Virtual reality exposure and standard exposure were both effective at 1 year for fear of flying


QUESTION: In adults with fear of flying, is short term treatment with virtual reality exposure (VRE) or standard exposure (SE) effective at 12 months?

Design
Randomised (unclear allocation concealment*), unblinded*, controlled trial with 1 year of follow up.

Setting
Atlanta, Georgia, USA.

Patients
49 adults who had fear of flying and met DSM-IV criteria for specific phobia, situational type; panic disorder with agoraphobia; or agoraphobia without a history of panic disorder. Patients on the waiting list (n=10) received treatment after the 6 months of follow up and were not included in this analysis. 80% of participants in the treatment groups (n=30) completed the 12 months of follow up (mean age 39 y, 71% women). All participants were included in the analysis by using last observation carried forward.

Intervention
Participants were allocated to VRE (n=15) or SE (n=15). 8 treatment sessions were given over 6 weeks. The first 4 sessions were identical for both groups: brief breathing retraining, cognitive restructuring, thought stopping, and hyperventilation exposure, as appropriate. Exposure was done in sessions 5–8. VRE was done in an office where participants’ seats were equipped with a wwoofer to simulate the noise and vibration of an aircraft. Scenarios included sitting in the cabin, takeoff, landing, and flight in both calm and stormy weather. SE was done at the airport with exposure to flight related stimuli and imaginal exposure to takeoffs and landings while sitting on a commercial aircraft parked at the gate.

Main outcome measures
Fear of Flying Inventory (FFI, 33 item scale), Questionnaire on Attitudes Toward Flying (QAF), and number of patients who had flown since the 6 months of follow up.

Main results
At 12 months, both treatment groups had improved FFI scores and QAF scores. VRE and SE did not differ for scores on the FFI (mean score 90.2 v 85.1, p=0.08) or QAF (126.5 v 129.6, p=0.17). The number of adults who had flown on real flights was similar in both groups (table).

Virtual reality exposure (VRE) v standard exposure (SE) for fear of flying†

<table>
<thead>
<tr>
<th>Outcome at 12 months</th>
<th>VRE</th>
<th>SE</th>
<th>RBI (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Took commercial flights</td>
<td>92%</td>
<td>91%</td>
<td>1.5% (~28 to 50)</td>
<td>Not significant</td>
</tr>
</tbody>
</table>

†Abbreviations defined in glossary; RBI, NNT, and CI calculated from data in article.

Commentary
It is important to show sustained effects for VRE compared with standard exposure for phobias, and the study by Rothbaum et al goes some way to achieving this goal. It is the first 12 months of follow up study of VRE and extends the follow up from the original study sample.1 Emmelkamp et al2 have also recently reported a follow up of VRE versus in vivo exposure in acrophobia, with similar results to this study; however, the sample size was smaller (n=33), and the follow up was over 6 rather than 12 months.

Exposure in clinical practice is typically an interactive process where the therapist guides the patient and promotes exposure to the phobic stimuli rather than escape or avoidance. Because VRE offers the opportunity for the therapist to control the phobic stimuli to a greater extent than ever before, it is possible for the therapist to facilitate the exposure process. It is not clear to what extent this occurred in the present study, and, if this did happen, what effect it might have had on the outcome.

It might be assumed that the effectiveness of VRE is related to the level of replication of reality. Thus, it may be that virtual exposure where patients feel as if they are actually in the situation may be more effective than less accurate representations of reality. However, this may not be the case. For example, Gilroy et al used an approach where patients observed and controlled computer generated exposure to a phobic stimulus.3 Good outcomes were achieved even though the stimuli were very simple cartoon like figures.

Most clinicians are unlikely to possess the head mounted display apparatus. The quality of the image and the response to head movement will determine the price, which can range from several hundred to several thousand US dollars. The computer hardware required is not particularly advanced or costly, and many clinicians will have access to it.

Justin Kenardy, PhD
The University of Queensland
Brisbane, Queensland, Australia

Virtual reality exposure and standard exposure were both effective at 1 year for fear of flying

Evid Based Mental Health 2002 5: 121
doi: 10.1136/ebmh.5.4.121

Updated information and services can be found at:
http://ebmh.bmj.com/content/5/4/121

These include:

Supplementary Material
Supplementary material can be found at:
http://ebmh.bmj.com/content/suppl/2002/11/25/5.4.121.DC1

References
This article cites 4 articles, 0 of which you can access for free at:
http://ebmh.bmj.com/content/5/4/121#BIBL

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Topic Collections
Articles on similar topics can be found in the following collections

- Panic disorder (51)
- Other phobias (49)
- Social phobia (53)
- Agoraphobia (25)
- Clinical trials (epidemiology) (989)
- Epidemiology (1570)

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/