# Personalizing Virtual Environments through Immersive Virtual Reality: The patient perspective on achieving the goal of patient-centeredness

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# Conflict of Interest

- Nothing to Declare

# The problem…

- …Undergoing treatment cab be a stressful and burdensome period for the patient and one where mood disturbances have a high prevalence…

- The disturbances seem to peak during the actual treatment sessions…!

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# Could VR be a solution…?

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# The solution…?

- **VR imaging application** to be experienced within a Head-Mounted-Display…
- <u>Immersive virtual reality</u> (immersive VR) is the presentation of an artificial environment that replaces users' real-world surroundings convincingly enough that they are able to suspend disbelief and fully engage with the created environment.

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# The study…

- This was a randomised, double blind crossover trial with 40 patient assigned to the study.

- Cross-sectional, Multi-centre study

- ClinicalTrials.gov <u>Identifier</u>: NCT02392728

# Inclusion Criteria

- Eligible patients were those in active treatment requiring to receive intravenous chemotherapy within the cancer care setting.

- Eligible participants also needed to be able to speak and understand Greek and they had given written informed consent.

- Participants should also have a score of >60 on the POMS total mood disturbance scale, a >50 on the Karnofsky Performance Scale Index and a mean of >50 on the Attentional Function Index (AFI).

# Exclusion Criteria…

- Patients were excluded if:
  - they were diagnosed with brain tumours (due to seizures),
  - receiving palliative care,
  - they had an impaired cognitive ability or
  - they had an impaired visual ability.

# Intervention

- VR imaging application to be experienced within a Head-Mounted-Display, simulating movement by manipulating a gesture controller and to experience fully-spherical 3D videos of virtual environments…

# Control…

- Guided Imagery (floating on a cloud script)
  - Guided imagery is a traditional mind-body technique that focuses the imagination in proactive, positive ways.

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# Measures…

- Research data were collected with the
  - POMS (Profile of Mood States),
  - FACT-G (Functional Assessment of Cancer Therapy - General),
  - Patients' vital signs (BP, HR).

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# Personalization starts from "scratch"…

- The Virtual Environments were designed in collaboration with and based on patients' preferences…

- Review – Interviews – Focus Groups – Pilot Testing X 2

- These environments needed to:

  – Be realistic…

  – Allow connectedness with the users

    - "I want to be somewhere enjoyable and relaxing…"

    - "Having the opportunity to "travel" elsewhere…"

    - "Simply take my mind off this "attachment" to the drug…"

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# Preliminary findings…

- Themes identified
  - Relaxing Experience
  - Altered perception of time
  - Distraction from the hospital environment
    - Distraction from the actual treatment process

# Preliminary findings…

- Participants referred that the intervention (i.e. VR) was one of the most amazing things they ever did and that they previously didn't have the opportunity to experience something similar…

- 18 patients stated that the intervention gave them a <u>relaxing time</u> during their chemotherapy session…

# Preliminary findings...

- The intervention facilitated their forgetting and altered perception of the time of their treatment and distracted them from the hospital environment…

- The majority of participants mentioned that they prefer these kind of interventions rather than to speak with their psychologist or with a close relative or friend (i.e. referring to mood disturbances)...

# Take home message…

- Conventional wisdom is that it takes about 20 years from the time the first research is published to become common use…

- Virtual reality has emerged as a viable tool to help in a number of different disorders, with the most strength of evidence for use in exposure therapy for patients with anxiety disorders…

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# Take home message…

- Our study provides evidence on VR's effectiveness during the actual chemotherapy sessions…

- Results show that VR is an efficacious tool, compares favorably to guided imagery, and has lasting effects that generalize to the real world…

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Whilst VR is promising…

Life is beautiful.

*thank you*

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