

# Amelia by XRHealth Clinical Case

## Fear of Needles



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# Patient

## Woman, 28 years old

Blood and needle phobia. She has not had a blood test in more than 10 years, doesn't visit her GP because she's scared he will send her for a blood test and she hasn't been to the gynecologist.

### Personality:

- Obsessive
- Nervous
- Autoexigente
- Self-demanding
- Perfectionist
- Hypersensible
- Controller

### Other fears:

- Flying
- Attractions
- Driving

## Reference diagnosis

- **Therapeutic process** previously:
  - Treatment at 16 years old → Bullying and depression
  - Treatment 3 years ago → Stress and anxiety binges.
- Overweight and high cholesterol levels.
- Diagnosed with **Obsessive Compulsive Disorder** (OCD)
- Anxious symptomatology:
  - Dizziness
  - Tachycardia
  - Sweating
  - Fainting
  - Choking sensation
  - Alert

# Objectives

## Objectives to be achieved.

Reduce the emotional discomfort, removing the specific phobias of the patient by using VR.

Provide information to the patient about cognitive functioning based on a cognitive-behavioural approach and about anxiety and phobias.

## Methodology

A total of **8 sessions** lasting an hour were carried out over **8 weeks**.

First Sessions → Focused on PSYCHOEDUCATION

- Focused on a hierarchy of conflicts, in order to work them out.

Subsequent sessions → Focused on the use of VR

- Focused on progressive exposures.



# Development

## **Exploration interview**

The first session was based on an exploration about symptomatology of the patient. Exploring her fears and sensations certain situations produce in her.

## **Psychoeducation**

The patient was introduced to the functioning of the human mind from a cognitive-behavioural approach, she was also provided with information about anxiety and phobias, explaining to her the tendency of evitation she adopts.

Likewise a hierarchy of items that produce discomfort in the patient was created. Beginning with the least frightening items and ending with the most.

Evaluations of irrational beliefs.

## **Progressive exposure**

During the third session the exposures started, in a progressive way. The first items of the hierarchy were exposed. → Without VR

There was a needle over the table, in order to expose the patient to thing that scares her → familiarize her with the object.

She was introduced to the diaphragmatic respiration and the Jacobson relaxation technique.

**Homework:** Watch blood analysis videos at home.

# Development

## Session 1

During the third session, when the relaxation techniques were learned the VR was introduced.


**Jacobson** → VR. As an introduction and practice of what was learned.

**Medium low exposure:** Waiting room **as companion** → SUD: 8. After a second repetition, her Subjective units of distress decrease to a 6, but the sensation of disgust remains.

## Session 2

- **Second exposure with VR:** As a patient → Scene: **Waiting room**
    - Injection
    - Extraction
- ➔ **Anguish**  
SUD: 8, after a second try → 6


At first she wasn't able to stretch her arm. After the second exposure, she was able to stretch her arm and play a bit with the needle.



**Progressive muscle relaxation**

Using tension relaxation exercises, ordered by muscle groups, this virtual environment can train your patient in the practice of progressive muscle relaxation.

[Start session](#) [Open guide](#) [Virtual Environment](#)



**★ Waiting Room**

The patient is at the hospital where the blood will be drawn. He/she is waiting for the nurse. Difficulty: easy-hard (adjustable via events and configuration settings).

[Launch Environment](#)

Virtual Reality

# Development

## Session 3

- **Third VR exposure session:** As a patient → Scene: **Normal Analysis.**
  - She states a feeling of weakness
  - SUD: 5

## Session 4

- **VR Exposure:** As a patient → Scene: **Blood analysis + Elastic band** → Create a stronger reality sensation
  - SUD: 4

## Session 5

- **VR exposure + Physical effect** → Play with immersion

## Session 6

- **Easy extraction**

## **Sessions 7 and 8**

- **Difficult extraction** → 2 tubes of blood
  - She didn't avoid looking, stated disgust but not dizziness.



### ★ Real Extraction

Video recorded from a first person point of view of a real blood extraction. This can be the last step before in vivo exposure for fear of needles. Difficulty: Hard

Launch Environment ▶

Video 2D

# Results

## **At the end of therapy it was possible to observe:**

When therapy ended, the patient showed a great improvement in her fears and was able to overcome different obstacles:

- **Accompanied Blood analysis**
  - Nervous, without anxious symptomatology.
- **In less than a year she was able to have 2 blood analysis.**
  - **one of them had difficulties** → The nurse couldn't find her vein, she had to receive 2 punctures.
  - No Negative symptomatology → **She tried to calm the nurse.**
- **She went to the gynecologist**
- **Visits her GP**
- **Her self esteem increased and she exposed herself to situations that she previously consider impossible to face.**



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by XRHealth