was trying to explain things and guide me back into it. I didn't feel pressured, it was just a kind reminder.	
What was it like having Dani re-read your story back to you each session?	Hard again at time. It depended on what it was that we were discussing. But it felt better than when we first went through it, if you like. It seems to get better … gradually		I felt like I was numb to what she was saying and almost like it wasn't about me. The numbness made it easier to listen back to it.	I think it's a good idea. It is again part of the process. It is overwhelming dropping all this stuff and then you go, god I am exhausted, but then you think it allowed me to put things in a better perspective. There were times when her reading it back really brought back the stress, those perhaps were things that needed more than one visit.
You were asked to fill in several questionnaires before, during and after each session the intervention. What did you think of them?	I think so. Sorry I'm a bit. I'm sure she did. Because it was to obviously measure how where I'm, you know, sort of at after each time. And	I am not really sure. I just thought 'oh this is the annoying part'. Very boring but straight to the point	I can't remember when she told me but I felt like I knew anyway. Sort of to see how my feelings and that would change over	I hate them. I hate them. And you know why? Because I look at those questionnaires and I think they are not designed for people in my position.

	I assume when she looks at it now that there will be a big change to when I first started. So it's a good way of knowing how well it works or not works, yeah. Some were difficult to answer depending on how it was on that particular day		time, going through everything. I understand they are important. Also it was helpful to realise others might feel like me. Like the saliva in my mouth and how it makes me feel sick. I just thought that was just me but it wasn't, I was surprised by that.	Many times I wanted to say does that mean this? Because I interpreted this as that.
Do you believe enough time was allocated to the completion of the intervention?	Umm. Yes, I think so. It was for me, yes, definitely	I would have probably preferred more. For me, I feel like I needed more time. I felt it was rushed towards the end, but again I did miss a few sessions.	Yeah I feel like I had enough time. I just feel in myself that I wish I could have had more time just because I think it was helping me. I managed to explain everything I needed to but I think for myself more time would have been good for me personally. I think it's an attachment issue, I get attached to certain things.	I could carry on with this much more and I think it would not be at the same level of distress. Because I keep it under, and because of that I no longer know how I feel. I could have done with it going on longer, not necessarily longer sessions because there is a limit to how much Dani could take. She gave me loads of time, more than I think each session must have been planned for.
Was there any point where you thought you	I think when we hit the painful stuff and I	Yeah, there were loads of times where I could have	No, well there was one time where it's not like I	No, I would say the opposite. She did struggle

could not carry on? If so, what helped you to keep going?	became, like I said, quite anxious. I did wonder whether I was doing the right thing or not. I did. I wanted to actually obviously improve. It was the right time for me to do it.	easily ring up and say I don't want to come. You have to kind of motivate yourself, really.	didn't want to carry on but I just didn't want to go one morning. What motivates me, what motivated me during chemo as well, is I make sure I get myself up every morning, so I did that and I was able to get ready. Even when I am low in mood, I will still get myself up and ready, put makeup on and do my hair.	with keeping me to any sort of time, I think I could still be talking to her
What are your thoughts about participating in this interview?	Fine. It's part of Dani's process of developing in your area of work. So I haven't got an issue with that at all. It's not a problem.	It's embarrassing, but I don't, I don't know, to be honest.	Fine. I wasn't nervous or anything. I didn't overthink it too much	I think it's essential when you have a project like this. If you don't know whether something is working well, then you can improve it. I do find it a bit scary that I might not express myself well enough. It's been a very valuable experience and I would love more of it. I'd love for more people to have more of it.
Have you noticed any change(s)?	Yeah, a lot. I'm getting my confidence back slowly and I've noticed that cause I'm actually starting	Yeah. I used to have flashbacks a lot about what happened with my uncle, and I don't get	Yeah. My mindset is totally different now. I used to sit scrolling on my phone all day and not	Yes, I am able to, at the moment things are happening. When I am triggered by something, I

	to push myself to do things that I would want to have bothered to do before and I'm getting out of the house a little bit more, I still struggle, but I am actually actively trying to do different things.	them anymore. I am having a lot of stress at the minute so this interview probably came at the wrong time.	wanting to do housework, just being on my own. I now find because I think I am worth it, I don't let Facebook define me. In the last couple of weeks I got into reading quite a bit.	still have the awful feeling, the fear, the depression, the hopelessness, but I know it's going to pass, I know I am going to be able to get some distance, I am going to come through. Also, it has confirmed that how I feel about myself it's because of what has happened to me and not because of the way I naturally am. I am still working on it, the way I feel about myself.
If you have noticed a change, how important is this to you?	Definitely, yeah, yeah.	Yeah, massively.	Yeah, very. It's important for me and because I have a little girl. It's important for both of us that I don't just sit there and do nothing. Let's get out and do something.	Well, I feel as though I've wasted my life [feeling like this]. I can't escape the dead hand of the past.
Were you surprised by the change(s)?	Yes, I think I was because, if my husband noticed that I'm trying to get out a bit more and driving the car, going out a bit more and doing stuff, you know? And it just	Yeah, I actually was. Because I am usually quite negative about things. I didn't believe I could get out. I thought no one could help me.	Yeah. I always thought I'd just be basically sailing thought life wanting for it to end. I know that sounds sad, but yeah. I couldn't wait to get life over and done with. The work with	

	suddenly sort of slotted together		Dani made me realise my self-worth	
Do you think the change you've noticed is related to NET, or other aspects (i.e., things that happened in your life during that time, other support received, changes in your life circumstances)?	I would say the majority is Dani, but also my husband's been through trauma and he's sort of a lot better than he has been. So. It's obviously had a knock on effect.	You know, it's definitely, I don't know what Dani did, but she has definitely changed the flashbacks.	It's mainly been going and speaking to Dani, definitely. And then sit and think to myself about things that are important. I think having it all out in the open, speaking to Dani, made me think a lot about it and realise I want better relationships	Oh for sure. I don't know how you would get that from any other forms of counselling, I don't know how useful they are.
Was any part of NET particularly helpful for you?	I think the narrative actually, surprisingly. Having it all read back after you've sort of gone through it and sort of put it all together and almost put it to bed if you like, you know? It's not going to go away, but I am in a happier place now and it's not going to come out at the wrong times	Yeah. Definitely the explaining of like trauma and how it affects your brain and how I now process things differently. So, that education. It might help me if I go through something traumatic again, I might be able to help myself better	Just talking through everything and Dani helping me to see the different perspectives.	Dani is very good with the run up to the session, you know, before getting into anything. She's very good at just being a human being and being interested in you and giving off herself, light stuff. Having the lifeline as the mechanism was helpful even though it wasn't perfect, not for me.

Was any aspect of NET unhelpful for you?	Umm, I wouldn't say as much as unhelpful, but I suppose not interesting was doing the questionnaires	I didn't like the questionnaires and being recorded as well. I don't know why.	I don't think any. I can't think of anything that's not been helpful for me	The bloody questionnaires simply because they took up time and they were not specific enough for me
Was there anything unexpected or that took you by surprise?	Yeah, again, the lifeline (second). The results are quite massive compared to when I first did it. There were less rocks and more flowers, you know.	Yeah. I have had counselling before and stuff in the past and they have not been very helpful. I felt quite patronised.	Yeah, thinking about the nausea, the questions around my body.	No
NET focused on the traumatic experiences you have gone through in life. Of all the events you discussed with Dani, what was the most important one?	I think the most important one was probably when my daughter was very very ill and I hadn't realised how much I'd bottled that up as well. She nearly died, so it was obviously very traumatic. That was the fields because I had to drive her to hospital and there were all these rapeseed fields and so whenever I drove pass some, my chest would automatically become very tight, so now I understand the connection	Definitely the one with my uncle. That was definitely controlling everything else. To be honest, I don't think about any of the other traumatic events anymore, so that's definitely good.	The events with my daughter's dad. It was a violent relationship and it had a massive effect on my life. I had never spoken about it in detail to people, it was a new experience.	The very early life experiences … that was the most important because it's the most fundamental and then the death of my father. I did not expect to react in that way. I thought I had dealt with it, but there was so much more to deal with there.

Was there a particular flower that was very important?	My first thoughts go to the special times I had with my grandma, she was a really lovely person and I have very lovely memories of the time I spent with her	My two girls	Yeah, my daughter. She is the important one. She is literally my priority, everything revolves around her. She saved my life, the severity of the treatment I have been through, the chemo, I only fought because of her	Because I am approach things in a negative way, the flowers had almost no impact, no lasting impact. I can't pick one.
Was putting together the lifeline different the second time? Can you tell me more about those differences?	It was surprising as I said. It was easier to do, clearer. I knew whether I wanted a stone or a flower, or whatever. Before I was trying to remember bits and I was all over the place, whereas this time it seemed to come naturally	Yeah. There weren't as many rocks anymore, which is a good thing.	Because I had already discussed everything on the timeline already, I could see what was important to put down and what wasn't. The second time I mainly wanted the positives on it. I didn't want to put the negatives, it is not something I need in my life right now. I am just focusing on the positives	Umm yeah. There were things that I wish I'd put in and there were things I had dealt with that didn't need to revisit.
Is there anything Dani could have done differently? Or is there anything that you think should be done differently to adapt NET for use with cancer patients?	I don't think so. I don't think there's anything different that could have made the process any easier or less painful or anything. She always checked, like I said, to	Maybe if the focus was on cancer, it might need to focus only on the cancer. But because you have a timeline, you can't just focus on the cancer side of things. It was perfect for me because I needed	No, nothing that I can think of now. Maybe more sessions but that's just me. Like I said before I have attachment issues.	Focusing on the cancer, there is a danger that it will dominate everything. You are trying to resolve some stuff from the past that is preventing you from dealing with your feelings about cancer.

	make sure I was in the right place to carry on. I don't know. That's a difficult one because everyone's different, aren't they? What their needs are maybe not be the same as my needs, it depends on their cancer journey. I think you just have to asses on a 1:1 basis. Dani was very good ad judging, what to do and what to ask. That sort of things.	to also focus on other things, I needed to process other things properly other than then cancer.	

4.8 Quality Check Results

As mentioned in the Methods section, quality scales were used to ensure that the intervention delivered matched with the original NET protocol (Schauer et al., 2011). The quality check was carried out by Dr Cathryn Young, a qualified Clinical Psychologist working in a local Step 4 Psychological Therapies service, through the use of the scales (Appendix G) developed by Prof Thomas Schröder (primary research supervisor). Step 4 provides psychological interventions for individuals who could attract a diagnosis of complex trauma due to their history of trauma, and thus Dr Young has extensive experience of using NET in her clinical practice.

Dr Young reviewed all psychoeducation sessions apart from Blake's as this was not recorded (DD forgot to record the session). Dr Young also reviewed all lifeline sessions and several randomly selected narrative-exposure sessions. Dr Young reported that the pre-established fidelity criteria as assessed by Prof Schröder questionnaires were met for all reviewed sessions.

Extended Discussion

5.1 Extended Discussion of clinical effectiveness

The study's further aims involved evaluating the effectiveness of NET in reducing symptoms of EA, and in improving QoL and post-traumatic growth in cancer patients not in active treatment.

In terms of QoL as assessed by the FACT-G7 (Yanez et al., 2013), the findings demonstrated a more visible improvement for Margaret, slight improvement for Blake and Elizabeth, and no change for Kathryn. Where improvement occurred, it was also maintained at follow-up. It is worth noting that the FACT-G7 mostly focuses on QoL associated with physical symptoms (e.g., "I have pain", "I have nausea") and fear of recurrence (e.g., "I worry that my condition will get worse"). Most participants described experiencing several side effects (e.g., pain, fatigue, nausea) as a result of the cancer treatment they received. They often felt that although the intervention was helpful from a "psychological perspective", they still experienced pain and fear of recurrence which inevitably had a negative impact on their overall QoL. This is in line

with previous research with cancer survivors around fear of recurrence (Cordova & Andrykowski, 2003; Ghazali et al., 2013; Humphris et al., 2003; Vickberg, 2003). A metanalysis by Koch and colleagues (2013) revealed that even years after initial diagnosis, cancer survivors continue to report fear of recurrence in modest intensity. The authors found that predictors of higher levels of fear of recurrence were associated with lower level of optimism and education. Thus, it could be argued that a measure on psychological wellbeing might have been more appropriate to assess participants' QoL as improved by engaging in NET. Similarly to the FACT-G7 (Yanez et al., 2013), participants found the BPQ-SF (Porges, 1993, 2015) not applicable to their experience. Several of the physical symptoms assessed by the ASN subscale (e.g., "I have a sour stomach", "I feel shortness of breath") were seen as a side effect of the cancer treatment received and not as a trauma response. The BPQ SF was developed by using undergraduate students (Cabrera et al., 2018), which it could be argued are not representative of the cancer survivors' population. This might explain why no change was found on the BPQ SF (Porges, 1993, 2015) in this study.

Fear of recurrence may also explain our results around existential anxiety as assessed by the Existential Concerns Questionnaire (van Bruggen, 2018), Blake was the only participant who experienced the most change at post intervention and at both follow-up time points. It could be argued that time since active treatment might have had an impact on Blake's ability to become more optimistic about her future and potentially less concerned about life itself, including its meaning, death, and lack of certainty. Being physically unwell to the point where threat to life is experienced can have a major impact on an individual's sense of self and assumptions around their invulnerability; it may make them more fragile and concerned about their future and existence (Khan, 1964; Missel et al., 2022; Perrotta, 2019). This might explain why other participants did not experience change in terms of EA as their time since active treatment ranged between less than one year to one year.

In terms of post-traumatic growth as assessed by the Post-traumatic Growth Inventory (Tedeschi & Calhoun, 1996), the findings were somewhat promising as Blake, Margaret, and Kathryn demonstrated reliable change; however, change was not maintained at follow-up for Kathryn. It could be argued that the second lifeline

also contributed to our data towards the potential effectiveness of NET on improving post-traumatic growth. All participants' view of cancer appeared to change at post intervention. As shown in Figure 7 and reported in the Change Interviews, participants used one stone (Kathryn, Margaret, and Elizabeth) or a different label (Blake used a flower and candle) to symbolise their cancer journey. Moreover, participants' number of stones on their lifeline was reduced at post intervention. Although participants may have achieved post-traumatic growth as a consequence of other factors (e.g., time since active treatment), it could be hypothesised that the NET process contributed to participants' post-traumatic growth. Indeed, post-traumatic growth is posited to happen when individuals change the meaning of the trauma to maintain positive assumptions about themselves and the world (Jim & Jacobsen, 2008; Tedeschi & Calhoun, 2004).

The findings around, within and between session habituation as assessed by the SUD (Wolpe, 1969) demonstrated that NET can foster habituation through exposure. However, this may depend on the nature of the event explored and processed. Thus, the findings appear to confirm that safely confronting trauma memories through exposure-based interventions, as opposed to avoiding them, is an effective strategy which decreases subjective distress, particularly memory intrusions such as flashbacks and nightmares (Dalgleish et al., 2008).

Overall, this study has highlighted how NET is mainly tailored to reduce symptoms of traumatic stress and not other comorbid symptoms. At least three demonstrations of effect are needed to draw conclusions about treatment effectiveness in single case design (Kratochwill et al., 2010), and this was only achieved and maintained at follow-up for traumatic stress symptoms as assessed by the PCL-C (Weathers et al., 1994).

5.2 Extended Clinical Implications

Throughout the recruitment process, it soon became evident how individuals who described experiencing symptoms of traumatic stress during and after cancer were mostly those who had a history of trauma (e.g., sexual abuse, neglect). Eligible participants described how having been diagnosed with cancer and having to

undergo treatment triggered memories from past abuse and led to feelings of vulnerability, same as experienced in childhood. This is in line with previous research on trauma in cancer services, several authors have highlighted how cancer patients may experience re-traumatisation during cancer as a result of prior non-cancer related traumatic experiences (Cordova et al., 2017; Hanna et al., 2020; Regal et al., 2020). For instance, Kohler and colleagues (2021) found that women with a history of sexual abuse were more likely to either be re-traumatised during Pap screenings for cervical cancer, or did not attend them altogether to avoid re-traumatisation and traumatic stress symptoms (e.g., flashbacks, dissociation). A qualitative study by Dionigi and colleagues (2019) described the experience of a woman with a history of intimate partner violence who chose to decline breast reconstruction after the mastectomy with the aim to make herself unattractive, and therefore keep her violent husband away from her.

From a theoretical perspective, cancer patients' experience/symptoms could be understood in the context of the trauma/fear network (Ehlers & Clark, 2000; Foa & Kozak, 1986). As mentioned in the *Psychological Theories of Trauma* section (p.46), the memories stored in the fear/trauma network are characterised by similar sensory-perceptual, cognitive, and emotional components which unintentionally activate (e.g., leading to dissociation, flashbacks, nightmares) when the individual perceives to be under threat (whether the threat is real or not). This occurs because trauma memories are overwhelming, and therefore become poorly incorporated and organised into the autobiographical memory system. With more traumatic experiences, more and more components become associated with one another. What this means is that when one component activates, the entire trauma/fear network activates. It could be argued that this is why cancer patients with a history of trauma are more likely to experience symptoms of traumatic stress during and in the aftermath of cancer. The NET approach (exposure/habituation and autobiographical integration) reverses this process by contextualising trauma memories and integrating them into the autobiographical memory. Uncovering all significant life events leads to the extinction of the pathological fear network and therefore facilitates long-term healing; highly arousing events are uncovered, revisited, processed and finally contextualised, which means that their components can be intentionally retrieved without causing emotional distress (Foa & Kozak, 1986;

Schauer et al., 2011). This is why exploring and processing all events on the lifeline and not only the cancer-related events is crucial to facilitate the extinction of the pathological fear/trauma network. The benefit of uncovering all significant life events was recognised by participants in this study; for instance, Kathryn stated *"… you can't just focus on the cancer side of things. It was perfect for me because I needed to also focus on other things, I needed to process other things properly other than the cancer"*. Understanding this process makes it even more clear why assessing cancer patients' psychological history (e.g., "is there a history of trauma that is relevant to their current difficulties?") is fundamental to provide appropriate and comprehensive care as recommended by both NICE (2004) and the NHS Long Term Plan (2019).

As cancer-related PTSD can lead to reduced treatment compliance and less adherence to a healthy lifestyle (Chen et al., 2017), a Trauma-Informed Care (TIC) approach may enhance cancer care and treatment outcomes (Davidson et al., 2022). The most cited framework for TIC has been developed by the US Substance Abuse and Mental Health Services Administration (SAMHSA; 2014). This framework has highlighted the importance of firstly implementing change at the organisational level (e.g., by changing culture and environments) to then obtain change at the clinical level. The SAMHSA (2014; p.9) defined TIC as a "program, organisation, or system that realizes the widespread impact of trauma and understands potential paths for recovery; recognises the signs and symptoms of trauma in clients, families, staff, and others involved with the system, and responds by fully integrating knowledge about trauma into policies, procedures, and practices, and seeks to actively resist re-traumatization". The SAMHSA established six principles which underpin the TIC approach; these include: safety (prioritising the physical, psychological and emotional safety of service-users and their families, and staff), trustworthiness (being transparent about the organisation's policies and procedures), choice (service-users are supported in shared decision-making), collaboration (staff and service-users working together), empowerment (giving staff and service-users the opportunity to share their views and perspectives), and cultural, historical, and gender Issues (moving past stereotypes). Although the TIC approach is referred to in several policies at a national level, in both NHS and non-NHS organisations, there is no robust evidence to support its effectiveness. The lack of evidence may be

associated with funding commitment and resource allocation as established by commissioners and funders (Emsley et al., 2022).

In the context of cancer care, a TIC approach could enhance cancer patients' experience by diminishing re-traumatisation. Indeed, gathering information around individuals' prior traumatic experiences can guide and shape decision making around diagnostic testing and cancer treatment (Cordova et al., 2017). As inquiring about previous traumatic experiences could in itself be a source of re-traumatisation, Lewis-O'Connor and colleagues (2019) proposed a method of gathering information which is rooted in the six SAMHSA's principles of TIC, and allows patients to take control over what they wish to disclose or not. They suggested using broader questions to promote the patients control over the potential intrusiveness of more trauma-focused questions; questions included "Have you had any life experiences that you feel have impacted your health and well-being?" and "Can you share how do you feel this event(s) impacts you now?". Despite the growing interest around TIC approaches in the context of cancer care, the literature on this topic remains limited and in its infancy. A recent scoping review by Davidson and colleagues (2022) looked at the application of TIC approaches in the context of cancer care in Canada and United States. The authors reviewed thirteen studies, eleven of which had been published in the last five years which has highlighted how the interest around TIC in the context of cancer care is gradually growing but still limited. Only five studies operationalised TIC using the SAMHSA's framework (2014). Although using the SAMHSA's framework could lead to improved consistency and integrity around application and operationalisation, it may not be fully applicable in the context of cancer care as it may lack important cancer-specific elements.

Although NET does not propose a stabilisation phase prior to starting the intervention, this may need to be assessed on a case by case basis. Stabilisation is considered a core component of trauma-focused interventions and recovery. Herman (2015) identified three stages of trauma recovery: safety and stabilisation, remembrance and mourning (also defined as exposure or trauma confrontation stage), and reconnection. The safety and stabilisation stage is often considered crucial because it prepares clients for trauma-specific treatment by providing them with psychoeducation around trauma (e.g., flight, fight, freeze responses) and

appropriate coping strategies (Brouzos et al., 2021). The aim of this stage is to reduce the manifestation of traumatic stress responses (e.g., dissociation) and use of unhealthy coping strategies (e.g., self-harm, substance misuse) during the exposure stage (Phoenix, 2007). Experts in trauma-focused interventions seem to agree on the idea that a phased approached to trauma recovery, as the one illustrated by Herman (2015), is needed to achieve therapeutic change (Cloitre et al., 2011). This would suggest that a non-phased approach (e.g., no stabilisation) would therefore be ineffective. These assumptions are not in line with the findings of this study as NET was found to be moderately to largely effective. Our findings are in line with previous literature which supports the idea that a phased model is not always needed to achieve trauma recovery/traumatic stress symptoms reduction (DeJongh et al., 2016; Orang et al., 2018; Lely et al., 2019).

Although the NET protocol does not include a formulation “stage”, clinicians may want to assess whether this is needed on a case by case basis. Johnstone and Dallos (2014) defined formulation as a set of hypotheses drawn from various psychological theories about what might have caused and is now maintaining an individual’s current difficulties. Formulations are collaboratively developed with the client and their main purpose is to inform and guide the intervention. Formulation is considered a key component of clinical work and often considered as an intervention in its own right (Cole et al, 2011; Thew & Krohnert, 2015). Although the evidence on clients’ experiences of formulation is currently limited, a few studies have suggested that clients mostly find the formulation beneficial as it helped them to gain a greater understanding of their difficulties by identifying the link between past experiences and current difficulties, and as it led to them feeling understood and validated which consequently led to the strengthening of the therapeutic alliance (Pain et al, 2008; Kahlon et al., 2014; Redhead et al., 2015; Thew & Krohnert, 2015). Although NET allows for the exploration of early life experiences through their narration, one could argue that it does not necessarily support the individual to fully understand the links between past experiences and current difficulties. In this study, some of the participants could have potentially benefitted from a more structured and visual approach to formulation (e.g., using diagrams) in order to understand their own maintaining and/or relational patterns. This was often brought up by Elizabeth who

felt she could have benefitted from spending more time on early life experiences to fully understand the link between them and her current difficulties.

5.3 Extended Strengths, Limitations and Future Research

This study used different methods of evaluation (e.g., visual analysis, effect sizes, change interviews) which is considered a strength. Having different methods of evaluation could be considered in the context of triangulation. Triangulation in the context of research means using more than one approach to researching a question/aim. The aim of triangulation is to increase confidence in the findings by providing a more comprehensive picture of the results (Heale & Forbes, 2013).

Although research on trauma has suggested that trauma-focused intervention may need to last between five to twelve months (Cloitre et al., 2011), this study has highlighted how perhaps this is dependent on clients' needs and presentations as the number of sessions ranged between eight and eleven (between two to three months). This is in line with previous research on NET as sessions' number has ranged between four and twelve (Schauer et al., 2011; Lely et al., 2019; Raghuraman et al., 2020). However, it is worth noting that the length of intervention may vary depending on clients' needs and level of distress. As mentioned in the "Extended Data to Support the Feasibility and Acceptability of NET" section (p. 82), some participants may need to process an event more than once depending on the associated level of arousal. Some events may be considered as 'more traumatic' by clients and therefore one could argue that more than one visit could lead to better outcomes in the context of the extinction of the fear network. Overall, NET as a short-term trauma intervention could be of use to those services which may lack resources to offer longer-term therapy, including psycho-oncology services.

Alongside the limitations already identified around the FACT-G7 (Yanez et al., 2013) and its applicability in this research, it is also worth noting that the cut-off definitions did not match participants' actual experience or symptoms. For instance, although most of them scored in the "requires bed rest <50% of the time" at both follow-up time points, none of the participants actually required bed rest. Other measures which aim is to assess psychological wellbeing might have been more

appropriate and applicable for the purpose of this study. For example, the Short Warwick Edinburgh Mental Well-being Scale (SWEMWBS; Stewart-brown et al., 2009) is a seven-item measure of psychological and eudemonic well-being which was developed from the larger Warwick Edinburgh Mental Well-being Scale (Tennant et al., 2007). Items include statements such as “I have been feeling relaxed”, “I have been thinking clearly”, “I have been closer to other people”, and “I have been dealing with problems well”. The SWEMWBS has showed good psychometric properties including good internal consistency (Cronbach’s alpha = .89).

Some have argued that the SUD represents an important tool in the context of clinical practice, and especially in the context of trauma processing, as it allows to measure the level of distress before and after target memory processing, and therefore can provide valuable information about memory reprocessing (Kim et al., 2008; Thyer et al., 1984). However, the measure has been criticised for its lack of reliability and validity as a valid measurement of treatment outcome (DeBell & Jones, 1997; Lohr et al., 1992). Heart-rate monitoring has been argued to be a more effective and reliable method to assess physiological arousal and memory reprocessing in the context of exposure-based interventions (Schäfer et al., 2018). Thus, future research evaluating physiological arousal and memory processing may want to adopt other more reliable methods of assessment (e.g., heart-rate monitoring).

Although the BPQ SF (Porges, 1993, 2015) has shown good psychometric properties (Cabrera et al., 2018), it was not possible to find detailed comparative data in regard to its Autonomic Nervous System subscale. Therefore, in order to calculate RCI and CSC, comparative data had to be calculated through using the results obtain by participants in this study which represents a limitation considering the sample size.

Finally, the study only recruited white British women which was considered a limitation. Women appeared to be overrepresented in cancer research; (Cordova et al., 2017); this might be associated with breast cancer being the most common form of cancer affecting over 55000 people in the UK with women being more likely to be

diagnosed than men (https://www.cancerresearchuk.org/). The overrepresentation of women in cancer research was also highlighted by our systematic literature review (D'Errico et al., 2022). Indeed, studies mostly included women with a breast cancer diagnosis. Another factor that may also impact on the overrepresentation of women not only in cancer research but also in psychology-related research is that women have been found to be more likely to seek support for their mental health compared to men (Moller-Leimkuhler, 2002; Yousaf et al., 2015). Men being less likely to seek support for their mental health may be associated with expectations around men and their role in post-industrial Western societies. The expectation is often for men to not admit anxiety, and to show strength, courage, and power. It is not surprising then that men are less likely to seek support and that the rates of suicide in young men has been gradually increasing since the 1980s (Crawford & Prince, 1999). In terms of the lack of minorities representation in this study as well as in research more widely, research has highlighted how minority groups many not utilise healthcare services at the same rate as Caucasian individuals, and when in treatment tend to terminate earlier (Pole et al., 2008)

This study demonstrated the potential effectiveness of NET to reduce symptoms of traumatic stress in cancer survivors. As the findings of this study appeared promising and most research using NET has focused on victims of organised violence (e.g., war refugees, asylum seekers), future research may want to consider using NET with other physical health related clients' groups (e.g., multiple sclerosis) to expand on the evidence base.

Due to the lack of resources and the nature of the Doctorate in Clinical Psychology, a single case design was considered the most appropriate design to investigate the effectiveness of NET to reduce symptoms of traumatic stress in cancer patients not in active treatment. However, we are aware of the limitations of such design and as a result, further research may want to expand on our findings by using other more standardised methods (e.g., Randomised Controlled Trials).

Critical Reflections

Schön defined reflective practice as “the capacity to reflect on action so as to engage in a process of continuous learning” (2017, p.11). Reflective practice represents a key competency of Clinical Psychologists; the British Psychological Society stated the following **“**psychologists should be cognisant of the importance of self-awareness and the need to appraise and reflect on their own practice” (BPS, 2008, p. 8). As such, reflecting on my work in this study represented a crucial component which enhanced my understanding of the topic area.

6.1 Motivation Behind This Study

Before the Doctorate, I worked as a healthcare worker and then assistant psychologist in secure forensic settings where most clients presented with complex needs (e.g., behaviours that challenge, self-harm) and a severe history of trauma (e.g., childhood sexual abuse, neglect). It is in these contexts that I learned about the potential negative impact of trauma on individuals’ functioning. My interest in trauma led to the development of my PhD project which looked at the community disruption often seen in the aftermath of earthquakes (D’Errico 2020; D’Errico & Hunt, 2019). It was during my PhD that I learned about NET as one of my PhD colleagues was investigating the effectiveness of NET in reducing symptoms of traumatic stress in victims of domestic violence in South India (Raghuraman, 2021). I was able to attend several of her talks and I could see how the narrative component could be beneficial to many of the clients I was working with who had often felt unheard and dismissed during childhood.

Once I started the Doctorate, my interest in trauma and NET grew even further as I was placed in a Step 4 service where most clients could attract a complex trauma diagnosis due to their history of trauma. It is in this service that I had the opportunity to use NET and see “its power”. All of the clients I worked with using NET had very positive feedback about NET (e.g., no more flashbacks or nightmares, more aware of triggers) and all of them completed the intervention even when they felt the urge to run. This made me even more excited about contributing to the evidence of NET which to this day is still limited.

I was initially unsure about which population I wanted to focus on, but as I looked more into the cancer literature and the lack of effective trauma interventions suited to working with cancer patients, it became clearer. Our systematic literature review (D'Errico et al., 2022) confirmed this further and motivated me further to pursue this project.

6.2 Delivering NET

During the process of designing my research protocol, I reflected on what I wanted my role to be with my research supervisors. As I was involved in the whole process for my PhD (from designing the study, to conducting and analysing the interviews), I was very much aware of the importance of being fully immersed in the research process in order to understand the project inside out and become 'the expert'. This is why I chose to deliver the intervention myself. I felt that having had the opportunity to use NET in clinical practice (in Step 4) and having attended the NET Fundamentals two-day course allowed me to feel confident enough in my own skills and able to provide participants with the appropriate care.

Despite feeling confident and ready to deliver NET, this was not without challenges. I feel I perhaps underestimated the impact of conducting such intervention in addition to managing all of the other demands of the Doctorate (e.g., assignments, placement). I initially wanted to stagger participants across several months to reduce demands, but I also wanted to ensure I had completed my data collection by September 2022. Therefore, for a few months I was seeing all four participants at the same time (some were perhaps completing the baseline phase, whilst others were in the intervention phase). This represented a major challenge, and it was only because of my placement supervisor and her understanding that I was able to do it. She understood the demands of the course and allowed me to see two of my participants on placement time. I have spoken about the demands of completing such a research project not only with my research supervisors, but also with my personal and clinical tutors. Since then, it has been agreed that future trainees must be made aware of the demands of conducting such studies for their research project whilst on the course.

It is worth mentioning that although I experienced a few challenges whilst completing this study, I found delivering the intervention myself extremely rewarding. I find it such a privilege to be able to enter someone's life for a short amount of time and bring change and growth (or at least this is what I always hope to achieve). I also felt that having delivered NET myself allowed me to feel more in control over the study (e.g., I avoided having to liaise with other clinicians and respect their schedules), and it allowed me to gain a more in-depth insight into its benefit and pitfalls.

6.3 Online VS Face-to-Face NET

Although no issues were encountered with either delivering NET online or face to face, I still believe this very much depends on the client's needs, preferences, and presentation (including risk). Although I had delivered NET online before whilst working at Step 4 and had no issues, my preference still remains to deliver it face to face. The reason behind this is mostly about having control over what is happening in the room (e.g., observing clients' non-verbal cues such as change in posture) and being able to manage distress in a more contained and neutral environment (e.g., dissociation).

6.4 Clinical Supervision

Receiving clinical supervision on a weekly basis whilst delivering NET was crucial for my own wellbeing and to ensure participants were receiving the best care. Delivering trauma therapy can be very taxing, and therefore I found having a safe space to honestly and openly reflect on my own emotional responses to the events narrated was fundamental to promote self-care. I was able to reflect on transference and countertransference mechanisms occurring within the therapeutic relationship, and the impact of these on the overall quality of the intervention offered.

In clinical supervision, I was able to reflect on my work with participants. The participant I often felt frustrated about was Elizabeth who is also the participant who has experienced less change overall as shown by the results of the questionnaires. Dr Young allowed me to reflect on why I might have felt frustrated (e.g., is it the lack

of change? Is it her mistrust in the process?) and on how my feelings towards Elizabeth could have impacted on the therapeutic relationship. Elizabeth was often sceptical about NET and more widely about psychology and the benefit of it. Her untrustworthy attitude can be understood in the context of her trauma, and I did my best to ensure she felt heard and validated to promote a positive therapeutic alliance. I believe overall our relationship grew stronger with time and although change was not seen in this study, I believe she still experienced some change which is something Elizabeth somewhat acknowledged in the Change Interview:

> *"When I am triggered by something, I still have the awful feeling, the fear, the depression, the hopelessness, but I know it's going to pass, I know I am going to be able to get some distance, I am going to come through. Also, it has confirmed that how I feel about myself it's because of what has happened to me and not because of the way I naturally am. I am still working on it, the way I feel about myself."*

At the end of our work together, Elizabeth reflected on what it would mean for her to change now (e.g., *"Well, I feel as though I've wasted my life [feeling like this]."*) and how this might have impacted on her ability to fully trust the process and allow herself to "get better". Clinical supervision was crucial to promote reflexivity and to ensure I provided all participants with the best care.

When it came to ending my work with them, most of them shared feelings of sadness and fear knowing they would not see me every week. Managing endings is always challenging for both myself and the people I have worked with, especially when they have entrusted you with their most traumatic experiences. Although I often felt pulled into the "rescuer role", it was important to remind them of how many sessions we had left on a weekly basis to reinforce boundaries. In retrospect, the one participant who appeared to be the most ready to finish our work together was Blake. This is in line with her post-intervention outcomes having been the one participant who experienced the most positive change.

6.5 Ethical Considerations and the Role of Researcher/Clinician

During one of the sessions, one of the participants disclosed having been sexually abused by a past boyfriend when she was in her early 20s. This had not been reported to the police and therefore needed to be escalated. Although I encouraged her to approach the police herself to report the event, she felt unable to do so. Therefore, I informed her that I had to approach safeguarding in order to seek advice. Safeguarding recommended reporting to the police and before doing so, I informed the participant. Initially, she appeared distressed by this as she was worried about the abuser finding out and approaching her. However, she later explained that reporting the crime allowed her to feel validated and heard. When I discussed this event in research supervision, several concerns were raised about whether having reported the crime to the police had somewhat impacted the study. As safeguarding processes are not explicitly discussed in the NET protocol, I used research supervision to reflect on how this might have impacted the application of the intervention and the study. However, although I was delivering NET in the context of a research project, I still had a clinical and legal responsibility towards my client and her safety. Thus, I felt recognising, acknowledging, and reporting the crime was paramount. The Change Interview provided an opportunity for the participant to bring up any concerns she might have had about this event (e.g., “was any aspect of NET unhelpful for you?” or “was there anything unexpected or that took you by surprise?”), but she did not mention anything in relation to it. In retrospect, I felt having reported the event to the police might have actually strengthened our therapeutic relationship as on a few occasions, she mentioned having felt heard and validated. I discussed this in the context of clinical supervision with Dr Young and reflected on how important it is for individuals who have experienced abuse to be able to feel heard and for the crime to be labelled for what it is. I reflected on some of my work with previous clients and how when similar events occurred, a similar outcome was achieved whereas the therapeutic relationship became stronger. I also reflected on NET and how the authors emphasised that its focus is not only to recognise and heal individuals’ suffering from a medical and psychological perspective, but also to recognise the major negative impact of abuse as a human right violation and injustice (Schauer et al., 2011). Participants’ narratives become their testimony; a chance for them to feel heard and for their traumatic experiences to be acknowledged and validated. From a more practical perspective, the disclosure

had to be raised to the sponsor for advice around whether it needed to be escalated to HRA. As ethical considerations had been already included within the research protocol and on the IRAS form, the sponsor felt that the event did not need to be escalated to HRA and they agreed that reporting to the police was crucial to ensure the participant's safety.

References

Abbey, G., Thompson, S. B., Hickish, T., & Heathcote, D. (2015). A meta-analysis of prevalence rates and moderating factors for cancer-related post-traumatic stress disorder. *Psycho-Oncology*, *24*(4), 371-381. https://doi.org/10.1002/pon.3654

Age UK. (2016). *Hidden in Plain Sight: The Unmet Mental Health Needs of Older People*. Age UK. https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/reports-and-briefings/health--wellbeing/rb_oct16_hidden_in_plain_sight_older_peoples_mental_health.pdf.

Albert, K., Brundage, J. S., Sweet, P., & Vandenberghe, F. (2020). Towards a critical realist epistemology?. *Journal for the Theory of Social Behaviour*, *50*(3), 357-372. https://doi.org/10.1111/jtsb.12248

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed.).* American Psychiatry Association

Anderson Jr, W. P., & Lopez-Baez, S. I. (2011). Measuring personal growth attributed to a semester of college life using the Posttraumatic Growth Inventory. *Counseling and Values*, *56*(1-2), 73-82. https://doi.org/10.1002/j.2161-007X.2011.tb01032.x

Andrykowski, M. A., & Kangas, M. (2010). Posttraumatic stress disorder associated with cancer diagnosis and treatment. *Psycho-oncology*, *2*, 348-357. https://doi.org/10.1093/med/9780195367430.003.0047

Barker, C., Pistrang, N., & Elliott, R. (2015). *Research methods in clinical psychology: An introduction for students and practitioners*. John Wiley & Sons.

Barnett, S. D., Heinemann, A. W., Libin, A., Houts, A. C., Gassaway, J., Sen-Gupta, S., ... & Brossart, D. F. (2012). Small N designs for rehabilitation research. *Journal of Rehabilitation Research & Development*, *49*(1). https://doi.org/10.1682/jrrd.2010.12.0242. PMID: 22492346

Barrett-Naylor, R., Gresswell, D. M., & Dawson, D. L. (2018). The effectiveness and acceptability of a guided self-help Acceptance and Commitment Therapy (ACT) intervention for psychogenic nonepileptic seizures. *Epilepsy & Behavior*, *88*, 332-340. https://doi.org/10.1016/j.yebeh.2018.09.039

Bhaskar, R. (2013). *A realist theory of science*. Routledge.

Beck, A. T., Rush, A. J., Shaw, B. E, & Emery, G. (1979). *Cognitive therapy of depression*. The Guilford Press.

Beck, J. S. (2021). *Cognitive therapy: Basics and beyond*. The Guilford Press.

Bellg, A. J., Borrelli, B., Resnick, B., Hecht, J., Minicucci, D. S., Ory, M., ... & Czajkowski, S. (2004). Enhancing treatment fidelity in health behavior change studies: best practices and recommendations from the NIH Behavior Change Consortium. *Health psychology*, *23*(5), 443. https://doi.org/10.1037/0278-6133.23.5.443

Benjet, C., Bromet, E., Karam, E. G., Kessler, R. C., McLaughlin, K. A., Ruscio, A. M., ... & Koenen, K. C. (2016). The epidemiology of traumatic event exposure worldwide: results from the World Mental Health Survey Consortium. *Psychological medicine*, *46*(2), 327-343. https://doi.org/10.1017/S0033291715001981

Bowen, D. J., Kreuter, M., Spring, B., Cofta-Woerpel, L., Linnan, L., Weiner, D., ... & Fernandez, M. (2009). How we design feasibility studies. *American Journal of Preventive Medicine*, *36*(5), 452-457. https://doi.org/10.1016/j.amepre.2009.02.002

Brady, M. J., Peterman, A. H., Fitchett, G., Mo, M., & Cella, D. (1999). A case for including spirituality in quality of life measurement in oncology. *Psycho-Oncology: Journal of the Psychological, Social and Behavioral Dimensions of Cancer*, *8*(5), 417-428. https://doi.org/10.1002/(SICI)1099-1611(199909/10)8:5<417::AID-PON398>3.0.CO;2-4

Brewin, C. R., Dalgleish, T., & Joseph, S. (1996). A dual representation theory of posttraumatic stress disorder. *Psychological Review*, *103*(4), 670-686. https://doi.org/10.1037/0033-295X.103.4.670

Brewin, C. R., & Holmes, E. A. (2003). Psychological theories of posttraumatic stress disorder. *Clinical Psychology Review*, *23*(3), 339-376. https://doi.org/10.1016/S0272-7358(03)00033-3

British Psychological Society (BPS). (2008). *Criteria for the accreditation of postgraduate training programmes in clinical psychology*. British Psychological Society.

Brocken, P., Prins, J. B., Dekhuijzen, P. R., & van der Heijden, H. F. (2012). The faster the better? A systematic review on distress in the diagnostic phase of suspected cancer, and the influence of rapid diagnostic pathways. *Psycho-Oncology*, *21*(1), 1-10. https://doi.org/10.1002/pon.1929

Brossart, D. F., Laird, V. C., & Armstrong, T. W. (2018). Interpreting Kendall's Tau and Tau-U for single-case experimental designs. *Cogent Psychology*, *5*(1), 1518687. https://doi.org/10.1080/23311908.2018.1518687

Brossart, D. F., Vannest, K. J., Davis, J. L., & Patience, M. A. (2014). Incorporating nonoverlap indices with visual analysis for quantifying intervention effectiveness in single-case experimental designs. *Neuropsychological Rehabilitation*, *24*(3-4), 464-491. https://doi.org/10.1080/09602011.2013.868361

Brouzos, A., Vatkali, E., Mavridis, D., Vassilopoulos, S. P., & Baourda, V. C. (2021). Psychoeducation for Adults with Post-Traumatic Stress Symptomatology: A Systematic Review and Meta-Analysis. *Journal of Contemporary Psychotherapy*, 1-10. https://doi.org/10.1007/s10879-021-09526-3

Busch, A. M., Wagener, T. L., Gregor, K. L., Ring, K. T., & Borrelli, B. (2011). Utilizing reliable and clinically significant change criteria to assess for the development of depression during smoking cessation treatment: The importance of tracking idiographic change. *Addictive Behaviors*, *36*(12), 1228-1232. https://doi.org/10.1016/j.addbeh.2011.07.031

Butler, L. D., Koopman, C., Classen, C., & Spiegel, D. (1999). Traumatic Stress, Life Events, and Emotional Support in Women With Metastatic Breast Cancer. *Health Psychology*, *18*(6), 555–560. https://doi.org/10.1037/0278-6133.18.6.555

Cabrera, A., Kolacz, J., Pailhez, G., Bulbena-Cabre, A., Bulbena, A., & Porges, S. W. (2018). Assessing body awareness and autonomic reactivity: Factor structure and psychometric properties of the Body Perception Questionnaire-Short Form (BPQ-SF). *International journal of methods in psychiatric research*, *27*(2), e1596. https://doi.org/10.1002/mpr.1596

Chen, A. M., Hsu, S., Felix, C., Garst, J., & Yoshizaki, T. (2017). Effect of psychosocial distress on outcome for head and neck cancer patients undergoing radiation. *The Laryngoscope, 128*(3), 641-645. https://doi.org/10.1002/lary.26751

Classen, C. C., Palesh, O. G., & Aggarwal, R. (2005). Sexual revictimization: A review of the empirical literature. *Trauma, violence, & abuse*, *6*(2), 103-129. https://doi.org/10.1177/1524838005275087

Cloitre, M., Courtois, C. A., Charuvastra, A., Carapezza, R., Stolbach, B. C., & Green, B. L. (2011). Treatment of complex PTSD: Results of the ISTSS expert clinician survey on best practices. *Journal of traumatic stress*, *24*(6), 615-627. https://doi.org/10.1002/jts.20697

Cole, S., Johnstone, L., Oliver, D. N., & Whomsley, S. (2011). Good practice guidelines on the use of psychological formulation. British Psychological Society.

Cordova, M. J., & Andrykowski, M. A. (2003). Responses to cancer diagnosis and treatment: posttraumatic stress and posttraumatic growth. *Seminars in Clinical Neuropsychiatry 8*(4), 286-296. https://europepmc.org/article/med/14613054

Cordova, M. J., Andrykowski, M. A., Kenady, D. E., McGrath, P. C., Sloan, D. A., & Redd, W. H. (1995). Frequency and correlates of posttraumatic-stress-disorder-like symptoms after treatment for breast cancer. *Journal of consulting and clinical psychology*, *63*(6), 981. https://doi.org/10.1037/0022-006X.63.6.981

Cordova, M. J., Riba, M. B., & Spiegel, D. (2017). Post-traumatic stress disorder and cancer. *The Lancet Psychiatry*, *4*(4), 330-338. https://doi.org/10.1016/S2215-0366(17)30014-7

Craddock, N., & Mynors-Wallis, L. (2014). Psychiatric diagnosis: impersonal, imperfect and important. *The British Journal of Psychiatry*, *204*(2), 93-95. https://doi.org/10.1192/bjp.bp.113.133090

Crawford, J. R., Henry, J. D., Crombie, C., & Taylor, E. P. (2001). Normative data for the HADS from a large non-clinical sample. *British Journal of Clinical Psychology*, *40*(4), 429-434. https://doi.org/10.1348/014466501163904

Crawford, M. J., & Prince, M. (1999). Increasing rates of suicide in young men in England during the 1980s: the importance of social context. *Social science & medicine*, *49*(10), 1419-1423. https://doi.org/10.1016/S0277-9536(99)00213-0

Dagnan, D., Chadwick, P., & Trower, P. (2000). Psychometric properties of the Hospital Anxiety and Depression Scale with a population of members of a depression self-help group. *British journal of medical psychology*, *73*(1), 129-137. https://doi.org/10.1348/000711200160255

Dalgleish, T., Rolfe, J., Golden, A. M., Dunn, B. D., & Barnard, P. J. (2008). Reduced autobiographical memory specificity and posttraumatic stress: exploring the contributions of impaired executive control and affect regulation. *Journal of abnormal psychology*, *117*(1), 236. https://doi.org/10.1037/0021-843X.117.1.236

Davidson, C. A., Kennedy, K., & Jackson, K. T. (2022). Trauma-Informed Approaches in the Context of Cancer Care in Canada and the United States: A Scoping Review. *Trauma, Violence, & Abuse*, *0*(0). https://doi.org/10.1177/15248380221120836

D'Errico, D. (2020). *Understanding community disruption in the aftermath of earthquakes: the 2009 L'Aquila and 2016 Amatrice earthquakes in central Italy* [Unpublished doctoral dissertation]. The University of Nottingham.

D'Errico, D., & Hunt, N. (2019). Place responsiveness: IPA walking interviews to explore participants' responses to natural disasters. *Qualitative Research in Psychology*.

D'Errico, D., Schröder, T., & Gresswell, M. (2022). Therapist-led interventions for the treatment of traumatic stress symptoms in cancer survivors: A systematic literature review. *Psycho‐Oncology*, *31*(7), 1057-1075. https://doi.org/10.1002/pon.5964

DeBell, C., & Jones, R. D. (1997). As good as it seems? A review of EMDR experimental research. *Professional Psychology: Research and Practice*, *28*(2), 153. https://doi.org/10.1037/0735-7028.28.2.153

De Jongh, A., Resick, P. A., Zoellner, L. A., Van Minnen, A., Lee, C. W., Monson, C. M., ... & Rauch, S. A. (2016). Critical analysis of the current treatment guidelines for complex PTSD in adults. *Depression and Anxiety*, *33*(5), 359-369. https://doi.org/10.1002/da.22469

de la Torre, J. A., Vilagut, G., Ronaldson, A., Dregan, A., Ricci-Cabello, I., Hatch, S. L., ... & Alonso, J. (2021). Prevalence and age patterns of depression in the United Kingdom. A population-based study. *Journal of Affective Disorders*, *279*, 164-172. https://doi.org/10.1016/j.jad.2020.09.129

Dionigi, F., Martinelli, V., Trotti, E., Ferrari, A., Garcia-Etienne, C. A., Valle, A. D., ... & Sgarella, A. (2020). “My Husband Affects Me More Than My Cancer”: Reflections on Simultaneous Intimate Partner Violence and Breast Cancer Experience in a 48-Year-Old Woman. *Journal of cancer education*, *35*, 1041-1045. https://doi.org/10.1007/s13187-019-01661-9

Easton, G. (2010). Critical realism in case study research. *Industrial Marketing Management*, *39*(1), 118-128. https://doi.org/10.1016/j.indmarman.2008.06.004

Edmondson, D., Park, C. L., Blank, T. O., Fenster, J. R., & Mills, M. A. (2008). Deconstructing spiritual well-being: existential well-being and HRQOL in cancer survivors. *Psycho‐Oncology: Journal of the Psychological, Social and Behavioral Dimensions of Cancer*, *17*(2), 161-169. https://doi.org/10.1002/pon.1197

Ehlers, A., & Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy*, *38*(4), 319-345. https://doi.org/10.1016/S0005-7967(99)00123-0

Elbert, T., Hermenau, K., Hecker, T., Weierstall, R., & Schauer, M. (2012). FORNET: Behandlung von traumatisierten und nicht-traumatisierten Gewalttätern mittels Narrativer Expositions therapie [Treatment of traumatized and non-traumatized offenders by means of narrative exposure therapy]. In J. Endrass,

A. Rossegger, F. Urbaniok, & B. Borchard (Eds.), *Interventionen bei Gewalt- und Sexualstraftätern:Risk-Management, Methoden und Konzepte der forensischen Therapie* [Interventions for violent and sexual offenders: Risk-management, methods and concepts of forensic psychotherapy] (pp. 255-276). Med.- Wiss. Verl.-Ges.

Elliott, R., Slatick, E., & Urman, M. (2001). Qualitative Change Process Research on Psychotherapy: Alternative Strategies. *Psychologische Beitrage, 43*(3), 69-111. https://psycnet.apa.org/record/2003-99376-005

Emsley, E., Smith, J., Martin, D., & Lewis, N. V. (2022). Trauma-informed care in the UK: where are we? A qualitative study of health policies and professional perspectives. *BMC Health Services Research*, *22*(1), 1-12. https://doi.org/10.1186/s12913-022-08461-w

Ferguson, R. J., Robinson, A. B., & Splaine, M. (2002). Use of the reliable change index to evaluate clinical significance in SF-36 outcomes. *Quality of Life Research*, *11*, 509-516. https://doi.org/10.1023/A:1016350431190

Fingerhut, J., Xu, X., & Moeyaert, M. (2021). Selecting the proper Tau-U measure for single-case experimental designs: Development and application of a decision flowchart. *Evidence-Based Communication Assessment and Intervention*, *15*(3), 99-114. https://doi.org/10.1080/17489539.2021.1937851

Fisher, W. W., Kelley, M. E., & Lomas, J. E. (2003). Visual aids and structured criteria for improving visual inspection and interpretation of single-case designs. *Journal of applied behavior analysis*, *36*(3), 387-406. https://doi.org/10.1901/jaba.2003.36-387

Fletcher, S., Creamer, M., & Forbes, D. (2010). Preventing post traumatic stress disorder: are drugs the answer?. *Australian & New Zealand Journal of Psychiatry*, *44*(12), 1064-1071. https://doi.org/10.3109/00048674.2010.509858

Foa, E. B., Hembree, E. A., & Rothbaum, B. O. (2007). *Prolonged Exposure Therapy for PTSD: Emotional Processing of Traumatic Experiences*. Oxford University Press

Foa, E. B., & Kozak, M. J. (1986). Emotional processing of fear: exposure to corrective information. *Psychological Bulletin*, *99*(1), 20-35. https://doi.org/10.1037/0033-2909.99.1.20

Fuchs, T. (2013). Existential vulnerability: Toward a psychopathology of limit situations. *Psychopathology, 46*, 301–308. https://doi.org/10.1159/000351838

Ghazali, N., Cadwallader, E., Lowe, D., Humphris, G., Ozakinci, G., & Rogers, S. N. (2013). Fear of recurrence among head and neck cancer survivors: longitudinal trends. *Psycho‐oncology*, *22*(4), 807-813. https://doi.org/10.1002/pon.3069

Gilbert, R., Widom, C. S., Browne, K., Fergusson, D., Webb, E., & Janson, S. (2009). Burden and consequences of child maltreatment in high-income countries. *The lancet*, *373*(9657), 68-81. https://doi.org/10.1016/S0140-6736(08)61706-7

Ginzburg, K., Ein-Dor, T., & Solomon, Z. (2010). Comorbidity of posttraumatic stress disorder, anxiety and depression: a 20-year longitudinal study of war veterans. *Journal of affective disorders*, *123*(1-3), 249-257. https://doi.org/10.1016/j.jad.2009.08.006

Gorski, P. S. (2013). What is critical realism? And why should you care? *Contemporary Sociology*, *42*(5), 658-670. https://doi.org/10.1177/0094306113499533

Gotay, C. C., & Muraoka, M. Y. (1998). Quality of life in long-term survivors of adult-onset cancers. *JNCI: Journal of the National Cancer Institute*, *90*(9), 656-667. https://doi.org/10.1093/jnci/90.9.656

Graham, J. E., Karmarkar, A. M., & Ottenbacher, K. J. (2012). Small sample research designs for evidence-based rehabilitation: issues and methods. *Archives of physical medicine and rehabilitation*, *93*(8), S111-S116. https://doi.org/10.1016/j.apmr.2011.12.017

Graneheim, U. H., Lindgren, B. M., & Lundman, B. (2017). Methodological challenges in qualitative content analysis: A discussion paper. *Nurse Education Today*, *56*, 29-34. https://doi.org/10.1016/j.nedt.2017.06.002

Grassi, L., Spiegel, D., & Riba, M. (2017). Advancing psychosocial care in cancer patients. *F1000Research*, *6*. https://doi.org/10.12688/f1000research.11902.1

Green, B. L., Krupnick, J. L., Rowland, J. H., Epstein, S. A., Stockton, P., Spertus, I., & Stern, N. (2000). Trauma History as a Predictor of Psychologic Symptoms in Women With Breast Cancer. *Journal of Clinical Oncology*, *18*(5), 1084–1093. https://doi.org/10.1200/jco.2000.18.5.1084

Halpern, M. T., McCabe, M. S., & Burg, M. A. (2016). The cancer survivorship journey: models of care, disparities, barriers, and future directions. *American Society of Clinical Oncology Educational Book*, *36*, 231-239. https://doi.org/10.1200/EDBK_156039

Hanna, T. P., King, W. D., Thibodeau, S., Jalink, M., Paulin, G. A., Harvey-Jones, E., ... & Aggarwal, A. (2020). Mortality due to cancer treatment delay: systematic review and meta-analysis. *bmj*, *371*. https://doi.org/10.1136/bmj.m4087

Heale, R., & Forbes, D. (2013). Understanding triangulation in research. *Evidence-based nursing*, *16*(4), 98-98. http://dx.doi.org/10.1136/eb-2013-101494

Heimann, P. (1975). From'Cumulative Trauma'to The Privacy of the Self—A Critical Review of M. Masud R. Khan's Book. *International Journal of Psycho-Analysis*, *56*, 465-476.

Herman, J. L. (2015). *Trauma and recovery: The aftermath of violence*

– *from domestic abuse to political terror*. Basic Books.

Humphris, G. M., Rogers, S., McNally, D., Lee-Jones, C., Brown, J., & Vaughan, D. (2003). Fear of recurrence and possible cases of anxiety and depression in orofacial cancer patients. *International journal of oral and maxillofacial surgery*, *32*(5), 486-491. https://doi.org/10.1016/S0901-5027(03)90399-1

Hurworth, R., & Mathison, S. (2011). *Encyclopedia of Evaluation.* Sage Publications.

Irwin, M. R., Olmstead, R. E., Ganz, P. A., & Haque, R. (2013). Sleep disturbance, inflammation and depression risk in cancer survivors. *Brain, Behavior, and Immunity*, *30*, S58-S67. https://doi.org/10.1016/j.bbi.2012.05.002

Iverach, L., Menzies, R. G., & Menzies, R. E. (2014). Death anxiety and its role in psychopathology: Reviewing the status of a transdiagnostic construct. *Clinical psychology review*, *34*(7), 580-593. https://doi.org/10.1016/j.cpr.2014.09.002

Jacobson, N. S., & Truax, P. (1992). Clinical significance: a statistical approach to defining meaningful change in psychotherapy research. In A. E. Kazdin (Ed.), *Methodological Issues & Strategies in Clinical Research* (p. 631–648). American Psychological Association. https://doi.org/10.1037/10109-042

Jim, H. S., & Jacobsen, P. B. (2008). Posttraumatic stress and posttraumatic growth in cancer survivorship: a review. *The Cancer Journal*, *14*(6), 414-419. https://doi.org/10.1097/PPO.0b013e31818d8963

Johnstone, L., & Dallos, R. (2014). *Formulation in psychology and psychotherapy: Making sense of people's problems*. Routledge.

Kahlon, S., Neal, A., & Patterson, T. G. (2014). Experiences of cognitive behavioural therapy formulation in clients with depression. *The Cognitive Behaviour Therapist*, *7*, e8. https://doi.org/10.1017/S1754470X14000075

Kaltenbach, E., Chisholm, M., Xiong, T., Thomson, D., Crombach, A., & McGrath, P. J. (2021). Online narrative exposure therapy for parents of children with neurodevelopmental disabilities suffering from posttraumatic stress symptoms–study protocol of a randomized controlled trial. *European Journal of Psychotraumatology*, *12*(1), 1991650. https://doi.org/10.1080/20008198.2021.1991650

Kangas, M. (2013). DSM-5 trauma and stress-related disorders: implications for screening for cancer-related stress. *Frontiers in psychiatry*, *4*, 122. https://doi.org/10.3389/fpsyt.2013.00122

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of general psychiatry*, *62*(6), 593-602. https://doi.org/10.1001/archpsyc.62.6.593

Khan, M. M. R. (1964). Ego distortion, cumulative trauma, and the role of reconstruction in the analytic situation. *International Journal of Psycho-Analysis*, *45*, 272-279.

Kim, S. S. (2006). Fertility preservation in female cancer patients: current developments and future directions. *Fertility and sterility*, *85*(1), 1-11. https://doi.org/10.1016/j.fertnstert.2005.04.071

Kim, D., Bae, H., & Park, Y. C. (2008). Validity of the subjective units of disturbance scale in EMDR. *Journal of EMDR Practice and Research*, *2*(1), 57-62. https://doi.org/10.1891/1933-3196.2.1.57

King, M. T., Agar, M., Currow, D. C., Hardy, J., Fazekas, B., & McCaffrey, N. (2020). Assessing quality of life in palliative care settings: head-to-head comparison of four patient-reported outcome measures (EORTC QLQ-C15-PAL, FACT-Pal, FACT-Pal-14, FACT-G7). *Supportive Care in Cancer*, *28*(1), 141-153. https://doi.org/10.1007/s00520-019-04754-9

Kleinheksel, A. J., Rockich-Winston, N., Tawfik, H., & Wyatt, T. R. (2020). Demystifying content analysis. *American Journal of Pharmaceutical Education*, *84*(1). https://www.ajpe.org/content/84/1/7113.full

Koch, L., Jansen, L., Brenner, H., & Arndt, V. (2013). Fear of recurrence and disease progression in long-term (≥ 5 years) cancer survivors—a systematic review of quantitative studies. *Psycho-oncology*, *22*(1), 1-11. https://doi.org/10.1002/pon.3022

Kohler, R. E., Roncarati, J. S., Aguiar, A., Chatterjee, P., Gaeta, J., Viswanath, K., & Henry, C. (2021). Trauma and cervical cancer screening among women experiencing homelessness: A call for trauma-informed care. *Women's Health*, *17*, 17455065211029238. https://doi.org/10.1177/17455065211029238

Kondracki, N. L., Wellman, N. S., & Amundson, D. R. (2002). Content analysis: Review of methods and their applications in nutrition education. *Journal of Nutrition Education and Behavior*, *34*(4), 224-230. https://doi.org/10.1016/S1499-4046(06)60097-3

Krasny-Pacini, A., & Evans, J. (2018). Single-case experimental designs to assess intervention effectiveness in rehabilitation: A practical guide. *Annals of physical and rehabilitation medicine*, *61*(3), 164-179. https://doi.org/10.1016/j.rehab.2017.12.002

Kratochwill, T., Hitchcock, J., Horner, R., Levin, J. R., Odom, S., Rindskopf, D., & Shadish, W. (2010). *Single-case designs technical documentation. What Works Clearinghouse*. Retrieved from: https://ies.ed.gov/ncee/wwc/Docs/ReferenceResources/wwc_scd.pdf

Kratochwill, T. R., & Levin, J. R. (Eds.). (2014). *Enhancing the scientific credibility of single-case intervention research: Randomization to the rescue.* In T. R. Kratochwill & J. R. Levin (Eds.), *School psychology series. Single-case*

intervention research: Methodological and statistical advances (p. 53–89). American Psychological Association. https://doi.org/10.1037/14376-003

Lambert, S. D., Harrison, J. D., Smith, E., Bonevski, B., Carey, M., Lawsin, C., ... & Girgis, A. (2012). The unmet needs of partners and caregivers of adults diagnosed with cancer: a systematic review. *BMJ supportive & palliative care*, *2*(3), 224-230. http://dx.doi.org/10.1136/bmjspcare-2012-000226

Lane, S. (2019). *Using Narrative Exposure Therapy to treat women with a history of Intimate Partner Violence for post-traumatic stress. A series of single case studies.* [Unpublished doctoral dissertation]. The University of Nottingham.

Leano, A., Korman, M. B., Goldberg, L., & Ellis, J. (2019). Are we missing PTSD in our patients with cancer? Part I. *Canadian Oncology Nursing Journal*, *29*(2), 141. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6516338/

Lely, J. C., Smid, G. E., Jongedijk, R. A., W. Knipscheer, J., & Kleber, R. J. (2019). The effectiveness of narrative exposure therapy: A review, meta-analysis and meta-regression analysis. *European journal of psychotraumatology*, *10*(1), 1550344. https://doi.org/10.1080/20008198.2018.1550344

Lenz, A. S. (2013). Calculating effect size in single-case research: A comparison of nonoverlap methods. *Measurement and Evaluation in Counseling and Development*, *46*(1), 64-73. https://doi.org/10.1177/0748175612456401

Lewis-O'Connor, A., Warren, A., Lee, J. V., Levy-Carrick, N., Grossman, S., Chadwick, M., ... & Rittenberg, E. (2019). The state of the science on trauma inquiry. *Women's Health*, *15*. https://doi.org/10.1177/1745506519861234

Lisy, K., Langdon, L., Piper, A., & Jefford, M. (2019). Identifying the most prevalent unmet needs of cancer survivors in Australia: A systematic review. *Asia-Pacific Journal of Clinical Oncology*, *15*(5), e68-e78. https://doi.org/10.1111/ajco.13176

Lobo, M. A., Moeyaert, M., Cunha, A. B., & Babik, I. (2017). Single-case design, analysis, and quality assessment for intervention research. *Journal of neurologic physical therapy: JNPT*, *41*(3), 187. https://doi.org/10.1097/NPT.0000000000000187

Loge, J. H., Abrahamsen, A. F., Ekeberg, Ø., & Kaasa, S. (2000). Fatigue and psychiatric morbidity among Hodgkin's disease survivors. *Journal of pain and symptom management*, *19*(2), 91-99. https://doi.org/10.1016/S0885-3924(99)00148-7

Ma, H. H. (2006). An alternative method for quantitative synthesis of single-subject researches: Percentage of data points exceeding the median. *Behavior Modification, 30*(5), 598-617. https://doi.org/10.1177/0145445504272974

Lohr, J. M., Kleinknecht, R. A., Conley, A. T., Dal Cerro, S., Schmidt, J., & Sonntag, M. E. (1992). A methodological critique of the current status of eye movement desensitization (EMD). *Journal of Behavior Therapy and Experimental Psychiatry*, *23*(3), 159-167. https://doi.org/10.1016/0005-7916(92)90032-E

Maguire, R., Kotronoulas, G., Simpson, M., & Paterson, C. (2015). A systematic review of the supportive care needs of women living with and beyond cervical cancer. *Gynecologic oncology*, *136*(3), 478-490. https://doi.org/10.1016/j.ygyno.2014.10.030

Mah, K., Swami, N., Le, L. W., Chow, R., Hannon, B. L., Rodin, G., & Zimmermann, C. (2020). Validation of the 7-item Functional Assessment of Cancer Therapy-General (FACT-G7) as a short measure of quality of life in patients with advanced cancer. *Cancer*, *126*(16), 3750-3757. https://doi.org/10.1002/cncr.32981

Malhi, G. S., & Mann, J. J. (2018). Depression. *The Lancet*, *392*(10161), 2299-2312. https://doi.org/10.1016/S0140-6736(18)31948-2

Marlow, K., Schröder, T., Tickle, A., & Renton, J. (2022). Adapting the protocol for narrative exposure therapy for adults with mild intellectual disabilities. *British Journal of Learning Disabilities*. https://doi.org/10.1111/bld.12479

Marziliano, A., Tuman, M., & Moyer, A. (2019). The relationship between post-traumatic stress and post-traumatic growth in cancer patients and survivors: A systematic review and meta-analysis. *Psycho-Oncology*, *29*(4), 604-616. https://doi.org/10.1002/pon.5314

McLeod, J. (2010). *Case study research in counselling and psychotherapy*. Sage Publications.

Meyer, E. C., Zimering, R., Daly, E., Knight, J., Kamholz, B. W., & Gulliver, S. B. (2012). Predictors of posttraumatic stress disorder and other psychological symptoms in trauma-exposed firefighters. *Psychological services*, *9*(1), 1. https://doi.org/10.1037/a0026414

Miller, K. D., Nogueira, L., Mariotto, A. B., Rowland, J. H., Yabroff, K. R., Alfano, C. M., ... & Siegel, R. L. (2019). Cancer treatment and survivorship statistics, 2019. *CA: a cancer journal for clinicians*, *69*(5), 363-385. https://doi.org/10.3322/caac.21565

Mingers, J. (2004). Real-izing information systems: critical realism as an underpinning philosophy for information systems. *Information and Organization*, *14*(2), 87-103. https://doi.org/10.1016/j.infoandorg.2003.06.001

Miroševič, Š., Prins, J. B., Selič, P., Zaletel Kragelj, L., & Klemenc Ketiš, Z. (2019). Prevalence and factors associated with unmet needs in post-treatment cancer survivors: A systematic review. *European journal of cancer care*, *28*(3), e13060. https://doi.org/10.1111/ecc.13060

Missel, M., Bergenholtz, H., Beck, M., Donsel, P. O., & Simonÿ, C. (2022). Understanding existential anxiety and the soothing nature of nostalgia in life with incurable esophageal cancer: A phenomenological hermeneutical investigation of patient narratives. *Cancer Nursing*, *45*(1), E291-E298. https://doi.org/10.1097/NCC.0000000000000916

Mitchell, A. J., Ferguson, D. W., Gill, J., Paul, J., & Symonds, P. (2013). Depression and anxiety in long-term cancer survivors compared with spouses and healthy controls: a systematic review and meta-analysis. *The lancet oncology*, *14*(8), 721-732. https://doi.org/10.1016/S1470-2045(13)70244-4

Moffitt, T. E., Caspi, A., Taylor, A., Kokaua, J., Milne, B. J., Polanczyk, G., & Poulton, R. (2010). How common are common mental disorders? Evidence that lifetime prevalence rates are doubled by prospective versus retrospective ascertainment. *Psychological medicine*, *40*(6), 899-909. https://doi.org/10.1017/S0033291709991036

Möller-Leimkühler, A. M. (2002). Barriers to help-seeking by men: a review of sociocultural and clinical literature with particular reference to depression. *Journal of affective disorders*, *71*(1-3), 1-9. https://doi.org/10.1016/S0165-0327(01)00379-2

Mols, F., Vingerhoets, A. J., Coebergh, J. W., & van de Poll-Franse, L. V. (2005). Quality of life among long-term breast cancer survivors: a systematic review. *European journal of cancer*, *41*(17), 2613-2619. https://doi.org/10.1016/j.ejca.2005.05.017

Morgan, D. L., & Morgan, R. K. (2008). *Single-case research methods for the behavioral and health sciences*. Sage publications.

Morley, S. (2017). *Single Case Methods in Clinical Psychology: A Practical Guide*. Taylor & Francis Group.

Nash, M. R., Borckardt, J. J., Abbasa, A., & Gray, E. (2011). How to conduct and statistically analyze case-based time series studies, one patient at a time. *Journal of Experimental Psychopathology*, *2*(2), 139-169. https://doi.org/10.5127/jep.012210

NHS England. (2019). *NHS Long Term Plan*. NHS England https://www.england.nhs.uk/long-term-plan/

NHS England. (2016). *Valuing mental health equally with physical health or 'Parity of Esteem'*. https://www.england.nhs.uk/mids-east/wp-content/uploads/sites/7/2018/03/parity-report.pdf

National Health Service. (2019, September 17). *Cancer: signs and symptoms*. Retrieved June 23, 2021, from www.nhs.uk/conditions/cancer/symptoms.

National Institute for Health and Care Excellence. (2004). *Improving Supportive and Palliative Care for Adults with Cancer* [NICE Guideline No. CSG4]. https://www.nice.org.uk/guidance/csg4

National Institute for Health and Care Excellence. (2018). *Post-traumatic stress disorder* [NICE Guideline No. 116]. https://www.nice.org.uk/guidance/ng116

National Institute for Health and Care Excellence. (2020). *General Anxiety Disorder and Panic Disorder in adults: management.* [NICE Guideline No. 113]. https://www.nice.org.uk/guidance/cg113

National Institute for Health and Care Excellence. (2022). *Depression in adults: treatment and management.* [NICE Guideline No. 222]. https://www.nice.org.uk/guidance/ng222

Nihalani, N., Simionescu, M., & Dunlop, B. W. (2009). Depression: phenomenology, epidemiology, and pathophysiology. In *Depression* (pp. 13-33). CRC Press.

Nordin, K., Berglund, G., Glimelius, B., & Sjödén, P. O. (2001). Predicting anxiety and depression among cancer patients: a clinical model. *European journal of cancer*, *37*(3), 376-384. https://doi.org/10.1016/S0959-8049(00)00398-1

Oates, J., Carpenter, D., Fisher, M., Goodson, S., Hannah, B., Kwiatowski, R., ... & Wainwright, T. (2021, April). *BPS Code of human research ethics*. British Psychological Society.

Ochoa-Arnedo, C., Casellas-Grau, A., Lleras, M., Medina, J. C., & Vives, J. (2020). Stress management or post-traumatic growth facilitation to diminish distress in cancer survivors? A randomized controlled trial. *The Journal of Positive Psychology*, 1-11. https://doi.org/10.1080/17439760.2020.1765005

Orang, T., Ayoughi, S., Moran, J. K., Ghaffari, H., Mostafavi, S., Rasoulian, M., & Elbert, T. (2018). The efficacy of narrative exposure therapy in a sample of Iranian women exposed to ongoing intimate partner violence—A randomized controlled trial. *Clinical Psychology & Psychotherapy*, *25*(6), 827-841. https://doi.org/10.1002/cpp.2318

Pain, C. M., Chadwick, P., & Abba, N. (2008). Clients' experience of case formulation in cognitive behaviour therapy for psychosis. *British Journal of Clinical Psychology*, *47*(2), 127-138. https://doi.org/10.1348/014466507X235962

Parker, R. I., & Hagan-Burke, S. (2007). Useful effect size interpretations for single case research. *Behavior Therapy*, *38*(1), 95-105. https://doi.org/10.1016/j.beth.2006.05.002

Parker, R. I., Vannest, K. J., Davis, J. L., & Sauber, S. B. (2011). Combining nonoverlap and trend for single-case research: Tau-U. *Behavior Therapy, 42*(2), 284-299. https://doi.org/10.1016/j.beth.2010.08.006

Parsonson, B. S., & Baer, D. M. (1986). The graphic analysis of data. In J. S. Bailey & M. R. Burch (Eds.), *Research methods in applied behavior analysis* (pp. 157-186). Springer.

Pearce, N. J., Sanson-Fisher, R., & Campbell, H. S. (2008). Measuring quality of life in cancer survivors: a methodological review of existing scales. *Psycho-Oncology: Journal of the Psychological, Social and Behavioral Dimensions of Cancer*, *17*(7), 629-640. https://doi.org/10.1002/pon.1281

Pearman, T., Yanez, B., Peipert, J., Wortman, K., Beaumont, J., & Cella, D. (2014). Ambulatory cancer and US general population reference values and cutoff scores for the functional assessment of cancer therapy. *Cancer*, *120*(18), 2902-2909. https://doi.org/10.1002/cncr.28758

Perrotta, G. (2019). Psychological trauma: definition, clinical contexts, neural correlations and therapeutic approaches. *Curr Res Psychiatry Brain Disord CRPBD-100006*.

Pietrzak, R. H., & Cook, J. M. (2013). Psychological resilience in older US veterans: Results from the national health and resilience in veterans study. *Depression and anxiety*, *30*(5), 432-443. https://doi.org/10.1002/da.22083

Pinto, A. C., & De Azambuja, E. (2011). Improving quality of life after breast cancer: dealing with symptoms. *Maturitas*, *70*(4), 343-348. https://doi.org/10.1016/j.maturitas.2011.09.008

Pole, N., Gone, J. P., & Kulkarni, M. (2008). Posttraumatic stress disorder among ethnoracial minorities in the United States. *Clinical Psychology: Science and Practice*, *15*(1), 35. https://doi.org/10.1111/j.1468-2850.2008.00109.x

Porges, S. (1993, 2015). Body perception questionnaire. *Laboratory of Developmental Assessment, University of Maryland*.

Porges, S. W. (1995). Orienting in a defensive world: Mammalian modifications of our evolutionary heritage. A polyvagal theory. *Psychophysiology*, *32*(4), 301-318. https://doi.org/10.1111/j.1469-8986.1995.tb01213.x

Porges, S. W. (2001). The polyvagal theory: phylogenetic substrates of a social nervous system. *International journal of psychophysiology*, *42*(2), 123-146. https://doi.org/10.1016/S0167-8760(01)00162-3

Porges, S. W. (2007). The polyvagal perspective. *Biological psychology*, *74*(2), 116-143. https://doi.org/10.1016/j.biopsycho.2006.06.009

Preyde, M., & Burnham, P. V. (2011). Intervention fidelity in psychosocial oncology. *Journal of Evidence-Based Social Work*, *8*(4), 379-396. https://doi.org/10.1080/15433714.2011.542334

Raghuraman, S. (2022). *Treating posttraumatic stress disorder using Narrative Exposure Therapy: A study of domestic violence survivors in south India* [Unpublished doctoral dissertation]. The University of Nottingham.

Raghuraman, S., Stuttard, N., & Hunt, N. (2021). Evaluating narrative exposure therapy for post-traumatic stress disorder and depression symptoms: A meta-analysis of the evidence base. *Clinical Psychology & Psychotherapy*, *28*(1), 1-23. https://doi.org/10.1002/cpp.2486

Raskin, J. D., & Gayle, M. C. (2016). DSM-5: Do psychologists really want an alternative?. *Journal of Humanistic Psychology*, *56*(5), 439-456. https://doi.org/10.1177/0022167815577897

Rauch, S., & Foa, E. (2006). Emotional processing theory (EPT) and exposure therapy for PTSD. *Journal of Contemporary Psychotherapy*, *36*(2), 61-65. https://10.1007/s10879-006-9008-y

Redhead, S., Johnstone, L., & Nightingale, J. (2015). Clients' experiences of formulation in cognitive behaviour therapy. *Psychology and Psychotherapy: Theory, Research and Practice*, *88*(4), 453-467. https://doi.org/10.1111/papt.12054

Regal, R. A., Wheeler, N. J., Daire, A. P., & Spears, N. (2020). Childhood sexual abuse survivors undergoing cancer treatment: A case for trauma-informed integrated care. *Journal of Mental Health Counseling*, *42*(1), 15-31. https://doi.org/10.17744/mehc.42.1.02

Rief, W., Wittchen, H. U., & Frances, A. (2013). DSM-5 pros and cons. *Verhaltenstherapie*, *23*, 280-285. https://doi.org/10.1159/000356572

Robjant, K., & Fazel, M. (2010). The emerging evidence for Narrative Exposure Therapy: A review. *Clinical Psychology Review*, *30*(8), 1030–1039. https://doi.org/10.1016/j.cpr.2010.07.004

Robjant, K., Koebach, A., Schmitt, S., Chibashimba, A., Carleial, S., & Elbert, T. (2019). The treatment of posttraumatic stress symptoms and aggression in female former child soldiers using adapted Narrative Exposure therapy–a RCT in Eastern Democratic Republic of Congo. *Behaviour Research and Therapy*, *123*, 103482. https://doi.org/10.1016/j.brat.2019.103482

Robjant, K., Roberts, J., & Katona, C. (2017). Treating posttraumatic stress disorder in female victims of trafficking using narrative exposure therapy: a retrospective audit. *Frontiers in Psychiatry, 8*, 63. https://doi.org/10.3389/fpsyt.2017.00063

Ruggiero, K. J., Ben, K. D., Scotti, J. R., & Rabalais, A. E. (2003). Psychometric properties of the PTSD Checklist—Civilian version. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies*, *16*(5), 495-502. https://doi.org/10.1023/A:1025714729117

Runowicz, C. D., Leach, C. R., Henry, N. L., Henry, K. S., Mackey, H. T., Cowens-Alvarado, R. L., ... & Ganz, P. A. (2016). American cancer society/American society of clinical oncology breast cancer survivorship care guideline. *CA: a cancer journal for clinicians*, *66*(1), 43-73. https://doi.org/10.3322/caac.21319

Sayer, A. (2000). *Realism and social science*. Sage Publications.

Schäfer, S. K., Ihmig, F. R., Lara H, K. A., Neurohr, F., Kiefer, S., Staginnus, M., Lass-Hennemann, J., & Michael, T. (2018). Effects of heart rate variability biofeedback during exposure to fear-provoking stimuli within spider-fearful individuals: Study protocol for a randomized controlled trial. *Trials, 19*(1). https://doi.org/10.1186/s13063-018-2554-2

Schauer, M., Neuner, F., & Elbert, T. (2011). *Narrative exposure therapy: A short-term treatment for traumatic stress disorders*. Hogrefe Publishing.

Schön, D. A. (2017). *The reflective practitioner: How professionals think in action*. Routledge.

Scruggs, T. E., Mastropieri, M. A., & Casto, G. (1987). The quantitative synthesis of single-subject research: Methodology and validation. *Remedial and Special Education*, *8*(2), 24-33. https://doi.org/10.1177/074193258700800206

Shadish, W. R., Hedges, L. V., Horner, R. H., & Odom, S. L. (2015). The Role of Between-Case Effect Size in Conducting, Interpreting, and Summarizing Single-Case Research. NCER 2015-002. *National Center for Education Research*. https://eric.ed.gov/?id=ED562991

Siehl, S., Robjant, K., & Crombach, A. (2021). Systematic review and meta-analyses of the long-term efficacy of narrative exposure therapy for adults, children and perpetrators. *Psychotherapy Research*, *31*(6), 695-710. https://doi.org/10.1080/10503307.2020.1847345

Silva, S. M., Moreira, H. C., & Canavarro, M. C. (2012). Examining the links between perceived impact of breast cancer and psychosocial adjustment: the buffering role of posttraumatic growth. *Psycho-Oncology*, *21*(4), 409-418. https://doi.org/10.1002/pon.1913

Stanton, A. L., Rowland, J. H., & Ganz, P. A. (2015). Life after diagnosis and treatment of cancer in adulthood: contributions from psychosocial oncology research. *American Psychologist*, *70*(2), 159. https://doi.org/10.1037/a0037875

Stewart-Brown, S., Tennant, A., Tennant, R., Platt, S., Parkinson, J., & Weich, S. (2009). Internal construct validity of the Warwick-Edinburgh mental well-being scale (WEMWBS): a Rasch analysis using data from the Scottish health education population survey. *Health and quality of life outcomes*, *7*(1), 1-8. https://doi.org/10.1186/1477-7525-7-15

Substance Abuse and Mental Health Services Administration. (2014). 1.1 Trauma-informed care: A sociocultural perspective. In *Trauma-informed care in behavioral health services* (pp. 3–32). U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration. https://www.ncbi.nlm.nih.gov/books/NBK207201/pdf/Bookshelf_NBK207201.pdf

Sumalla, E. C., Ochoa, C., & Blanco, I. (2009). Posttraumatic growth in cancer: reality or illusion?. *Clinical psychology review*, *29*(1), 24-33. https://doi.org/10.1016/j.cpr.2008.09.006

Tannock, I. F., Ahles, T. A., Ganz, P. A., & Van Dam, F. S. (2004). Cognitive impairment associated with chemotherapy for cancer: report of a workshop. *Journal of Clinical Oncology*, *22*(11), 2233-2239. https://doi.org/10.1200/JCO.2004.08.094

Tarlow, K., R. (2017). Baseline corrected Tau calculator. Retrieved from: http://www.ktarlow.com/stats/tau

Tate, R. L., McDonald, S., Perdices, M., Togher, L., Schultz, R., & Savage, S. (2008). Rating the methodological quality of single-subject designs and n-of-1 trials: Introducing the Single-Case Experimental Design (SCED) Scale. *Neuropsychological rehabilitation*, *18*(4), 385-401. https://doi.org/10.1080/09602010802009201

Tedeschi, R. G., & Calhoun, L. G. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of traumatic stress*, *9*(3), 455-471. https://doi.org/10.1007/BF02103658

Tedeschi, R. G., & Calhoun, L. G. (2004). " Posttraumatic growth: conceptual foundations and empirical evidence". *Psychological inquiry*, *15*(1), 1-18. https://doi.org/10.1207/s15327965pli1501_01

Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., ... & Stewart-Brown, S. (2007). The Warwick-Edinburgh mental well-being scale (WEMWBS): development and UK validation. *Health and Quality of life Outcomes*, *5*(1), 1-13. https://doi.org/10.1186/1477-7525-5-63

Thyer, B. A., Papsdorf, J. D., Davis, R., & Vallecorsa, S. (1984). Autonomic correlates of the subjective anxiety scale. *Journal of behavior therapy and experimental psychiatry*, *15*(1), 3-7. https://doi.org/10.1016/0005-7916(84)90115-0

Thew, G. R., & Krohnert, N. (2015). Formulation as intervention: case report and client experience of formulating in therapy. *The Cognitive Behaviour Therapist*, *8*, e25. https://doi.org/10.1017/S1754470X15000641

Timimi, S. (2014). No more psychiatric labels: Why formal psychiatric diagnostic systems should be abolished. *International Journal of Clinical and Health Psychology, 14*(3), 208-215. https://doi.org/10.1016/j.ijchp.2014.03.004

Vahdaninia, M., Omidvari, S., & Montazeri, A. (2010). What do predict anxiety and depression in breast cancer patients? A follow-up study. *Social psychiatry and psychiatric epidemiology*, *45*(3), 355-361. https://doi.org/10.1007/s00127-009-0068-7

Van Bruggen. (2018). *Assessment of Existential Anxiety: Development and Validation of the Existential Concerns Questionnaire (ECQ).* Vrije Universiteit Amsterdam

Van Dijk, J. A., Schoutrop, M. J., & Spinhoven, P. (2003). Testimony therapy: Treatment method for traumatized victims of organized violence. *American journal of psychotherapy*, *57*(3), 361-373. https://doi.org/10.1176/appi.psychotherapy.2003.57.3.361

Van Leeuwen, M., Husson, O., Alberti, P., Arraras, J. I., Chinot, O. L., Costantini, A., ... & van de Poll-Franse, L. V. (2018). Understanding the quality of life (QOL) issues in survivors of cancer: towards the development of an EORTC QOL cancer survivorship questionnaire. *Health and Quality of life Outcomes*, *16*(1), 1-15. https://doi.org/10.1186/s12955-018-0920-0

Vannest, K. J., & Ninci, J. (2015). Evaluating intervention effects in single-case research designs. *Journal of Counseling & Development*, *93*(4), 403-411. https://doi.org/10.1002/jcad.12038

Vickberg, S. M. J. (2003). The Concerns About Recurrence Scale (CARS): a systematic measure of women's fears about the possibility of breast cancer recurrence. *Annals of Behavioral Medicine*, *25*(1), 16-24. https://doi.org/10.1207/S15324796ABM2501_03

Visser, A., Garssen, B., & Vingerhoets, A. (2010). Spirituality and well-being in cancer patients: a review. *Psycho‐Oncology: Journal of the Psychological, Social and Behavioral Dimensions of Cancer*, *19*(6), 565-572. https://doi.org/10.1002/pon.1626

Wang, K., Yee, C., Tam, S., Drost, L., Chan, S., Zaki, P., ... & Chow, E. (2018). Prevalence of pain in patients with breast cancer post-treatment: A systematic review. *The Breast*, *42*, 113-127. https://doi.org/10.1016/j.breast.2018.08.105

Wess, M. (2007). Bringing hope and healing to grieving patients with cancer. *The Journal of the American Osteopathic Association*, *107*, ES41-7. https://doi.org/10.7556/jaoa.2007.20040

Weathers, F. W., Litz, B. T., Huska, J. A., & Keane, T. M. (1994). The PTSD Checklist-Civilian Version (PCL-C) for DSM-IV. Boston: National Center for PTSD. *Behavioral Science Division. VA Boston Healthcare System*.

Wolpe, J. (1969). *The practice of behavior therapy*. Pergamon Press.

World Health Organization (2017). *Cancer prevention and control in the context of an integrated approach.* https://apps.who.int/iris/handle/10665/275676

Wright, A., Reisig, A., & Cullen, B. (2020). Efficacy and cultural adaptations of narrative exposure therapy for trauma-related outcomes in refugees/asylum-seekers: A systematic review and meta-analysis. *Journal of Behavioral and Cognitive Therapy*, *30*(4), 301-314. https://doi.org/10.1016/j.jbct.2020.10.003

Yanez, B., Pearman, T., Lis, C. G., Beaumont, J. L., & Cella, D. (2013). The FACT-G7: a rapid version of the functional assessment of cancer therapy-general (FACT-G7) for monitoring symptoms and concerns in oncology practice and research. *Annals of oncology*, *24*(4), 1073-1078. https://doi.org/10.1093/annonc/mds539

Yalom, I. D. (1980). *Existential psychotherapy*. Basic Books.

Yousaf, O., Popat, A., & Hunter, M. S. (2015). An investigation of masculinity attitudes, gender, and attitudes toward psychological help-seeking. *Psychology of Men & Masculinity*, *16*(2), 234. https://doi.org/10.1037/a0036241

Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica, 67*(6), 361-370. https://doi.org/10.1111/j.1600-0447.1983.tb09716.x

APPENDICES

Appendix A

Confirmation of Ethical Opinion

NHS
Health Research Authority

North West - Liverpool Central Research Ethics Committee
3rd Floor
Barlow House
4 Minshull Street
Manchester
M1 3DZ

Please note: This is the favourable opinion of the REC only and does not allow you to start your study at NHS sites in England until you receive HRA Approval

14 February 2022

Professor Thomas Schröder
Trent Doctorate in Clinical Psychology
Mental Health and Clinical Neurosciences Unit
School of Medicine, University of Nottingham, Jubilee Campus
NG7 2TU

Dear Professor Schröder

Study title:	**Investigating the application of Narrative Exposure Therapy (NET) to reduce Symptoms of Traumatic Stress in Cancer Patients not in active treatment: anaturalistic single case study series**
REC reference:	**22/NW/0024**
Protocol number:	**21083**
IRAS project ID:	**306652**

Thank you for your letter of 11/02/2022, responding to the Research Ethics Committee's (REC) request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Alternate Vice-Chair.

Confirmation of ethical opinion
On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Good practice principles and responsibilities

The UK Policy Framework for Health and Social Care Research sets out principles of good practice in the management and conduct of health and social care research. It also outlines the responsibilities of individuals and organisations, including those related to the four elements of research transparency:

1. registering research studies
2. reporting results
3. informing participants
4. sharing study data and tissue

Conditions of the favourable opinion

The REC favourable opinion is subject to the following conditions being met prior to the start of the study.

Confirmation of Capacity and Capability (in England, Northern Ireland and Wales) or NHS management permission (in Scotland) should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).

Guidance on applying for HRA and HCRW Approval (England and Wales)/ NHS permission for research is available in the Integrated Research Application System.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of management permissions from host organisations

Registration of Clinical Trials

All research should be registered in a publicly accessible database and we expect all researchers, research sponsors and others to meet this fundamental best practice standard.

It is a condition of the REC favourable opinion that **all clinical trials are registered** on a publicly accessible database within six weeks of recruiting the first research participant. For this purpose, 'clinical trials' are defined as:

- clinical trial of an investigational medicinal product
- clinical investigation or other study of a medical device
- combined trial of an investigational medicinal product and an investigational medical device
- other clinical trial to study a novel intervention or randomised clinical trial to compare interventions in clinical practice.

Failure to register a clinical trial is a breach of these approval conditions, unless a deferral has been agreed by the HRA (for more information on registration and requesting a deferral see: Research registration and research project identifiers).

If you have not already included registration details in your IRAS application form you should notify the REC of the registration details as soon as possible.

Publication of Your Research Summary

We will publish your research summary for the above study on the research summaries section of our website, together with your contact details, no earlier than three months from the date of this favourable opinion letter.

Should you wish to provide a substitute contact point, make a request to defer, or require further information, please visit:
https://www.hra.nhs.uk/planning-and-improving-research/application-summaries/research-summaries/

N.B. If your study is related to COVID-19 we will aim to publish your research summary within 3 days rather than three months.

During this public health emergency, it is vital that everyone can promptly identify all relevant research related to COVID-19 that is taking place globally. If you haven't already done so, please register your study on a public registry as soon as possible and provide the REC with the registration detail, which will be posted alongside other information relating to your project. We are also asking sponsors not to request deferral of publication of research summary for any projects relating to COVID-19. In addition, to facilitate finding and extracting studies related to COVID-19 from public databases, please enter the WHO official acronym for the coronavirus disease (COVID-19) in the full title of your study. Approved COVID-19 studies can be found at:
https://www.hra.nhs.uk/covid-19-research/approved-covid-19-research/

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

After ethical review: Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study, including early termination of the study
- Final report
- Reporting results

The latest guidance on these topics can be found at
https://www.hra.nhs.uk/approvals-amendments/managing-your-approval/.

Ethical review of research sites

NHS/HSC sites

The favourable opinion applies to all NHS/HSC sites taking part in the study, subject to confirmation of Capacity and Capability (in England, Northern Ireland and Wales) or management permission (in Scotland) being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Non-NHS/HSC sites

I am pleased to confirm that the favourable opinion applies to any non-NHS/HSC sites listed in the application, subject to site management permission being obtained prior to the start of the study at the site.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	*Version*	*Date*
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Evidence of Sponsor insurance or indemnity]	1	07 January 2022
GP/consultant information sheets or letters [Letter to service NET to reduce symptoms of traumatic stress in cancer survivors v1.0 date 05.01.2022]	1	05 January 2022
Interview schedules or topic guides for participants [Change Interview schedule Narrative Exposure Therapy to reduce symptoms of traumatic stress in cancer survivors v1.0 date 05.01.2022]	1	05 January 2022
IRAS Application Form [IRAS_Form_07012022]		07 January 2022
Letter from sponsor [Letter from Sponsor]	1	07 January 2022
Other [RF2 TA008 Delegation Log for LIP v1.0 date 05.01.2022]	1	05 January 2022
Other [Provision Opinion Table]	1	11 February 2022
Other [Lay Summary NET to reduce symptoms of traumatic stress in cancer survivors Final version 1.1 date 11.02.2022]	1.1	11 February 2022
Participant consent form [Consent Form NET to reduce symptoms of traumatic stress in cancer survivors v1.1 date 11.02.2022]	1.1	11 February 2022
Participant information sheet (PIS) [PIS NET to reduce symptoms of traumatic stress in cancer survivors v1.1 date 11.02.2022]	1.1	11 February 2022
Referee's report or other scientific critique report [Scientific Critique Report Narrative Exposure Therapy to reduce symptoms of traumatic stress in cancer survivors v1.0 date 05.01.2022]	1	05 January 2022
Research protocol or project proposal [Protocol NET to reduce symptoms of traumatic stress in cancer survivors v1.0 date 05.01.22]	1	05 January 2022
Summary CV for Chief Investigator (CI) [Staff CV Chief Investigator Thomas Schroder 2012 IRAS (Dec 20)]	1	05 January 2022
Summary CV for student [CV Danila D'Errico Narrative Exposure Therapy to reduce symptoms of traumatic stress in cancer survivors Final Version 1.0 - date 05.01.2022]	1	05 January 2022
Summary CV for supervisor (student research) [Staff CV Mark Gresswell 1811 (Nov18) pm]	1	05 January 2022

Validated questionnaire [Measures Narrative Exposure Therapy to reduce symptoms of traumatic stress in cancer survivors v1.0 date 05.01.2022]	1	05 January 2022

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website:
http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/

HRA Learning

We are pleased to welcome researchers and research staff to our HRA Learning Events and online learning opportunities– see details at:
https://www.hra.nhs.uk/planning-and-improving-research/learning/

IRAS project ID: 306652 Please quote this number on all correspondence

With the Committee's best wishes for the success of this project.

Yours sincerely

pp

Richard Hovey
Alternate Vice Chair

Email:liverpoolcentral.rec@hra.nhs.uk

Enclosures: "After ethical review – guidance for researchers" *[SL-AR2]*

Copy to: Ms Angela Shone

Lead Nation
England: approvals@hra.nhs.uk

Appendix B

HRA Approval Letter

Professor Thomas Schröder
Trent Doctorate in Clinical Psychology
Mental Health and Clinical Neurosciences Unit
School of Medicine, University of Nottingham, Jubilee Campus
NG7 2TU

Email: approvals@hra.nhs.uk

14 February 2022

Dear Professor Schröder,

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

Study title:	**Investigating the application of Narrative Exposure Therapy (NET) to reduce Symptoms of Traumatic Stress in Cancer Patients not in active treatment: anaturalistic single case study series**
IRAS project ID:	**306652**
Protocol number:	**21083**
REC reference:	**22/NW/0024**
Sponsor	**The University of Nottingham**

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 **306652**. Please quote this on all correspondence.

Yours sincerely,
Chris King

Approvals Specialist

Email: approvals@hra.nhs.uk

Copy to: *Ms Angela Shone, Sponsor's Representative*

Appendix C

Authors' Guidelines

Psychology and Psychotherapy: Theory, Research, and Practice

https://bpspsychub.onlinelibrary.wiley.com/hub/journal/20448341/homepage/forauthors.html

Appendix D

Participant Consent Form

CONSENT FORM
(Final Version 1.1 - date 11.02.2022)

Title of Study: **Investigating the application of Narrative Exposure Therapy (NET) to reduce Symptoms of Traumatic Stress in Cancer Patients not in active treatment: a naturalistic single case study series**

IRAS Project ID: 306652

Name of Researcher(s): Dr Danila D'Errico, Prof Thomas Schroder, Dr Mark Gresswell

Name of Participant:

Please tick the

I confirm that I have read and understand the information sheet version number XXX dated XXX for the above study and have had the opportunity to ask questions.	☐
I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, and without my medical care or legal rights being affected. I understand that should I withdraw then the information collected so far cannot be erased and that this information may still be used in the project analysis.	☐
I understand that relevant sections of my medical notes and data collected in the study may be looked at by authorised individuals from the University of Nottingham, the research group and regulatory authorities where it is relevant to my taking part in this study. I give permission for these individuals to have access to these records and to collect, store, analyse and publish information obtained from my participation in this study. I understand that my personal details will be kept confidential.	☐
I give consent for the sessions and interview to be audio or video recorded and that anonymous direct quotes from the interview may be used in the study reports.	☐
I agree to my care team/treating clinician being informed of my participation in this study	☐
By ticking this box, I indicate that I understand what the study involves, and I agree to take part in the above study.	☐

Please tick the box you

Optional (you do not have to consent to this to participate):

	YES	
I agree to my GP being informed of my participation in this study.	☐	☐
I agree that the information collected about me can be stored by the University of Nottingham at the School of Medicine, for possible use in future studies. I understand that some of these studies may be carried out by researchers other than the current team who ran the first study, including researchers working for commercial companies. Any data used will be anonymised, and I will not be identified in any way.	☐	☐

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Name of Person taking consent	Date	Signature

3 copies: 1 for participant, 1 for the project notes and 1 for the medical notes

*If you are participating online, to tick the box: right click on your mouse, then select ‘Properties’, then under ‘Default Value’ select ‘Ticked’

Appendix E

Participant Information Sheet

Participant Information Sheet

(Final Version 1.1 – date 11.02.2022)

Title of Study: Investigating the application of Narrative Exposure Therapy (NET) to reduce Symptoms of Traumatic Stress in Cancer Patients not in active treatment: a naturalistic single case study series

IRAS Project ID: 306652

Researcher(s): Dr Danila D'Errico, Prof Thomas Schroder, Dr Mark Gresswell

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of our team will go through the information sheet with you and answer any questions you have. Talk to others about the study if you wish. Ask us if there is anything that is not clear.

What is the purpose of the study?

My name is **Danila D'Errico** and I am a Trainee Clinical Psychologist studying at The University of Nottingham. The study will be submitted to the University of Nottingham for the partial completion of the Trent Doctorate in Clinical Psychology.

This study aims at evaluating whether an intervention called **Narrative Exposure Therapy** (or NET) is helpful to support cancer patients who are currently not receiving treatment in reducing potential symptoms of traumatic stress.

NET is an evidence-based treatment which helps people who have experienced stressful and traumatic events, and they still feel upset and scared because of them. As a consequence of these experiences, people might have several symptoms such as feeling like the traumatic event is happening now (flashbacks and nightmares), feeling distressed and panicky at real or symbolic reminders of the trauma, experiencing intrusive thoughts or images and physical sensations (including pain, sweating, nausea and trembling) when reminded of the trauma, feeling easily irritable and upset, finding it hard to concentrate, and feeling like no one understands.

Why have I been invited?

You are being invited to take part because you have experienced cancer and are not undergoing any treatment at this time and have been struggling with emotional and social distress. We are inviting up to six participants.

Do I have to take part?

It is up to you to decide whether or not to take part. If you decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part, you are still free to withdraw at any time without giving a reason. This would not affect your legal rights.

What will happen to me if I take part?

If you say **yes** to be considered for the study, I will come to meet with you and ask you to sign a **Consent Form**. A consent form is something you sign to say you agree to take part. You will be given the option to participate face-to-face or online depending on your needs.

During our first meeting, I will ask you to sign the Consent Form which will allow me to administer a set of questionnaires which will help to clarify whether NET is the right intervention for you (this is called screening). If you don't meet the eligibility criteria, you will be referred back to your care team and offered treatment through the standard service procedures as part of the usual care outside of this study. If you meet eligibility criteria, then you will be asked to complete more questionnaires before beginning the intervention itself; this is going to last two weeks (one session per week). If we are meeting face to face, I will have hard copies of the questionnaires with me and will ask you to complete them, I will be there with you so that I can answer any question you might have about the questionnaires; whilst if we are meeting online, I will share my screen with you and we will go through them together and I will write down your answers on hard copies, again you will be able to ask me questions if needed. I will ask you to complete several questionnaires throughout our work together; at first and at the end there will be more to fill in (six in total), but during our intervention phase, there will be less (four in total). The reason for using these many questionnaires is to track your progress and to explore whether NET can actually work for this client group.

You will be asked to attend around 12 intervention sessions on a weekly basis, each session can last approximately 90 minutes. During these sessions, we will talk about your life and create a story which will include the most important events in your life both negative and positive. Throughout these sessions, I will ask you to continue to complete some questionnaires again with the purpose to monitor progress.

Once the intervention is complete, a month later I will ask you to attend a meeting with a colleague who will ask you a few questions around the intervention, whether you have found it helpful or not, and to complete a few more questionnaires. Circa three months later, I will ask you to complete a few more questionnaires one last time.

As I mentioned above, you can engage in the study by seeing me face to face or on video online through platforms such as MS Teams. All intervention sessions and the interview will be audio or video recorded so that I can listen to what we discussed together and monitor progress. During the study, no one will listen to these audio recordings apart from myself and my research supervisor at the university who is helping me to complete the study. At the end of each session, I will write notes about our sessions and share them with your care team. Throughout our work together, I will have access to your medical notes which will help me to gather important information about you that could inform our work together (e.g., whether you have already received psychological support before).

Expenses and payments

Participants will not be paid to participate in the study.

What are the possible disadvantages and risks of taking part?

There are no serious risks in taking part in this study; the main issue could be the emotional reaction you might experience during and after the intervention. Sensitive topics will be discussed and there might be a chance that you might feel more sad or anxious. Support will be given if needed; a break will be provided if required and we will make every effort to leave you in a safe place before leaving the session.

What are the possible benefits of taking part?

We cannot promise that NET will help you but the information we get from this study may help us to understand more about the impact of cancer on individuals and how NET can potentially help to reduce symptoms of traumatic stress in cancer patients who are not currently undergoing any treatment. This might inform psycho-oncology services and more support might be put in place for cancer patients.

What happens when the research study stops?

The Intervention will no longer be available and you will go back to your care team for usual care.

What if there is a problem?

If you have a concern about any aspect of this study, you should ask to speak to the researchers who will do their best to answer your questions. The researchers' contact details are given at the end of this information sheet. If you remain unhappy and wish to complain formally, you can do this by contacting [contact details of PALS for the hospital] In the event that something does go wrong and you are harmed during the research and this is due to someone's negligence then you may have grounds for a legal action for compensation against the University of Nottingham, but you may have to pay your legal costs. The normal National Health Service complaints mechanisms will still be available to you.

Will my taking part in the study be kept confidential?

We will follow ethical and legal practice and all information about you will be handled in confidence.

If you join the study, we will use information collected from you and your medical records during the course of the research. This information will be kept **strictly confidential**, stored in a secure and locked office, and on a password protected database at the University of Nottingham. Under UK Data Protection laws the University is the Data Controller (legally responsible for the data security) and the Chief Investigator of this study (Prof Thomas Schroder) is the Data Custodian (manages access to the data). This means we are responsible for looking after your information and using it properly. Your rights to access, change or move your information are limited as we need to manage your information in specific ways to comply with certain laws and for the research to be reliable and accurate. To safeguard your rights we will use the minimum personally – identifiable information possible.

The data collected for the study will be looked at and stored by authorised persons from the University of Nottingham who are organising the research. They may also be looked at by authorised people from regulatory organisations to check that the study is being carried out correctly. Everyone will have a duty of confidentiality to you as a research participant and will do our best to meet this duty.

You can find out more about how we use your information and to read our privacy notice at:

https://www.nottingham.ac.uk/utilities/privacy.aspx.

Where possible, any information about you which leaves the site will have your name and address removed (anonymised) and a study ID number will be used so that you cannot be recognised from it.

Your personal data (for example, name, address, telephone number, audio/video recordings and written narrative of traumatic events from our sessions) will be kept separately from the research data collected and only those who need to will have access to it. I will write a

narrative of the positive and negative events you are talking about in the session and I will give you a copy of the transcripts at the end of NET; with your consent, this will be shared with your treating clinical team stored as part of your medical records under a confidential folder that only authorised people will be able to access.

The audio or video recordings of the sessions will be used for two purposes: 1) to help me write down the narrative of the events we talked about in the sessions; 2) to allow one of the professors who are helping me to check my work with you. The recordings will be stored as **password-protected files on a drive on a secure NHS laptop**; these files will be **erased from the recorders and the laptop** as soon as they have been checked by my professor. As I said above, the written narrative will be shared with your treating clinical team and included in your NHS clinical records. A second version, where I will use the study ID number and remove any other potentially identifiable information (for example, places or names of other people) will be saved as a password-protected file on the secure University web server with the rest of the research data.

The audio or video recordings of your interview with my colleague at the end of the therapy (where they will ask you some questions about how you found the sessions) will also be kept as **password-protected files on a drive on a secure NHS laptop** until I write them up and change all your information that could be identifiable. As soon as I have done this, I will store the anonymised written version on the University secure web server with the rest of the research data (e.g., Consent Form) and **erase the recording files from the recorders and the laptop.**

All research data will be kept securely for 7 years. After this time your data will be disposed of securely. During this time all precautions will be taken by all those involved to maintain your confidentiality, only members of the research team given permission by the data custodian will have access to your personal data.

Your personal contact details will be kept securely for **6 months** in case we need to contact you for any reason after the end of the study. After this period, this information will be destroyed.
the audio or video recordings will be destroyed as soon as their content has been written down, and, in the case of the therapy session recordings, checked by my professor. The anonymised transcripts will be kept securely for **7 years** with the rest of the research data.

In accordance with the University of Nottingham's, the Government's and our funders' policies we may share our research data with researchers in other Universities and organisations, including those in other countries, for research in health and social care. Sharing research data is important to allow peer scrutiny, re-use (and therefore avoiding duplication of research) and to understand the bigger picture in particular areas of research. Data sharing in this way is usually anonymised (so that you could not be identified) but if we need to share identifiable information, we will seek your consent for this and ensure it is secure.

Although what you say to us is confidential, should you disclose anything to us which we feel puts you or anyone else at any **risk**, we may feel it necessary to report this to the your care team to ensure you and anyone else is safe.

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

Your participation is **voluntary**, and you are free to withdraw at any time, without giving any reason, and without your legal rights being affected. If you withdraw we will no longer collect any information about you or from you but we will keep the information about you that we have already obtained as we are not allowed to tamper with study records and this information may have already been used in some analyses and may still be used in the final

study analyses. To safeguard your rights, we will use the minimum personally identifiable information possible.

Your care team will offer other treatment options to help you with traumatic stress symptoms.

Involvement of the General Practitioner/Family doctor (GP)

Your GP (or other health care practitioner) will be notified of your participation if necessary; however, we can discuss together what you'd be happy for me to share with them.

What will happen to the results of the research study?

The result will be kept safe at The University of Nottingham and will be part of a final dissertation project that will probably be completed in 2023 at the end of a Doctorate programme in Clinical Psychology. In the event in which the dissertation will be published, you will be informed of it and a copy of the article will be provided if you want one. All the data will remain confidential and you will not be identified in any report/publication; all names will be replaced with study ID numbers.

The information collected throughout the study might be used in future studies, these might be carried out by researchers other than the current team (including researchers working for commercial companies); however, any data used will be anonymised, and you will not be identified in any way. You will be able to decide whether this is something you would like to be carried out or not in the consent form.

Who is organising and funding the research?

This research is being organised and funded by the University of Nottingham.

Who has reviewed the study?

All research in healthcare is looked at by independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by North West - Liverpool Central Research Ethics Committee. Research Ethics Committee.

Further information and contact details

If you have any questions about the study, please contact me. I will be happy to talk to you and this does not mean you have to take part.

Dr Danila D'Errico
Trainee Clinical Psychologist
Trent Doctorate in Clinical Psychology
Mental Health and Clinical Neurosciences Unit
School of Medicine
University of Nottingham
Yang Fujia Building
Jubilee Campus
Nottingham, NG8 1BB
danila.d'errico@nottingham.ac.uk

Prof Thomas Schröder
Professor of Clinical Psychology and Psychological Therapies
Mental Health and Clinical Neurosciences Unit
School of Medicine

Room B12 YANG Fujia Building
University of Nottingham
Jubilee Campus
Nottingham, NG8 1BB
thomas.schroder@nottingham.ac.uk
Dr Mark Gresswell
Trent Doctorate in Clinical Psychology
College of Social Science/DClinPsy
Sarah Swift Building,
University of Lincoln, Brayford Wharf East
Lincoln
LN5 7AY
Phone: 01522 886029
Email: m.gresswell@lincoln.ac.uk

Thank you for your participation!

Appendix F

Change Interview Schedule for Participants

Interviewer introduces themselves and say something along the lines of “Following from your therapy with Dani, I would like to find out about your thoughts about the intervention. I have quite a few questions to ask you today as part of the interview. Before we start, I just want to say that today we won’t be talking about your difficulties as you did with Dani. The plan is to simply go through the questions I have here. Is that okay for you? Is there anything you would like to ask before we begin?”

The interviewer does not follow up on clinical material just reminds the client that interview is not for discussing difficulties and sessions’ content.

Interview continues by saying: “One last thing before we start; can I just ask you to fill in these questionnaires? You will probably remember completing them before”.

General questions
How are you feeling in general?

Feasibility and acceptability questions
Looking back now, what was NET like for you? How did you find it?
Would you recommend NET to someone you know?
Was Dani clear about each step? Did you know what to expect from each session?
NET has a psychoeducation component. This is where Dani would have talked to you about what happens in our minds and bodies when we have gone through very stressful or upsetting events and how NET can help with that. Did it make sense to you? Can you remember any of it? What was the most important thing you remember?
Looking back now, what did you think of the lifeline exercise? How did you find using stones and flowers to symbolise different events?
How did you find having to narrate each event in such details? Did you find something particularly challenging? Do you believe Dani supported you adequately?
What was it like having Dani re-read your story back to you each session?
You were asked to fill in several questionnaires before, during and after each session the intervention. Did Dani make it clear throughout why it was important for you to fill them in? What did you think of them?
Do you believe enough time was allocated to the completion of the intervention?
Was there any point where you thought you could not carry on? If so, what helped you to keep going?
What are your thoughts about participating in this interview?

Change questions
Have you noticed any change(s)?
If you have noticed a change, how important is this to you?
Were you surprised by the change(s)?
Do you think the change you’ve noticed is related to NET, or other aspects (i.e., things that happened in your life during that time, other support received, changes in your life circumstances)?

Helpful or unhelpful aspect questions
Was any part of NET particularly helpful for you?
Was any aspect of NET unhelpful for you?
Was there anything unexpected or that took you by surprise?
NET focused on the traumatic experiences you have gone through in life. Of all the events you discussed with Dani, what was the most important one? [see first lifeline picture]
Was there a particular flower that was very important? [first lifeline]
Was putting together the lifeline different the second time? Can you tell me more about those differences?
Is there anything Dani could have done differently? Or is there anything that you think should be done differently to adapt NET for use with cancer patients?

The interviewer thanks the participant for taking part in the interview. If the participant talks about problematic feelings, the interviewer reminds them that the aim of the interview was to explore the outcomes of the intervention and refers them back to their care team.

Appendix G

Fidelity Check Scales

Psychoeducation Session

Session no.	**1**
Remote delivery: checking video and sound.	yes/no
Remote delivery: checking if the young person is in a safe, confidential space.	yes/no
Review of therapy purpose and session overview	yes/no
Normalises, legitimises, and names trauma reactions and symptoms.	Scale
Explains difference between 'hot' and 'cold' memories.	yes/no
Explains NET processes, i.e. habituation through exposure and autobiographical integration.	yes/no
Explains overview of therapy sessions (e.g. content, number, length of sessions etc.).	yes/no
Discusses possible negative reactions and adverse events.	yes/no
Discusses expectations re not interrupting exposure and highlights rationale.	yes/no
Explains written narrative (testimony).	yes/no
Invites questions and comments.	Scale
Safety planning: Gives local emergency and crisis contacts.	yes/no
Safety planning: Discusses anti-dissociation/grounding strategies.	yes/no

0 = never, 1 = sometimes, 2 = often, 3 = most of the time, 4 = always. ✓= yes, × = no

Criterion for face-to-face delivery:
All 3 scaled items are scored above 2 **and** no more than 2 items (22.5%) scored × = no

Criterion for remote delivery:
All 3 scaled items are scored above 2 **and** no more than 2 items (18%) scored × = no

Lifeline session

Session no.	2	Final session
Remote delivery: checking video and sound.	yes/no	
Remote delivery: checking if the young person is in a safe, confidential space.	yes/no	
Review of lifeline instructions, including meaning of the symbols (flowers, stones, candles, and sticks).	yes/no	
Reminder of lifeline purpose and difference with narration sessions (i.e. 'bird's eye view' versus exposure through detailed narration)	yes/no	[redacted]
Facilitates building of the lifeline chronologically askes appropriate questions about events (e.g. when and where).	Scale	
Asks appropriate questions about events (e.g. when and where).	Scale	
Remote delivery: Ensures both patient and lifeline are visible.	Scale	
Deviations from task are appropriately managed.	Scale	
Asks patient to place symbols at the end of the lifeline to symbolise future hopes and expectations.	[redacted]	yes/no
Invites reflection on the overall lifeline and process.	yes/no	
Review of how the lifeline will be used in future sessions & invites questions.	yes/no	[redacted]
Invites reflections on differences between first and second lifeline.	[redacted]	yes/no

0 = never, 1 = sometimes, 2 = often, 3 = most of the time, 4 = always. ✓= yes, × = no

Criterion face-to-face delivery:
No more than 1 occasion (25%) of × = no **and** no item scored below 3

Criterion for remote delivery:
No more than 1 occasion (25%) of × = no **and** no more than 1 item (25%) scored below 3

Narration sessions

Session no.	
Event (Stone, Candle, Flower)	
Remote delivery: checking video and sound.	yes/no
Remote delivery: checking if the patient is in a confidential space.	yes/no
Re-narration: Further details/corrections elicited	Scale
Re-narration: Further processing not interrupted	Scale
General context elicited.	Scale
Event-specific details elicited.	Scale
Not stopping a session during the height of fear and anxiety	yes/no
Staying in trauma narration until arousal has subsided.	Scale
Past AND current feelings/physical sensations elicited.	Scale
Avoidance and dissociation prevented/managed.	Scale
Chronology adhered to (preventing going back and forth in time).	Scale
Not mixing exposure and closure	Scale
Narration ends at a 'point of safety'.	yes/no

0 = never, 1 = sometimes, 2 = often, 3 = most of the time, 4 = always. ✓= yes, × = no

Criterion: × = 0 **and** 7 (78%) scaled items rated 3 or above

POSTER

Investigating the Application of Narrative Exposure Therapy (NET) to Reduce Symptoms of Traumatic Stress in Cancer Patients not in Active Treatment: A Naturalistic Single Case Study Series

Dr Danila D'Errico, Prof Thomas Schröder, Dr Mark Gresswell

Trent Doctorate in Clinical Psychology

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Background

Cancer-related traumatic stress symptoms can lead to reduced treatment compliance.

Many cancer patients are not referred to psycho-oncology services as their distress is perceived as "normal".

30-40% of cancer survivors do not receive support for their psychological distress

NET is an evidence-based, short-term, manualised treatment for trauma-spectrum disorders.

NET facilitates change through habituation and autobiographical integration of trauma memories

Research Aims

To evaluate the feasibility, acceptability, and effectiveness of NET in reducing symptoms of traumatic stress and anxiety and depression in cancer patients not in active treatment.

Methods

This research adopted a naturalistic, mixed-method, explanatory sequential measurement single case study design

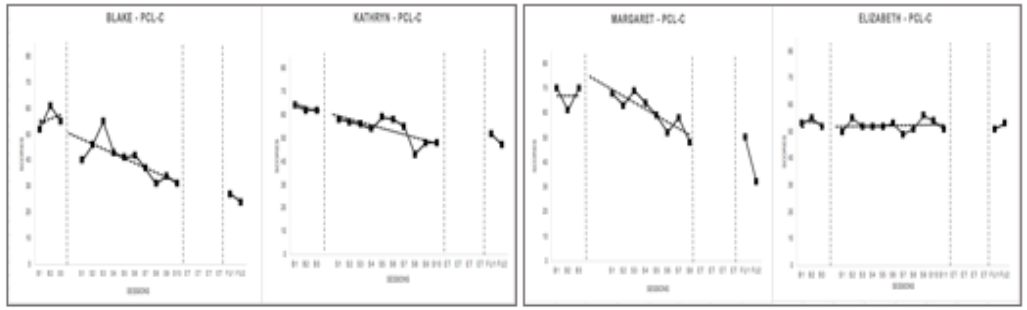
Four Participants (all white British women; mean age = 49) were recruited

Data Analysis included:
Visual Analysis
Reliable Change Index and Clinically Significant Change
Effect Sizes through TAU-U

Results

Effect sizes for traumatic stress and depression ranged between moderate to very large, for anxiety between moderate to large.

RCI/CSC: three participants showed reliable change for traumatic stress, two participants showed reliable change for anxiety, no change for depression



Discussion

It appears NET can be an effective intervention to reduce symptoms of traumatic stress in cancer patients not in active treatment, but not anxiety and depression symptoms. As a time-limited and structured intervention, the benefits of NET are clear. Participants find it feasible and acceptable, and its accessibility makes it easy to implement within services

References

Schauer, M., Neuner, F., & Elbert, T. (2011). *Narrative exposure therapy: A short-term treatment for traumatic stress disorders.* Hogrefe Publishing. - D'Errico, D., Schröder, T., & Gresswell, M. (2022). Therapist-led interventions for the treatment of traumatic stress symptoms in cancer survivors: A systematic literature review. *Psycho-Oncology*, *31*(7), 1057-1075.

SMALL SCALE RESEARCH PROJECT

Examining the potential effectiveness of a psychoeducational intervention to reduce traumatic stress in an individual with a long history of trauma: a single case service-evaluation design

Dr Danila D'Errico[1*,3], Dr Dave Dawson[2], Prof Thomas Schroder[1,3], Charlotte Farnsworth[3]

[1] The University of Nottingham and Nottinghamshire Healthcare Trust, UK

[2] The University of Lincoln, UK

[3] Nottinghamshire Healthcare Trust, UK

Appendix A includes supervisor's email confirming that the participant provided written consent.

Formatted for submission to the *Psychological Trauma: Theory, Research, Practice and Policy* journal (https://www.apa.org/pubs/journals/tra)

[*] *Correspondence should be addressed to* Dr Danila D'Errico, Yang Fujia Building, Jubilee Campus, NG7 2TU, Nottingham, UK
(e-mail: danila.d'errico@nottingham.ac.uk)

Abstract

Objective: This study is of use to Step4 or equivalent services within the NHS (UK) who may be faced with long waiting lists and are likely to support people with a long history of trauma. This study aimed to examine the potential effectiveness of a brief psychoeducational intervention for trauma to reduce symptoms of traumatic stress and improve wellbeing in an individual with a long history of trauma. The study also aimed to examine the intervention's acceptability for this client.

Method: This study adopted a naturalistic, clinically based, mixed-method, explanatory sequential measurement single case service evaluation design. The design included pre and post intervention measurements as well as repeated weekly measurements using a combination of different psychometrics. The design also included qualitative data through the use of a Trauma Quiz designed by the authors and a Change Interview.

Results: The findings showed reliable change on the PCL-5 at the one-month follow-up, but no clinically significant reduction in symptoms of traumatic stress or improvement in wellbeing. However, no deterioration in symptoms was noted.

Conclusion: Although findings were not promising, final conclusions cannot be drawn due to the limitations around generalisability in case study research. However, the intervention was considered acceptable for the client.

Background

The Diagnostic and Statistical Manual of Mental Health Disorders 5th Edition (DSM-5; American Psychiatric Association [APA], 2013; p. 271) defines a traumatic event as the *"exposure to actual or threatened death, serious injury or sexual violence"*. It is estimated that around 25 to 30% of individuals who experience a traumatic event are then diagnosed with Post-Traumatic Stress Disorder (PTSD; National Institute for Care and Health Excellence [NICE], 2018).

In 2018, NICE guidelines recommended mental health professionals to offer psychoeducation about trauma when supporting individuals to recover from PTSD. Psychoeducation can be defined not only as the provision of pertinent information regarding a specific condition, but also "*as a patient's empowering training targeted at promoting awareness and proactivity, providing tools to manage, cope and live with a chronic condition and changing behaviours and attitudes related to the condition"* (Colom, 2011; p. 339) Psychoeducation about trauma usually involves providing clients with information about traumatic stress symptoms and with techniques to cope with them (Schnyder et al., 2015). Phoenix (2007) described two main aims for trauma-focused psychoeducation: (a) to increase the individual's understanding of common trauma-related adverse responses and symptoms and (b) to help normalise and validate these responses as normal reactions to trauma, thus protecting the individual's self-esteem.

Herman (2015) identified three stages of trauma recovery: safety and stabilisation, remembrance and mourning, and reconnection. Although psychoeducation can be offered and/or integrated during any of these stages, it has mostly been delivered during the safety and stabilisation stage, also defined as the pre-exposure stage. Psychoeducation becomes crucial in the first stage of trauma recovery because it prepares clients for trauma-specific treatment by providing them with appropriate coping strategies (Brouzos et al., 2022). This aims to reduce the occurrence of traumatic stress responses and use of unhealthy coping strategies (e.g., dissociation, self-harm, substance misuse) during the remembrance and mourning stage, also defined as the exposure or 'trauma confrontation' stage (Phoenix, 2007). Through psychoeducation, the therapist can establish what trauma symptoms the individual is experiencing, increase their understanding of trauma, provide them with coping strategies, and explore risk (Herman, 2015). Understanding trauma and its symptoms (including hyperarousal, intrusive thoughts and images, dissociation, avoidance) and introducing the individual to healthy coping strategies may help them not only to cope better when experiencing adverse responses in and outside of therapy, but also make them more likely to engage in and complete therapy (Whitworth, 2016). Indeed, when clients are introduced to the benefits of exposure-based therapies and explanation is given on how avoidance can maintain traumatic stress symptoms, they are more likely to manage the initial

distress associated with the exposure work and therefore remain in therapy (Phoenix, 2007).

Although this approach to trauma recovery treatment is widely used in therapeutic practice and recommended by the International Society for Traumatic Stress Studies (ISTSS), the evidence on the effectiveness of psychoeducation as a preparation/stabilisation phase is still very limited (Eichfeld et al., 2019). This is likely related to trauma-focused psychoeducation mostly being delivered in conjunction with other interventions such as Eye Movement Desensitization and Reprocessing (EMDR; Shapiro, 2001), Prolonged Exposure Therapy (PET; Foa & Rothbaum, 1998), Cognitive Processing Therapy (CPT; Resick & Schnicke, 1992), and Narrative Exposure Therapy (Schauer et al., 2011). Although it has been established that these interventions are effective with different client groups, separating the effects of the psychoeducation components from these therapies' other active elements is challenging (Whitworth, 2016). A recent meta-analysis (Brouzos et al., 2022) which evaluated the effectiveness of randomized controlled trials (RCTs) of psychoeducational interventions for PTSD in adults revealed a small effect size (τ^2 = 0.0408). However, the authors also found that the inspection of the 95% predictive interval suggested that further research in this area might be in either direction which means that the effect of psychoeducational interventions to reduce symptoms of traumatic stress remains unclear. The authors also analysed the qualitative information reported in the studies included in the review. Although the results showed a small effect size, participants still reported the interventions as helpful as they provided them with information around trauma, normalised their responses, and taught them effective coping strategies to manage their symptoms.

In 2019, the National Health Service (NHS) England published the NHS Long Term Plan and, within it, the NHS Mental Health Implementation Plan 2019/20 – 2023/24. This document set out the actions and strategies which NHS England will be implementing in the next ten years to ensure a profound amelioration of mental health services. Among these actions and strategies, NHS England committed to ensure that adults and older adults who present to community-based mental health services will receive support within four weeks from when they had been referred. This might comprise the introduction of a therapeutic or social intervention and/or the

implementation of a patient care plan. This commitment informed changes and service development at the local level. In 2020, a Step4 Psychological Therapies NHS service, which offers long term therapy to adults with complex mental health difficulties in the East Midlands, introduced a brief psychoeducational intervention within the trauma pathway to support clients whilst they waited to be seen by qualified and trainee clinical psychologists. Waiting times for specialist mental health provision have consistently been outside of the recommended guidelines, this was further exacerbated by the COVID-19 pandemic (Purrington & Beail, 2021). In the Step4 service, the waiting time in 2019 was 6 months, and this increased to 12-18 months as a result of the pandemic. This was mostly associated with clients stating preference for face to face trauma reprocessing work. The brief one to one psychoeducational intervention was introduced after the service had examined the effectiveness of a similar intervention but delivered in a group setting. The group intervention showed no statistically significant improvement in clients; however, in line with the literature above (Brouzos et al., 2022), participants stated they still found the group intervention helpful. The service then set out to examine whether the brief psychoeducational intervention delivered on a one to one basis could be more effective in reducing symptoms of traumatic stress and improve wellbeing in clients compared to the group one. Although the primary aim of the intervention was to reduce symptoms of traumatic stress in clients, the service also aimed to use it to prepare clients for the second stage of trauma recovery, the exposure stage (Herman, 2015).

The primary aim of this study was to examine the potential effectiveness of a brief psychoeducational intervention for trauma in reducing symptoms of traumatic stress in an individual with a long history of trauma who was referred to a Step4 Psychological Therapies service in 2020. Secondary aims were to investigate the potential effectiveness of this intervention in improving psychological wellbeing and to evaluate its acceptability for the client.

Methods

Design

This study adopted a naturalistic, clinically based, mixed-method, explanatory sequential measurement single case service evaluation design (Creswell & Plano Clark, 2018). This design allowed to analyse and interpret change at the individual level by combining quantitative and qualitative components. Change in the individual is typically assessed by comparing three phases: baseline, intervention, and follow-up (Parsonson & Baer, 1986). The baseline phase is normally completed before the start of therapy and it represents the collection of a series of measures of the target problem behaviour. The data collected in the baseline phase will then be compared to measures taken at the end of therapy. As the study was conducted as part of a service's routine practice, only one measurement could be completed with the participant prior to the start of the intervention. However, repeated measures were completed throughout the intervention to explore clients' progress throughout. Qualitative data was also collected with the aim to explore client's understanding of the intervention content and gather feedback.

Participant

James (pseudonym), a 53-year-old White British man, was referred to Step4 Psychological Therapies due to experiencing dissociative episodes, hearing voices (he mostly described them as hearing his own voice criticising him), low mood, and anxiety. Although James described his childhood as mostly "happy", he reported witnessing domestic violence. He recounted traumatic memories of hearing his father perpetrate sexual violence against his mother. James reported that these memories dated back to when he was six years old.

James served in the Royal Air Force (RAF) for over a decade and he "loved it". Unfortunately, he had to leave in the early 2000s due to having received a diagnosis of Multiple Sclerosis (MS). After leaving the RAF, James got a job in IT which he then lost due to a deterioration in his progressive neurological condition.

James had been in a relationship with Linda (pseudonym) for about four years when he came to therapy. He met Linda whilst volunteering together. James described their relationship as “complicated”. Recently, Linda had been complaining about James having become “sexually awkward”, staring at women in the street and making inappropriate comments. James explained that most of the time he could not remember anything about these episodes and described them as dissociative events. Linda had a child who James considered his own. James reported that his dissociative episodes and inappropriate behaviours had resulted in interpersonal difficulties with Linda and her son.

James had had therapy several years before being referred to Step4. James did not find it helpful as he experienced no change in psychological distress; however, he was open to “give therapy a try again”.

Intervention

The intervention *‘Understanding and Coping with Trauma’* was developed by the team at Step4 Psychological Therapies in 2020 with the aim to provide clients with a brief intervention whilst awaiting more “in-depth” trauma therapy (e.g., Narrative Exposure Therapy, Cognitive Analytic Therapy, EMDR, etc.). The intervention was delivered by the Assistant Psychologist (fourth author) working in the service who was supervised by a Trainee Clinical Psychologist (first author). The intervention comprised a total of six one-hour long sessions delivered weekly. The intervention included elements from Cognitive Behavioural Therapy (CBT; Beck et al., 1979; Beck, 2021) and Dialectical Behavioural Therapy (DBT; Linehan, 2014; Linehan, 2020). The sessions and their content are illustrated in Table 17.

Table 17

Sessions’ title and content

Session	Content
What is Trauma?	Definition of Trauma The Impact of Trauma on the Brain PTSD diagnosis

	CBT model of PTSD PTSD symptoms Fight, Flight, Freeze Responses Window of Tolerance
How to feel safe when experiencing traumatic stress symptoms	Designing a Safety Plan Identifying Triggers Social Support (incl. local services) Imagine a Safe Place Five Senses
Coping with Trauma Symptoms (Part One)	Coping with Flashbacks Coping with Nightmares
Coping with Trauma Symptoms (Part Two)	Different coping strategies are presented (incl. distracting yourself, mindful eating, progressive muscle relaxation)
Thoughts and Beliefs following Trauma	Unhelpful Thinking Patterns Challenging Unhelpful Thoughts Costs and Benefits Analysis
My Wellbeing Plan	Designing a wellbeing plan where to incorporate coping strategies learned Exploring barriers and obstacles Feedback

Measures

The design included pre and post intervention measurements as well as repeated weekly measurements using a combination of different psychometrics.

The *PTSD Checklist for DSM-5* (PCL-5; Weathers et al., 2013) is a 20-item self-report measure for PTSD symptoms. The PCL-5 has been updated to conform to the DSM-5's PTSD diagnosis and its corresponding symptoms (DSM-5; American Psychiatry Association, 2013). A cut-off score of 33 is indicative of PTSD diagnosis (Weathers et al., 2013; Blevins et al., 2015). The PCL-5 has showed good psychometric properties, including good test-retest reliability (r = .82) and internal consistency (Cronbach's alpha = .94) (Blevins et al., 2015). The PCL-5 was administered pre and post intervention.

The *Impact of Event Scale-6* (IES-6; Thoresen et al., 2010) is an abbreviated six-item self-report measure which was developed from the larger IES-Revised (Hyer et al., 2008). The IES-6 assesses a client's psychological distress as a result of a traumatic experience. The IES-6 has shown good internal consistency (Cronbach's alpha = .80). The IES-6 was administered pre and post intervention, and weekly.

The *Clinical Outcomes in Routine Evaluation-10* (CORE-10; Barkham et al., 2013) is a ten-item self-report measure of psychological distress which was developed from the larger CORE-OM. (Barkham, Mellor-Clark, & Stiles, 2015). The CORE-10 has showed good psychometric properties, including good internal consistency (Cronbach's alpha = .90) (Barkham et al., 2013). The CORE-10 was administered pre and post intervention, and weekly.

The *Short Warwick Edinburgh Mental Well-being Scale* (SWEMWBS; Stewart-brown et al., 2009) is a seven-item measure of psychological and eudemonic well-being which was developed from the larger Warwick Edinburgh Mental Well-being Scale (Tennant et al., 2007). The SWEMWBS has showed good psychometric properties including good internal consistency with a Cronbach's alpha = .89. The SWEMWBS was administered pre and post intervention, and weekly.

The *Trauma Quiz* was developed by the authors of this paper to explore the client's understanding of the information shared within the intervention and their retainability (see Appendix B for Trauma Quiz's questions). The Trauma quiz was administered before and after the intervention, and at the one-month follow up.

The *Change Interview* adapted from Elliot et al. (2001) was conducted to explore the intervention's acceptability for this client group. The Change Interview aimed to assess the client's view of the intervention, how they felt completing it, and whether they had experienced any change as a consequence of having engaged in the intervention. The Change Interview was administered by a Trainee Clinical Psychologist (first author) a month after the end of the intervention. See Appendix C for Change Interview schedule.

Session notes were also reviewed and used for triangulation with other data sources (e.g., weekly measures).

Analysis

Reliable Change Index (RCI) and Clinically Significant Change (CSC) statistics (Jacobson & Traux, 1992) is normally calculated to assess whether change has been found pre and post intervention (Busch et al., 2011), and whether this change has occurred due to real change or to chance variation (Ferguson et al., 2002). The RCI is calculated by using the 'standard error' (SE) of the measure used. The post-intervention score is subtracted from the pre-intervention score, and the result is divided by the SE. Change is considered reliable when the resulting value is within ±1.96. The post-intervention scores can be assessed further for CSC when a reliable change has been found (Jacobson & Traux, 1992). The CSC has happened if the post-intervention value is two standard deviations away from the mean of a clinical group (Criterion A); the post-intervention value is two standard deviations within the mean of a nonclinical group (Criterion B); or the post-intervention value is closer to the mean of the nonclinical group than the mean of the clinical group (Criterion C) (Barrett-Naylor et al., 2018). Another option is to use an External Criterion, this is usually an established criterion or clinical cut-off score which must be relevant for and validated with the client group which is being analysed. Within the current study, Criterion A, C, and External were used; this was dependent on available comparative data. Visual analysis was used to assess whether the intervention had affected the participant's scores on outcome measures. Finally, the Change Interview and Trauma Quiz qualitative data were analysed using Content Analysis (Krippendorff, 2018). In Content Analysis, texts (e.g., interviews, field

research notes) represent an important source to explore relevant information regarding a specific phenomenon (Kondracki et al., 2002). Content Analysis helps to explore the presence of specific themes and/or concepts within a specific set of qualitative data (Kleinheksel et al., 2020).

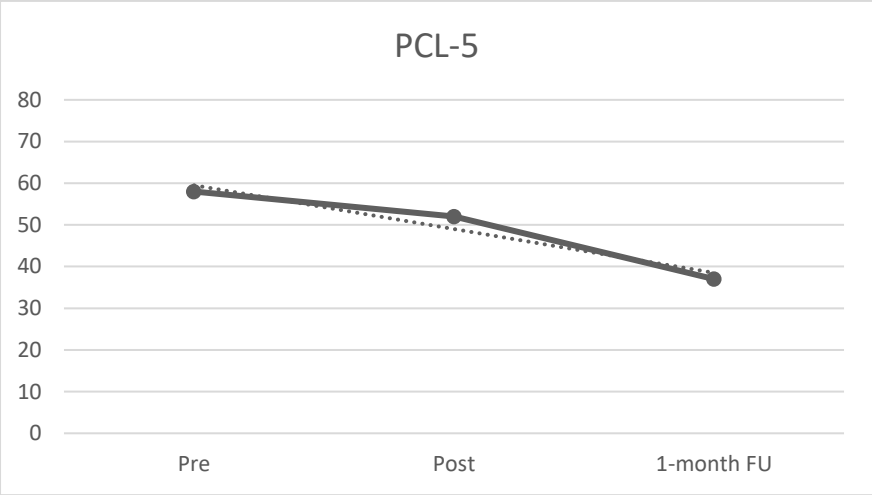
Results

Visual analysis

Visual Analyses revealed a slight downward trend on the PCL-5 measure (Figure 9), indicating some improvement in James' post-traumatic stress symptoms at the one month follow up.

Figure 9

PCL-5 Trendline graph

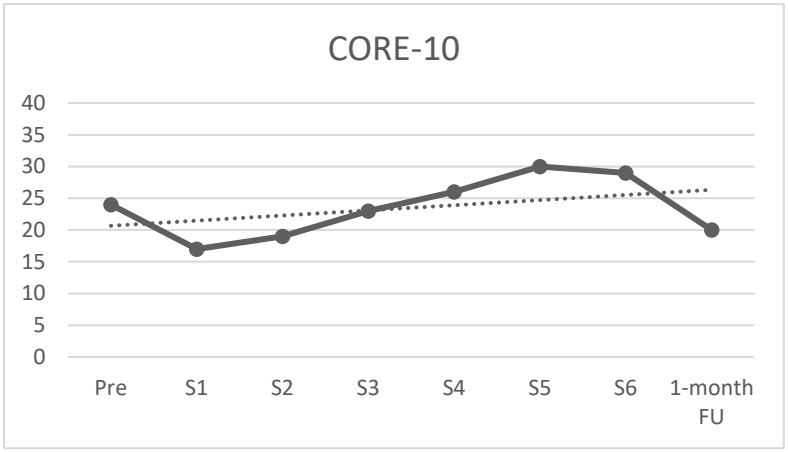


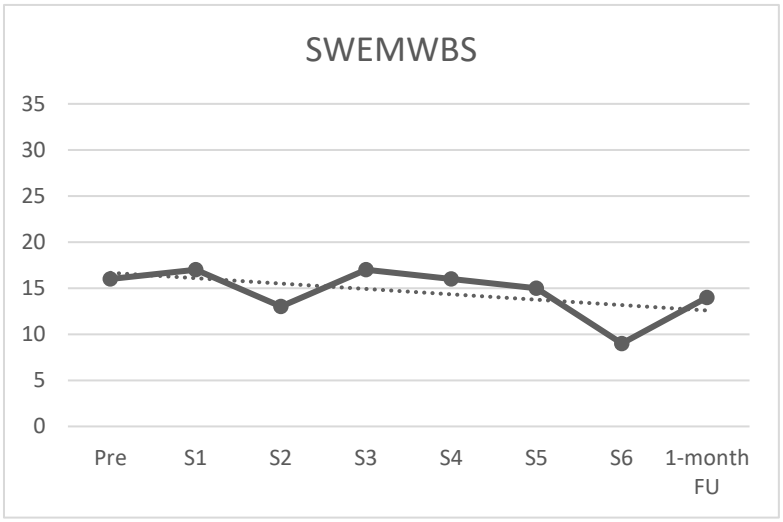
Scores on the CORE-10, SWEMWBS, and IES-6 revealed little to no change as showed by the absence of trend (Figure 10). However, the IES-6 showed more variability with some improvement noted at session three and some deterioration at session five and six. From James' session notes, it appeared that his interpersonal difficulties with his partner and her son had an impact on his distress levels which might explain the variability at these time points. On session three James reported having had a "good week with my family", whilst on session five and six, James reported having had heated arguments with his partner about his dissociative

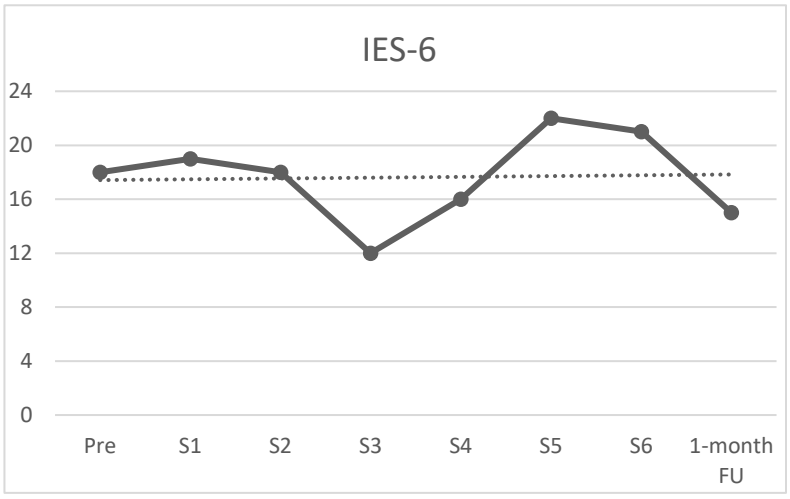
episodes and the impact of these on her son. This could also explain the deterioration in well-being on the SWEMWBS at the session six time-point.

Figure 10

Trendline graphs







Reliable Change and Clinically Significant Change

RCI and CSC analyses were completed on all measures at several time points, including pre intervention, post intervention (session six) and at the point of follow up (one month after the end of the intervention). James demonstrated reliable improvement on the PCL-5 at the one-month follow-up and reliable deterioration on the SWEMWBS at post-intervention. It is worth noting that although James demonstrated improvement on the PCL-5 at the one month follow up, this was not clinically significant as the cut-off score is considered to be 33. No changes were demonstrated on any of the other outcome measures. This is presented in Table 18.

Table 2

RCI and CSC Analyses

Measure	Pre	Post	Follow-up
PCL-5	58	52	37^{R+}
CORE-10	24	29	20
SWEMWBS	18	21^{R-}	15
IES-6	16	9	14

Note. RCI and CSC were calculated using clinical and non-clinical norms in published literature. ^{R} denotes Reliable Change, + or – indicates improvement or deterioration, respectively

Trauma Quiz

James completed the Trauma Quiz pre and post intervention, and at the one-month follow up. At the pre-intervention time point, James showed an elementary understanding of trauma, its symptoms, and the potential coping strategies that could work when experiencing distress. He knew that one of the most common diagnosis given to someone who has experienced a traumatic event is PTSD, and knew that the Flight, Fight, Freeze responses are “nature way of helping you survive”. However, when asked about coping strategies, he mentioned “meditation and the five senses detect” but could not explain in what way they could help

someone who is experiencing traumatic stress symptoms. His knowledge on the topic seemed to have improved at post-intervention, and most of the information he was able to learn through the intervention was then retained at the one-month follow up. For instance, he was able to describe more of the symptoms associated with traumatic stress and explain how grounding and breathing strategies could help. He described them as “ways of keeping yourself in the present moment, and stopping your mind running away from itself” (post-intervention) and “ways to help you realise that what is making you feel panic is not real, but it is just a memory” (one-month follow up). The only concept that he seemed to have struggled to understand and consequently retain was the ‘Window of Tolerance’. At the one-month follow-up, he was only able to describe it as “the tolerance in the middle”.

Change Interview

James took part in a change interview at the one-month follow up. He reported that he found the intervention helpful, he especially liked how “it was concise and to the point”. The session he found the most helpful was session one as he was able “to learn more about the mechanics of trauma, how it impacts on your body”. James felt the intervention made him want to learn more about trauma, “I felt I wanted to do my own research around trauma”. Although he had been feeling better in himself, he explained that he would not necessarily attribute the change solely on the intervention. He explained that he had been into meditation and Buddhism since he was in his early 20s. Having resumed his meditation practice had contributed to his improvement in well-being, “I usually meditate for an hour every day”. James explained that since his engagement in the intervention, he had been able to use and benefit from other strategies to cope with traumatic stress symptoms apart from meditation. For example, he had often been using mindful eating and safe place. When asked whether he felt the intervention had helped him “wait better”, he responded “Yes, I would say so. It makes you feel you’re working towards recovery, it makes you feel more prepared”.

Discussion

This study investigated the potential effectiveness and acceptability of a brief psychoeducational intervention for trauma to reduce symptoms of traumatic stress and improve well-being in a client with a long history of trauma. The findings showed reliable change on the PCL-5 (Weathers et al., 2013) at the one-month follow-up, but no clinically significant reduction in symptoms of traumatic stress or improvement in wellbeing. However, no deterioration in symptoms was noted. As James did not deteriorate whilst engaging in the intervention, it could be argued that he might have instead achieved stabilisation. As psychoeducational interventions are usually offered by professionals in the safety and stabilisation stage (Herman, 2015), we could suggest that James successfully completed this stage.

In line with the group intervention findings and the literature in this area (Brouzos et al., 2022), James found the intervention helpful. Indeed, James's engagement was consistent throughout the intervention. James found session one the most helpful as it allowed him to gain a better understanding of how trauma can impact our bodies. James stated how the change he experienced might have not solely been associate with engaging in the intervention. However, he still reported feeling more prepared for trauma work which represented one of the aims identified by the service. This may demonstrate the acceptability of this intervention for him.

Attempts have been made to understand the potential barriers to James' improvement through the intervention. NICE guidelines (2018, p.43) recommended professionals "to consider more than 12 sessions for people after multiple incident trauma, or who have chronic disability or significant coexisting conditions or social problems". It could be argued that due to the complexity of James' presentation, a six sessions brief psychoeducational intervention is unlikely to be sufficient in reducing symptoms of traumatic stress and improve well-being.

As no improvement could be seen in James, it could be argued that the brief psychoeducational intervention could continue to be offered on a group basis to provide clients with psychological support whilst they wait for trauma work. Van der Kolk (2014) explained that many traumatised people can struggle to connect with

those around them who have not lived same or similar experiences, and they can only find comfort and understanding in those who did. Focusing on a shared history of trauma can help to reduce the sense of isolation often experienced by trauma-survivors and become a vehicle for validation and support. A group setting could facilitate this and help clients normalise their responses to trauma. It could be argued that a group setting could also be more cost-effective for the service compared to delivering the same intervention on an individual basis.

Limitations and Future Research

This study is not without limitations. As the design did not include baseline measures prior to the introduction of the intervention, no effect sizes could be calculated. Although visual analysis remains the most viable strategy when evaluating single case data as it can simultaneously detect curvilinear trends and repeating patterns in data (Parsonson & Bear, 1992), its analysis can be further strengthened by calculating effect sizes. Effect sizes can provide objective indices of change, dependability which means having confidence that a similar effect can be achieved under similar conditions, and inform power analyses and meta-analyses in future research (Parker & Hagan-Burke, 2007). Future research in clinical settings could consider introducing baseline measures as part of their assessment stage. This might facilitate the calculation of effect sizes and potentially improve the credibility for single case designs in the eyes of other research methodologies (Parker & Hagan-Burke, 2007).

Although the data showed some stability in James' scores, it is not possible to claim whether this stability could be solely associated to James' engagement in the intervention. For instance, in the Change Interview, James mentioned using meditation to reduce psychological distress. The intervention might have encouraged James to resume his meditation practice, but no final claims could be made.

Although the findings have suggested that changing the intervention from a group to individual basis might not lead to better results, it is worth noting that this study provided outcomes from one participant. The problem of generalisability in case study research is widely acknowledged. It is not possible to make general statement about patterns or trends from one single case (McLeod, 2010). Although

there is no agreement on a set number of replications needed to draw a conclusion from the experiment (Kratochwill et al., 2013), three replications have been recommended to increase confidence that the findings show a functional relation between the outcome and the intervention (Kratochwill & Levin, 2014). Therefore, the Step4 service may want to replicate the same design to assess whether similar outcomes are obtained with other participants who share similar characteristics to James.

Conclusions

In conclusions, our findings do not support psychoeducation for trauma as a stand-alone intervention to reduce symptoms of traumatic stress and improve wellbeing in an individual with a long history of trauma. However, the intervention was considered acceptable. It could be argued that the brief psychoeducational intervention represented an efficient way to improve waiting times and prepare individuals for the next stage of trauma work, the exposure stage.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Barkham, M., Bewick, B., Mullin, T., Gilbody, S., Connell, J., Cahill, J., ... & Evans, C. (2013). The CORE-10: A short measure of psychological distress for routine use in the psychological therapies. *Counselling and Psychotherapy Research*, *13*(1), 3-13. https://doi.org/10.1080/14733145.2012.729069

Barkham, M., Mellor-Clark, J., & Stiles, W. B. (2015). A CORE approach to progress monitoring and feedback: Enhancing evidence and improving practice. *Psychotherapy*, *52*(4), 402. https://doi.org/10.1037/pst0000030

Barrett-Naylor, R., Gresswell, D. M., & Dawson, D. L. (2018). The effectiveness and acceptability of a guided self-help Acceptance and Commitment Therapy (ACT) intervention for psychogenic nonepileptic seizures. *Epilepsy & Behavior*, *88*, 332-340. https://doi.org/10.1016/j.yebeh.2018.09.039

Beck, A. T., Rush, A. J., Shaw, B. E, & Emery, G. (1979). *Cognitive therapy of depression*. The Guilford Press.

Beck, J. S. (2021). *Cognitive therapy: Basics and beyond*. The Guilford Press.
Brouzos, A., Vatkali, E., Mavridis, D., Vassilopoulos, S. P., & Baourda, V. C. (2021). Psychoeducation for Adults with Post-Traumatic Stress Symptomatology: A Systematic Review and Meta-Analysis. *Journal of Contemporary Psychotherapy*, 1-10. https://doi.org/10.1007/s10879-021-09526-3

Busch, A. M., Wagener, T. L., Gregor, K. L., Ring, K. T., & Borrelli, B. (2011). Utilizing reliable and clinically significant change criteria to assess for the development of depression during smoking cessation treatment: The

importance of tracking idiographic change. *Addictive Behaviors*, *36*(12), 1228-1232. https://doi.org/10.1016/j.addbeh.2011.07.031

Colom, F. (2011). Keeping therapies simple: psychoeducation in the prevention of relapse in affective disorders. *The British Journal of Psychiatry*, *198*(5), 338-340. https://doi.org/10.1192/bjp.bp.110.090209

Creswell, J.,W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research*. Sage

Eichfeld, C., Farrell, D., Mattheβ, M., Bumke, P., Sodemann, U., Ean, N., & Matthe., H. (2019). Trauma stabilization as a sole treatment intervention for post-traumatic stress disorder in Southeast Asia. *Psychiatric Quarterly, 90*(1), 63–88. https://doi.org/10.1007/s11126-018-9598-z

Elliott, R., Slatick, E., & Urman, M. (2001). Qualitative Change Process Research on Psychotherapy: Alternative Strategies. *Psychologische Beitrage, 43*(3), 69-111.

Foa, E. B., & Rothbaum, B. O. (1998). *Treating the trauma of rape: Cognitive-behavioral therapy for PTSD*. Guilford.

Herman, J. L. (2015). *Trauma and recovery: The aftermath of violence – from domestic abuse to political terror*. Basic Books.

Hyer, K., & Brown, L. M. (2008). The Impact of Event Scale–Revised: A quick measure of a patient's response to trauma. *AJN The American Journal of Nursing*, *108*(11), 60-68.

Jacobson, N. S., & Truax, P. (1992). Clinical significance: a statistical approach to defining meaningful change in psychotherapy research. In A. E. Kazdin (Ed.), *Methodological issues & strategies in clinical research* (p. 631–648). American Psychological Association

Kleinheksel, A. J., Rockich-Winston, N., Tawfik, H., & Wyatt, T. R. (2020). Demystifying content analysis. *American journal of pharmaceutical education*, *84*(1). https://doi.org/10.5688/ajpe7113

Kondracki, N. L., Wellman, N. S., & Amundson, D. R. (2002). Content analysis: Review of methods and their applications in nutrition education. *Journal of nutrition education and behavior*, *34*(4), 224-230. https://doi.org/10.1016/S1499-4046(06)60097-3

Kratochwill, T. R., Hitchcock, J. H., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M., & Shadish, W. R. (2013). Single-case intervention research design standards. *Remedial and Special Education*, *34*(1), 26-38. https://doi.org/10.1177/0741932512452794

Kratochwill, T. R., & Levin, J. R. (Eds.). (2014). *Enhancing the scientific credibility of single-case intervention research: Randomization to the rescue.* In T. R. Kratochwill & J. R. Levin (Eds.), *School psychology series. Single-case intervention research: Methodological and statistical advances* (p. 53–89). American Psychological Association.

Krippendorff, K. (2018). *Content analysis: An introduction to its methodology*. Sage publications.

Linehan, M. (2014). *DBT Skills training manual*. Guilford Publications.

Linehan, M. M. (2020). *Dialectical behavior therapy in clinical practice*. Guilford Publications.

McLeod, J. (2010). *Case study research in counselling and psychotherapy*. Sage Publications.

NHS England. (2019). *The NHS Long Term Plan*. https://www.longtermplan.nhs.uk

NHS England (2019). NHS Mental Health Implementation Plan 2019/20 – 2023/24. https://www.longtermplan.nhs.uk/publication/nhs-mental-health-implementation-plan-2019-20-2023-24/

National Institute for Health and Care Excellence. (2018). *Post-traumatic Stress Disorder* [NICE Guideline No. 116]. www.nice.org.uk/guidance/ng116

Parker, R. I., & Hagan-Burke, S. (2007). Useful effect size interpretations for single case research. *Behavior Therapy*, *38*(1), 95-105. https://doi.org/10.1016/j.beth.2006.05.002

Parsonson, B. S., & Baer, D. M. (1986). The graphic analysis of data. In J. S. Bailey & M. R. Burch (Eds.), *Research methods in applied behavior analysis* (pp. 157-186). Springer.

Phoenix, B. J. (2007). Psychoeducation for survivors of trauma. *Perspectives in Psychiatric Care*, *43*(3), 123–131. https://doi.org/10.1111/j.1744-6163.2007.00121.x

Purrington, J., & Beail, N. (2021). The impact of Covid-19 on access to psychological services. Advances in Mental Health and Intellectual Disabilities.

Resick, P. A., & Schnicke, M. K. (1992). Cognitive processing therapy for sexual assault victims. *Journal of Consulting and Clinical Psychology, 60*(5), 748–756. https://doi.org/10.1037/0022-006X.60.5.748

Schnyder, U., Ehlers, A., Elbert, T., Foa, E. B., Gersons, B. P. R., Resich, P. A., & Cloitre, M. (2015). Psychotherapies for PTSD: What do they have in common? *European Journal of Psychotraumatology*. https://doi.org/10.3402/ejpt.v6.28186

Shapiro, F. (2001). *Eye movement desensitization and reprocessing (EMDR) therapy: Basic principles, protocols, and procedures*. Guilford Press.

Stewart-Brown, S., Tennant, A., Tennant, R., Platt, S., Parkinson, J., & Weich, S. (2009). Internal construct validity of the Warwick-Edinburgh mental well-being scale (WEMWBS): a Rasch analysis using data from the Scottish health education population survey. *Health and quality of life outcomes*, *7*(1), 1-8. https://doi.org/10.1186/1477-7525-7-15

Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., ... & Stewart-Brown, S. (2007). The Warwick-Edinburgh mental well-being scale (WEMWBS): development and UK validation. *Health and Quality of life Outcomes*, *5*(1), 1-13. https://doi.org/10.1186/1477-7525-5-63

Thoresen, S., Tambs, K., Hussain, A., Heir, T., Johansen, V. A., & Bisson, J. I. (2010). Brief measure of posttraumatic stress reactions: Impact of Event Scale-6. *Social psychiatry and psychiatric epidemiology*, *45*(3), 405-412. https://doi.org/10.1007/s00127-009-0073-x

Van der Kolk, B. (2014). *The body keeps the score: Mind, brain and body in the transformation of trauma*. Penguin.

Weathers, F.W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B. P., & Schnurr, P. P. (2013). *The PTSD Checklist for DSM-5 (PCL-5)*. Retrieved from the National Center for PTSD. http://www.ptsd.va.gov

Whitworth, J. D. (2016). The role of psychoeducation in trauma recovery: Recommendations for content and delivery. *Journal of Evidence-Informed Social Work*, *13*(5), 442–451. https://doi.org/10.1080/23761407.2016.1166852

APPENDICES

Appendix H

Supervisor's consent

Friday, July 8, 2022 at 10:27:12 AM British Summer Time

Subject: RE: SSRP Participant Consent
Date: Monday, 27 June 2022 at 09:11:41 British Summer Time
From: YOUNG Cathryn - Clinical Psychologist
To: Danila D'Errico

I can confirm that yes I have seen the written consent provided by Dani's client for their anonymised material to be used for the SSRP, for research and for publication.

Best regards
Cathryn

Dr Cathryn Young
Clinical Psychologist
Step 4 Psychological Therapies
The Bungalows
74 Portland Street
Kirkby in Ashfield
Notts NG17 7AG
0115 9560877
Working days: Monday,Tuesday, Thursday and Friday
8.30am-4.30pm

Appendix I

Trauma Quiz

Trauma is defined as ….

What is the most common diagnosis given to someone who has experienced a traumatic event?

What is the Fight, Flight, Freeze Response?

What are the symptoms of traumatic stress?

What is the Window of Tolerance?

What is grounding and how is it helpful?

What are some of the coping strategies that can be helpful when experiencing symptoms of traumatic stress?

Appendix J

Change Interview Schedule

How are you feeling in general? Have you noticed any changes?

Looking back, how has it been having had the opportunity to engage in this brief intervention?

During your assessment, you have been informed that our waiting list is about a year long. Do you think this intervention has overall help you to ‘wait better’? If yes, how? If no, how come?

Do you think you have received enough information to understand how trauma can have an impact on our functioning, body, and mind?

Do you think you are now more aware of some of the symptoms of trauma? Did you know some of them before engaging in the intervention?

What are your thoughts around the coping strategies we have introduced you to?

Have they been helpful?

Was any part of this intervention particularly helpful for you? Why?

Was there anything that took you by surprise?

Was there any point where you thought I might not be able to carry on? If so, what helped you to keep going?

Is there anything we could have done differently?