Abstract
We report the case study of a 22-year-old woman with a >3-year history of dizziness. She described her dizziness episodes as "heavy headedness" and "feeling of imbalance" and was diagnosed with Chronic Subjective Dizziness (CSD). CSD has been shown to be linked to emotional disorders, particularly anxiety. During a seminar about the relationship between human standing posture and emotions, she performed a postural-emotional exercise along with the other seminar attendees. After the exercise the dizziness had completely resolved. One month later, in a scheduled interview, she reported being less anxious and had no further dizziness symptoms. Clinical trials should be conducted in order to better understand the effect of emotional treatments on CSD and Vestibular disorders in general.

Keywords: Dizziness; Emotions; Posture; Vestibular system

Introduction
We report the case of D.A., a 22-year-old woman with a >3-year medical history of dizziness. She was diagnosed with Chronic Subjective Dizziness (CSD). CSD manifests with multiple symptoms such as persistent sensation of non-vertiginous dizziness that may include vague descriptors such as lightheadedness, heavy headedness, a feeling of imbalance often not apparent to others; Chronic hypersensitivity to self-motion or the movement of objects in the environment; Exacerbation of symptoms in settings with complex visual stimuli Ruckenstein & Staab [1]. A considerable number of patients with CSD also have an emotional disorder such as anxiety Staab & Ruckenstein [2]. Traditional medications or interventions for vestibular disease tend not to resolve CSD Ruckenstein & Staab [1]. Effective treatment methods include behavioral interventions Holmberg et al. [3]. And patient education, centered on understanding that these symptoms stem from a psychiatric process and not a physical disorder Godemann et al. [4].

Pathophysiology
CSD may be more common than first supposed. In a sample of 1552 patients with vertigo, 10.6% had CSD Ódman & Maire [5]. The same work revealed that anxiety was a potent pre-disposing factor. Other pre-disposing factors were fear of heights and previous vestibular event. These findings corroborate the results of Staab and Ruckenstein [6] who found that 60% of patients with CSD had a primary or secondary anxiety disorder. The study of Ódman & Maire [5] also showed that 79% had poor performance on dynamic petrography, demonstrating a highly complex interaction between different brain functions and the vestibular system. Ruckenstein & Staab [1] noted that even when anxiety is not the root cause of dizziness; it becomes an important factor with persistence of the symptom.

There are previous reports about the relationship between emotions and vestibular dysfunction Wade [7]. The frontal lobes have an important role in vestibular processes. The prefrontal regions provide an important interface for the visuospatial, cognitive component of the vestibular cortical network and emotions Carmona et al. [8]. The anterior cingulated gyrus may act as a bridge between the vestibular sensor motor regions and the prefrontal areas that entail motivational states Bush et al. [9]. When the prefrontal lobe is damaged, this results in weaker evoked potential responses to soma to sensory stimulation Yamaguchi & Knight [10,11]. 1Additionally, the prefrontal area regulates unpleasant visceral sensations related to vestibular stimulation Balaban & Thayer [12], Miller et al. [13]. Nagai et al. [14].

Patients with CSD and anxiety, as well as those with a secondary anxiety linked to vestibular dysfunction, have found symptom relief with selective serotonin reuptake inhibitors Staub & Ruckenstein [2]. On the other hand, this medication does not appear to help patients whose neuro to logic condition increases a pre-existing anxiety Staab & Ruckenstein [2], Edelman et al. [15] showed that patients with CSD also found Cognitive Behavioral Therapy helpful in reducing functional impairment.

History
We report the case of D.A., a 22-year-old woman with a >3-year medical history of dizziness. She described her dizziness episodes as "heavy headedness" and "feeling of imbalance" and was diagnosed with CSD.

Treatment
The cure was found by chance. The subject was attending a seminar about the relationship between human standing posture and emotions. She performed a postural-emotional exercise along with the other seminar attendees. This did not constitute specific treatment for her case, but only a general exercise. The exercise proposed was drawn from a book about embodiment of emotions Rosario [16], which, in turn, was based on the theories of Keleman [17] and the five-step exercise. This is a methodology for the concomitant treatment of both postural deficits and emotional problems. Thus, patients can reeducate their own patterns.

All the attendees underwent the same process at the same time:
While standing relaxed, attendees took note of their posture with eyes closed. They then followed a verbal command to pay attention to how their weight was distributed between their feet, to the position of body segments in relation to each other, to which muscles were tense and which were relaxed. Subsequently, an emotion was evoked by recalling a past event in which this specific emotion was strongly felt. Each participant chose their own emotion for the exercise.

After one minute feeling this emotion, the attendees followed the verbal commands of the five steps:

- a. First verbal command step – “What are you doing? - Understand what the problem is, either emotional or postural, and the reflexes in your muscles. Example: Where is the tension when I control anger?”

- b. Second verbal command step – “How are you doing it? - Enhance the muscle tension or postural pattern.”


- d. Fourth verbal command step – “What happens when you stop doing it? - Receive the somatic-emotional responses that emerge. This is a time to pause, to understand what happens.” – Two minutes were given for all attendees to feel and understand this phase before the next step.

- e. Fifth verbal command step – “How can you use what you have learned about it? - Recognize how to make use of this self-information. This is a phase of choice: Will you continue using your old strategy? Can you create another? Can you live without a strategy for this situation?”

After the talk before the exercise D.A. reported feeling dizziness. After the exercise, the dizziness had completely vanished. She had chosen her anxiety for the exercise. Because the cure was found by chance, it was not possible to carry out a detailed evaluation of her dizziness. One month later, in a scheduled interview, she reported being less anxious and had no further dizziness symptoms.

**Recommendations**

There is scientific evidence identifying links between vestibular problems and psychiatric disorders such as anxiety. This case study supports these findings. Clinical trials should be conducted in order to better understand the effect of emotional treatments on CSD and Vestibular disorders in general.

**References**


