

# Amelia by XRHealth Clinical Case

Acquired brain damage



Health care professional with expertise in VR:  
Sandra Sánchez

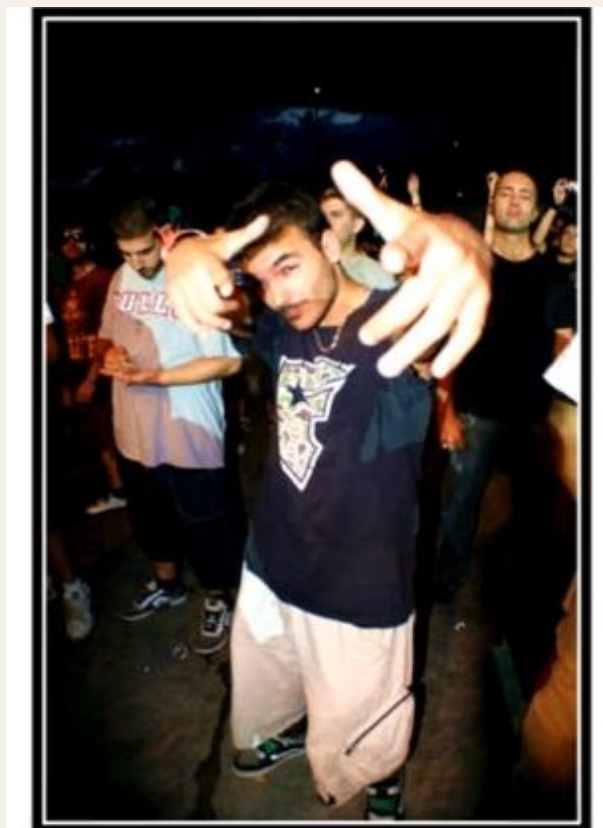
# Patient

**Diego, 27. He was 23 years old when he had an accident.**

He was a DJ, he loves comedy and music.

## Reference diagnosis

- Severe acquired brain damage.
- Very reduced and impaired body mobility. He needs a wheelchair to be able to move around.
- Generalized hypertension, especially in his extremities.
- Lack of verbal communication (use of intercoms).
- Optimum cognition and total consciousness (evaluated by brain mapping).
- In general terms, cognition is moderately preserved, but it presents several attention problems, memory deficits, feelings of anxiety, mood swings and slowness in processing information that leads to frustration.



# Objectives

## Objectives to be achieved.

Maximum recovery in motor, verbal and cognitive functions.

The treatment was carried out through different therapeutic areas:

- Speech therapy to work on verbal language.
- Physiotherapy to work on the motor functions.
- Cognitive therapy and occupational therapy to work the cognitive functions.

## Short-term objectives (rehabilitation process):

- Stimulation: Use of VR to facilitate a connection with the environment, giving him intimacy, freedom, and the ability to decide what to do...
- Activation of static mobility.
- Standing: Presenting environments where there are displacements.
- Body movements.

## Methodology

Use of cognitive and occupational therapy considered FUNDAMENTAL since it facilitates work on the verbalization of the emotional state of the patient.





# Development

VR is incorporated into therapy for the limitations presented during animal-assisted therapies because he could not access many settings.

After the incorporation of VR, there is a progressive increase in the **stimulation and motivation** of the patient due to the high variability of the environments with which he can interact, enhanced by sensory experiences that helped him to complete the immersion.

In addition, the levels of autonomy were improved and his self-esteem increased considerably. The environments that presented a greater acceptance to increase these parameters were those in which he could see the body, make a movement and see other people (plane, car, subway...). Likewise, environments such as the institute or the auditorium were very positive in encourage his motivation since they were environments that were previously part of his life.

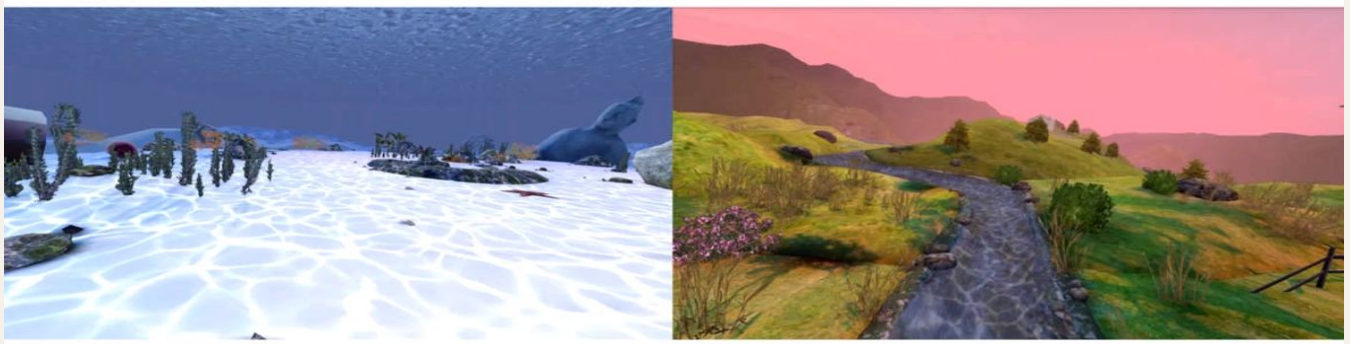
Another aspect that could be acted on with the use of VR were **relaxation exercises and mindfulness** to control anxiety and to perform exercises to **search for elements**.



# Results

It's possible to observe great benefits in Diego's case after the incorporation of VR in the therapy. Above all, we see an improvement in Diego's motivation and self-esteem, which can be seen in situations that are familiar and pleasant for him to experience. In the same way, We can see how the great variability of environments prevents a routine that ends up resulting in boredom in the patient.

The use of the electrodermal response sensor together with VR allows us to have an idea of what is happening without having a verbal response from the patient, something very useful especially in Diego's case.





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by XRHealth