

## Virtual Reality Exposure in the Treatment of Panic Disorder With Agoraphobia: A Case Study

Helena Villa Martin, Cristina Botella, Azucena García-Palacios, Jorge Osma  
*Universitat Jaume I*

*In this work we present a case example of the use of virtual reality exposure for the treatment of panic disorder with agoraphobia. The assessment protocol and procedure (including a baseline period) and the cognitive-behavioral treatment program are described. The clinical measures were categorized into target behaviors, panic and agoraphobia measures, global functioning, and general psychopathology measures. The patient's expectations and satisfaction with regard to the virtual treatment were also assessed. The results showed an important reduction in all clinical measures after treatment with virtual exposure and the patient reached the therapeutic goals established during the pretreatment assessment. The patient also reported a good acceptance of virtual exposure. The goals achieved in the virtual environment generalized to real agoraphobic situations and to other real situations not treated. Three-, 6-, and 12-month follow-up assessments were conducted and long-term therapeutic gains were maintained.*

COGNITIVE-BEHAVIORAL programs (CBT) have demonstrated efficacy in the treatment of panic disorder with and without agoraphobia (Barlow, Esler, & Vitali, 1998; Barlow, Gorman, Shear, & Woods, 2000; Barlow, Raffa, & Cohen, 2002; Botella, 2001). CBT for panic disorder includes different components, mainly situational and interoceptive exposure, cognitive restructuring, and breathing or relaxation training. These programs are considered empirically supported treatments meeting most of the requirements of the Task Force on Promotion and Dissemination of Psychological Procedures (APA, 1993, 1995; Chambless et al., 1996, 1998; Nathan & Gorman, 2002).

The National Institutes of Health (NIH, 1991) recommended these programs as the treatment of choice for this disorder. However, there are some difficulties in the effective dissemination of empirically validated treatments among mental health professionals (Barlow, Levitt, & Bufka, 1999) and in the use of some therapeutic strategies included in these programs. For example, 20% to 25% of participants reject in vivo exposure because they find it too aversive to confront the feared situations (García-Palacios, Hoffman, Kwong See, Tsai, & Botella, 2001; Marks & O'Sullivan, 1992). Therefore, it is important that researchers develop strategies to increase the availability, attractiveness, and acceptance of these

treatment programs, and consider ways to maximize cost benefit.

One promising research line is the use of virtual reality (VR) as exposure therapy in the treatment of phobias, such as claustrophobia (Botella, Baños, Villa, Perpiñá, & García-Palacios, 2000; Botella, Villa, Baños, Perpiñá, & García-Palacios, 1999), fear of heights (Emmelkamp, Krijn, Hulsbosch, Vries, Schuemie, & van der Mast, 2002), spider phobia (García-Palacios, Hoffman, Carlin, Furness, & Botella, 2002b), and flying phobia (Maltby, Kirsch, Mayers, & Allen, 2002; Mühlberger, Herrmann, Wiedemann, Ellgring, & Pauli, 2001; Mühlberger, Wiedemann, & Pauli, 2003; Rothbaum, Hodges, Anderson, Price, & Smith, 2002; Wiederhold et al., 2002). These studies and others (see Anderson, Jacobs, & Rothbaum, 2004; Krijn, Emmelkamp, Olafsson, & Biemond, 2004; and Pull, 2005, for a review) show that VR is a useful tool that allows for a high degree of control over virtual situations. For example, in exposing a patient to a virtual mall, we can control the amount of people who are inside the mall, ensuring that the mall is not too crowded during the exposure task—unless we want the mall to be crowded. This is not always possible in real situations. Another advantage is the fact that we can conduct exposure to different situations (a bus, a train, a tunnel, an elevator) without leaving the consultation room. At the same time, we think that this new tool can help to increase patients' acceptance of exposure. García-Palacios et al. (2001) offered preliminary data of the preference for VR exposure over in vivo exposure in a sample of subclinical phobics. In two former studies our research team

observed that a VR exposure program for the treatment of claustrophobia produced benefits in agoraphobic behaviors not specifically treated (Botella et al., 1999; Botella et al., 2000).

These results allowed us to consider the possibility of using VR for the treatment of panic disorder with agoraphobia. With specific phobias it is often the case that VR exposure constitutes the only active component of the program. In the case of panic disorder with agoraphobia, VR would be used to apply one of the active components of the CBT program: situational and interoceptive exposure. A few studies offer descriptions and noncontrolled data on the use of VR in panic and agoraphobic in nonclinical samples (Moore, Wiederhold, Wiederhold, & Riva, 2002; North, North, & Coble, 1996; Vincelli, Choi, Molinari, Wiederhold, & Riva, 2000). There are three works that included clinical samples of panic disorder and agoraphobia. Jang, Ku, Shin, Choi, and Kim (2000) reported negative efficacy data from a noncontrolled study, where the VR environments designed were not able to elicit an anxiety response in seven participants. Vincelli et al. (2003) compared the efficacy of a VR program with a standard program and a waiting-list condition. They reported that both treatment groups improved significantly from pretest to posttest. However, this study presented some methodological limitations that make it difficult to draw definitive conclusions. It is not clear how much improvement in the VR group could be attributed to the VR exposure or to the in vivo exposure, given that the participants assigned to the VR condition also received instructions to practice in vivo exposure between sessions. Furthermore, the participants in each condition received a different amount of exposure. The authors noticed that VR produced results using 33% fewer sessions than CBT (the VR group received 8 sessions, whereas the CBT group received 14 sessions); however, the absence of an assessment session after Session 8 in the CBT group (in order to compare the improvement achieved in both groups after the same number of sessions) limits the value of this conclusion. Our research team has just completed a controlled study that offers pre-post efficacy data comparing in vivo exposure, VR exposure, and a waiting-list condition (Botella et al., 2002). However, in this work we only present short-term efficacy data and the description of the clinical protocol is limited.

Our VR program was designed to treat the main features of panic disorder and agoraphobic avoidance (situational and interoceptive avoidance). This program allows us to conduct interoceptive exposure (by simulation of bodily sensations like shortness of breath, blurred vision, or palpitations) while the patient is immersed in a

virtual agoraphobic situation (a shopping mall, a train, or a bus). Another characteristic of our virtual environment is the flexibility of the scenarios, including six meaningful agoraphobic situations where it is possible to practice numerous exposure tasks, with the possibility of introducing at the therapist and patient's will several elements in order to adapt the VR environment to the patient's needs (for a more detailed description of the VR environments, see Botella et al., 2004).

The aim of this work is to illustrate, using a case study, the utility of VR exposure in the treatment of panic disorder with agoraphobia. The contribution of this study to the VR exposure literature is to offer a detailed clinical description of the use of the program and to offer the first preliminary data of the long-term efficacy of VR exposure for the treatment of panic disorder with agoraphobia.

## Method

### Participant

The patient is a 26-year-old Caucasian woman. She has a bachelor's degree. She lives with her boyfriend and works as a salesperson in real estate. An important issue in the history of her problem is the fact that she comes from a different city, and since she moved to this new town it has been difficult for her to establish new relationships. Also, she thinks that her job is very competitive and, because of her difficulty establishing relationships, she perceives herself as lacking in the social skills to perform her job. Ten months before coming to our center, and during a period of job stress defined by her as "too much competition and responsibility," she started to experience panic attacks characterized by intense fear of suffocation accompanied by nausea, dizziness, lack of breath, and choking sensations. She believed she could have a lung disease. The medical tests discarded any organic disease and she was diagnosed with panic disorder with agoraphobia and began taking anxiolytic medication prescribed by a psychiatrist. She started with 1 mg of alprazolam daily, and then the medication was changed to 1 mg of alprazolam retard daily. She had been taking this medication for the last 7 months when she arrived at our clinic. The medication helped to reduce the frequency and intensity of panic attacks. However, she still experienced shortness of breath, she worried about her bodily sensations, and she avoided situations where the possibility of a panic attack was higher and where she thought she could stop breathing and it would not be possible to escape easily (closed spaces, taking the train or the bus, or crowded places as pubs, discos, and restaurants). She reported that the use of medication increased her feeling of safety and that if she discontinued medication the frequency and intensity of the

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات