

# VIRTUAL REALITY TO FIGHT PHOBIAS

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## Introduction

Epidemiological studies estimate that 7% of the general adult population are limited by any kind of phobia. We understand a phobia as an irrational and intense fear of certain objects or situations.

Controlled studies suggest that exposure can be effective in the treatment of phobias. Though in vivo exposure appears to be quite effective, sometimes it is difficult and expensive.

The newest technology to simulate feared stimuli is virtual reality, and it has been used to assist in the treatment of several phobias with good results. VR has been used as a learning method in some colleges and also for health education.

## Aims

The main aim is to examine the efficacy of virtual reality exposure therapy for the treatment of phobias.

## Method

20 people (12 women and 8 men) participated in this study: 11 for fear of flying, 3 for fear of driving, 3 for fear of highs, 3 for fear of closed spaces.

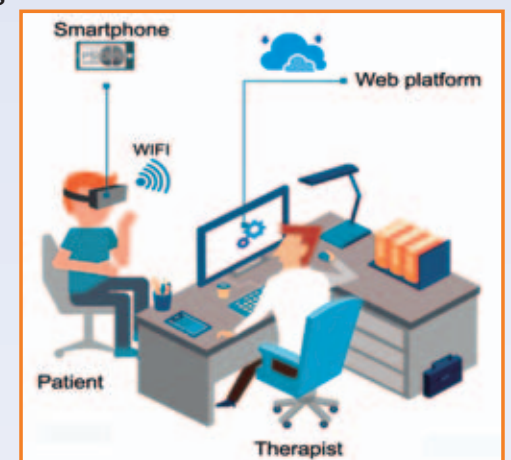
For each sessions it was required a laptop connected by wifi to a smartphone, headphones, and a biofeedback measuring.

One 40-minute booster session and six 30-minute VR sessions were conducted over a period of 3 weeks.

Before and after the treatment we passed the *Patient health questionnaire* (PHQ9, Pfizer, 1999), the *Anxiety Sensitivity Index* (ASI; Peterson & Reiss, 1992), *StateTrait Anxiety Inventory* (STAIR; Spielberger, Gorsuch i Lushene, 1970).

In each session the subject rated his anxiety using the Likert Scale (subjective anxiety from 1 to 10) and also the biofeedback monitoring.

After the treatment we evaluated the anxiety in vivo exposure to the fear.



## Results

All self-reported measures of the fear and biofeedback measures decreased following VR (from 8-9 in the first session to 2-4 the last one), and after treatment almost all the subjects could expose to their feared situation with minimal distress (1 to 3 maximum anxiety).

9 people with flight phobia caught a plane with low anxiety, we didn't receive feedback from the 2 others. 3 people with fear of driving are now driving their cars. 3 people with fear of highs are exposing in vivo to the feared situations with low anxiety, 2 people with fear of closed spaces could make a CMR (the other one chose an open magnetic resonance).



## Discussion

VR exposure permits making standardized protocols for the future, it also offers a secure environment and permits to control the setting adapting it to the subject needs, it is also easier to practice certain situations, and it do not require any difficult learning process. The user prefers Virtual Reality to In vivo exposure.

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