

The Effectiveness of Virtual Reality Distraction

Intervention for Reduction of Anxiety and Post-Traumatic Stress Symptoms Associated with Chemotherapy in Cancer Patients: Internal pilot study



Haifa Bin Haamed, PhD researcher
University Of Sheffield, UK

Background

Post-traumatic stress disorder and acute traumatic stress symptoms have been found to be prevalent amongst people suffering from chronic medical conditions (Abbey et al., 2015).

Being diagnosed with a life-threatening disease such as cancer may differ from many kinds of traumatic events in that the threat is ongoing and anchored in the present and future, rather than in the past.

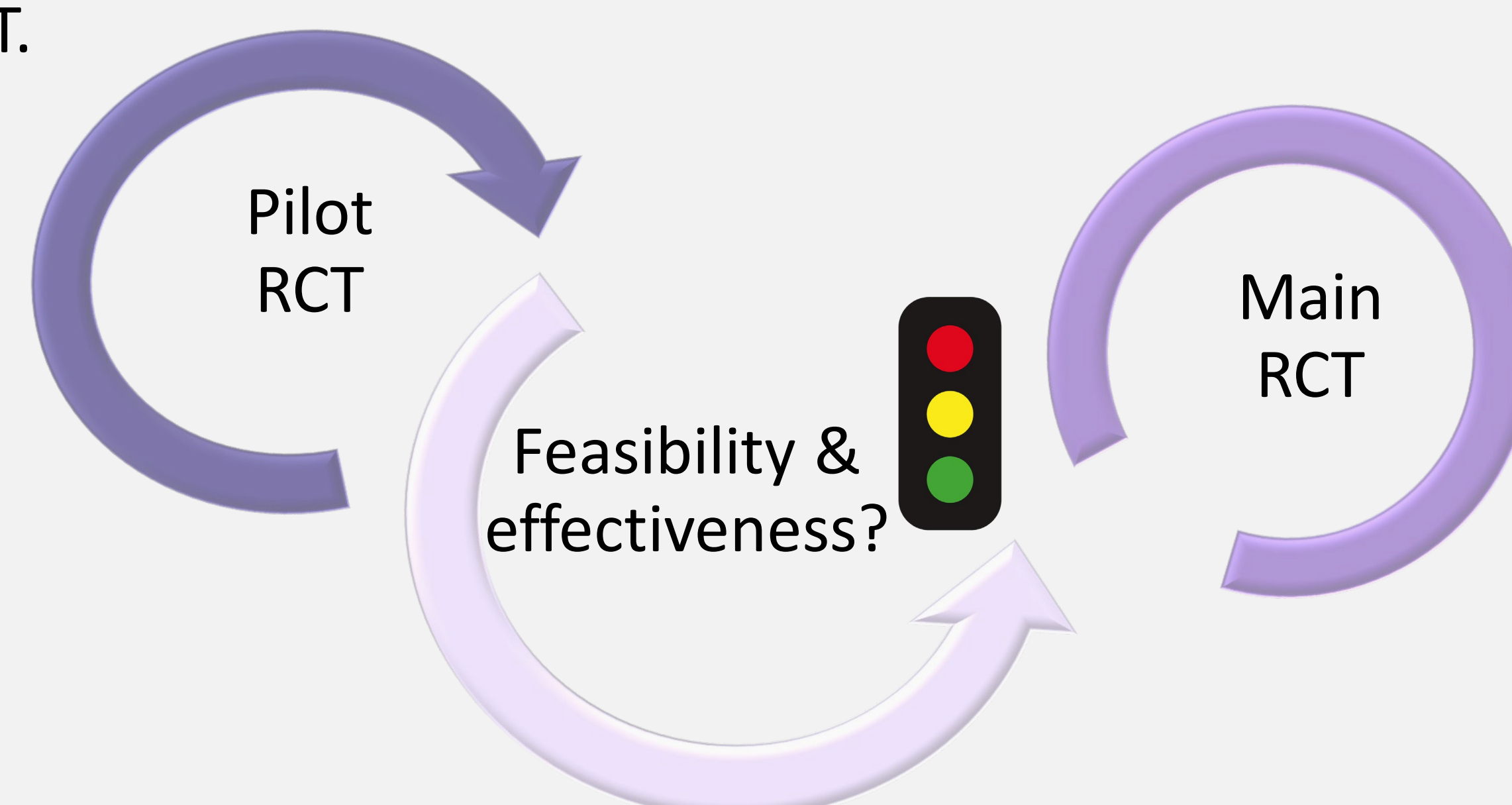
Distraction is a powerful CBT technique available to a therapist for the reduction of stress, and anxiety. Using distraction during stressing experience is considered effective in reducing intensity of stress and provide an initial feeling of relief (Kennerley. 2016).

Distraction via Virtual reality have been found powerful for the reduction of stress, and anxiety (Clark & Beck, 2011).

Aims

The study will assess the effect of using distraction through immersive VR in alleviating chemotherapy-related distress in a cohort of patients, compared to a control group who will attend their chemotherapy session following routine hospital procedure.

The aim of this pilot study is to assess acceptability, effectiveness and feasibility of the VR intervention before proceeding to the main RCT.



Study design

The proposed study is an internal pilot randomised controlled trial.

Outcome Measures:

- Demographics and medical characteristics questionnaires.
- PTSD Checklist for Diagnostic and Statistical Manual of Mental Disorders, 5th Edition DSM-5 (PCL-5).
- Generalized Anxiety Disorder Questionnaire (GAD-7).

Study Population:

For the pilot phase the aim will need to recruit 67 patients to be able to recruit 40 (at a 60% recruitment rate). Sample; age will be between 19 to 65, from cancer patients who will receive their first treatment with chemotherapy. Based on the pilot phase, the researcher will decide whether to proceed with the larger trial directly, change or amend the design or just stop at the pilot phase. The pilot phase recruitment period will be between 12 to 20 weeks.

Expected result

- Distraction during the chemotherapy session via the VR platform will decrease traumatic stress and anxiety symptoms following chemotherapy.
- This VR based intervention could increase treatment tolerance and could improve patients' ability to undertake same therapies in future.



Figure 1. clinician guiding patient through the VR experience

References

1. 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>
2. Clark, D. A., & Beck, A. T. (2011). *Cognitive therapy of anxiety disorders: Science and practice*. Guilford Press.
3. Herbert, E., Julious, S. A., & Goodacre, S. (2019). Progression criteria in trials with an internal pilot: an audit of publicly funded randomised controlled trials. *Trials*, 20(1), 1-9.
4. Malloy, K. M., & Milling, L. S. (2010). The effectiveness of virtual reality distraction for pain reduction: a systematic review. *Clinical psychology review*, 30(8), 1011-1018.
5. Helen Kennerley. (2016) Distraction & grounding strategies, octc practical guides. <https://www.octc.co.uk/wp-content/uploads/2016/07/Distraction.pdf>
6. Lange, B., Williams, M., & Fulton, I. (2006). *Virtual reality distraction during pediatric medical procedures* (Doctoral dissertation, Dalhousie University and IWK Health Centre).
7. Schneider, S. M., Kisby, C. K., & Flint, E. P. (2011). Effect of virtual reality on time perception in patients receiving chemotherapy. *Supportive Care in Cancer*, 19(4), 555-564