

WHAT MAKES THE VIRTUAL ENVIRONMENT 'REAL' or 'UNREAL' FOR PDA PATIENTS?

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INTRODUCTION

Agoraphobia 1 - 6% estimated prevalence

Anxiety-provoking situations typically include

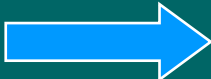
- being outside the home alone,*
- being in shopping spaces,*
- being in crowds,*
- using methods of transport.*

- Significant evidence base for efficacy of graded exposure in treatment of phobic disorders. (Marks 1987, Roth & Fonagy 1987)
- Practical difficulties (Vincelli et al, 2003)
- Advantages of Virtual Reality Exposure Therapy (Botella et al, 2004).
- Specifically VRET has been used successfully in the treatment of panic disorder with agoraphobia. (Botella et al 2003, Vincelli et al 2003)

AIM

To elicit which aspects of virtual environments make the experience 'real' for PDA patients.

-Would the addition of a background sound track increase the sense of presence?

Immersion  presence = phobic anxiety reaction

Presence rating: -one item

'How strong was your sense of "being there" in the virtual environment?'

Anxiety rating: Subjective rating (SUDS)

Physiological rating (HR)

PARTICIPANTS

3 patients

Patient 1

Eamon

51year married male upholsterer with a 30 year history of panic disorder with agoraphobia.

Onset following panic attack on aeroplane.

Medication: dothiepin and alprazolam.

Core symptoms:

Panic attacks on travelling distances from home by car.

Lesser anxiety in supermarket, streets.

Core fear- fear of dying from panic attack

Patient 2

Aoife

38 year old married housewife and mother

6 year history of panic disorder with agoraphobia
commenced 'out of the blue'

aggravated by car accident 2000 .

Medication: Fluoxetine.

Core symptoms: Panic outside home.

Difficulty leaving home unless accompanied.

Core fear: panic with embarrassment and inability to cope

Patient 3

Seamus

33 year old single unemployed male,
10 year + of panic disorder and agoraphobia.

Symptoms commenced following withdrawal effects from
extensive abuse of illicit substances

Medication: Paroxetine.

***Core symptoms:** Panic outside home setting. Needs to be
accompanied.*

***Core fear:** Being unable to escape to safety of home*

VR HARDWARE / SOFTWARE

- P.C: 2 gig, 512 MB RAM.
- HMD: I-glasses SVGA 3D Pro
- Tracking device: InertiaCube2 from Intersense
- Joystick
- Subwoofers

VR Software: Virtual World Software by Psychology Software Tools Inc.

- 16 inter-connected virtual environments
- (urban area, apartment, theatre, restaurant, market, airport, bank, doctors office etc)
- Soundtrack recorded by the authors on camcorder .
Sound converted by OSS Audio Extractor

PROCEDURE

- 4 virtual environments selected for exposure:
 - (i) neutral scene for acclimatisation
 - (ii) street scene
 - (iii) supermarket
 - (iv) airport

Pre-exposure subjects rated their fears of the test environments. (0-10 scale)

airport



airport



street



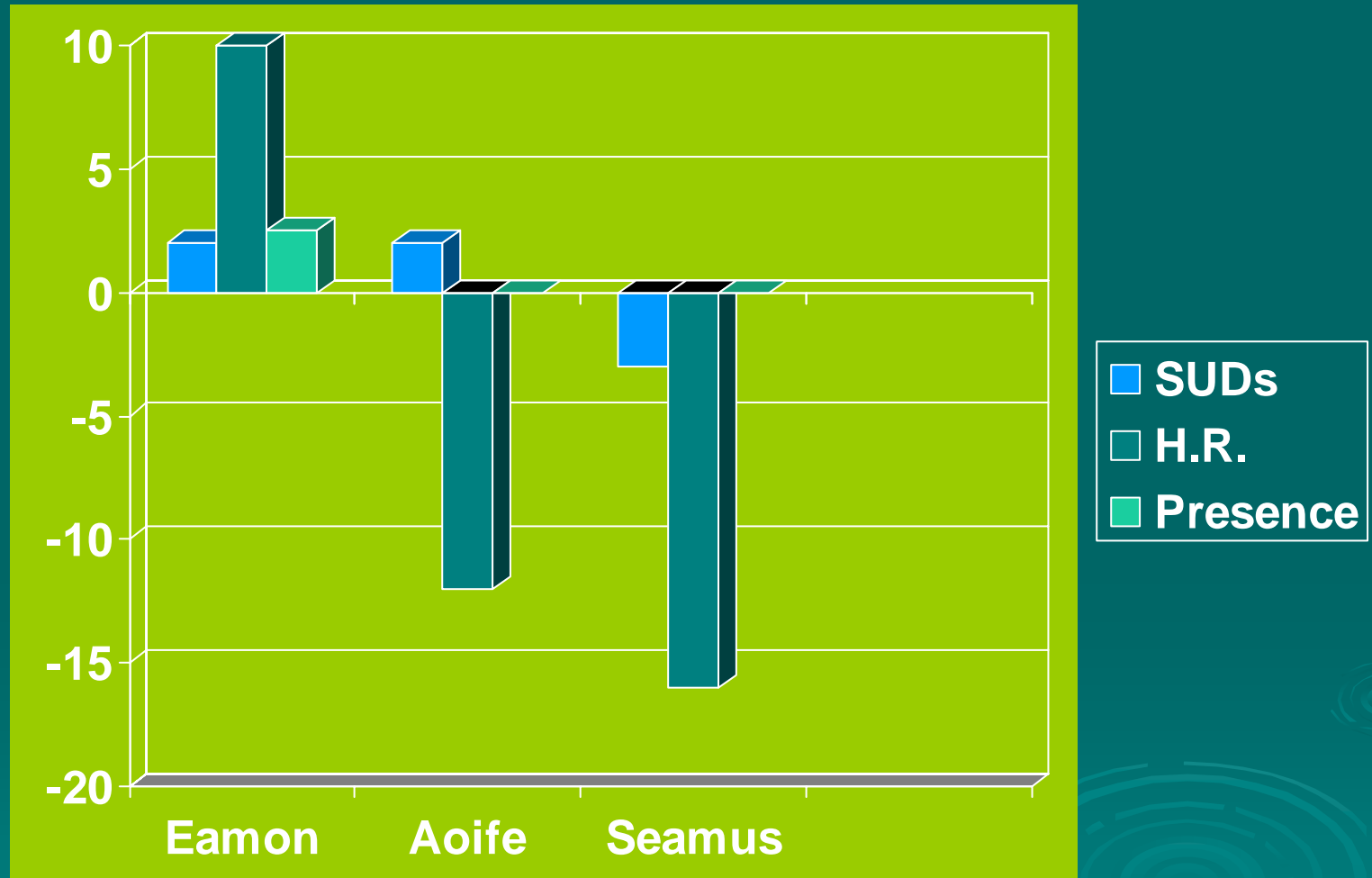
market



RESULTS

- **Pre VR:**
- 2 out of 3 subjects rated that the chosen environments would cause marked distress in vivo (7 – 9/10) .
 - 1 subject rated moderate distress (4/10)
- **During VR:**
- No *sustained* increase in SUDS rating or H.R.
- No *sustained* presence.
- Addition of soundtrack did not alter these ratings.

GRAPH OF RESULTS




SUMMARY

3 agoraphobic patients failed to immerse to virtual environments

- city street
- supermarket
- airport

Addition of soundtrack did not induce presence

DISCUSSION

- Why did our subjects fail to immerse?
 - Graphics of high quality
 - Software effective in addiction studies
 - Standard procedure
 - Added sound track
- 
- The bottom right corner of the slide features several decorative concentric circles in a lighter shade of teal, resembling ripples in water.

POSSIBILITIES

- Time duration-too short
- too few people in scenes
- figures too small (800x600)
- scenes too calm and ordered
- soundtrack not integrated
- chance finding small n -one subject's feared situations was not highlighted by environments.
- ???

CONCLUSION

VR can fail to induce a sense of presence

