Study finds motorist disorientation syndrome is not only caused by vestibular dysfunction

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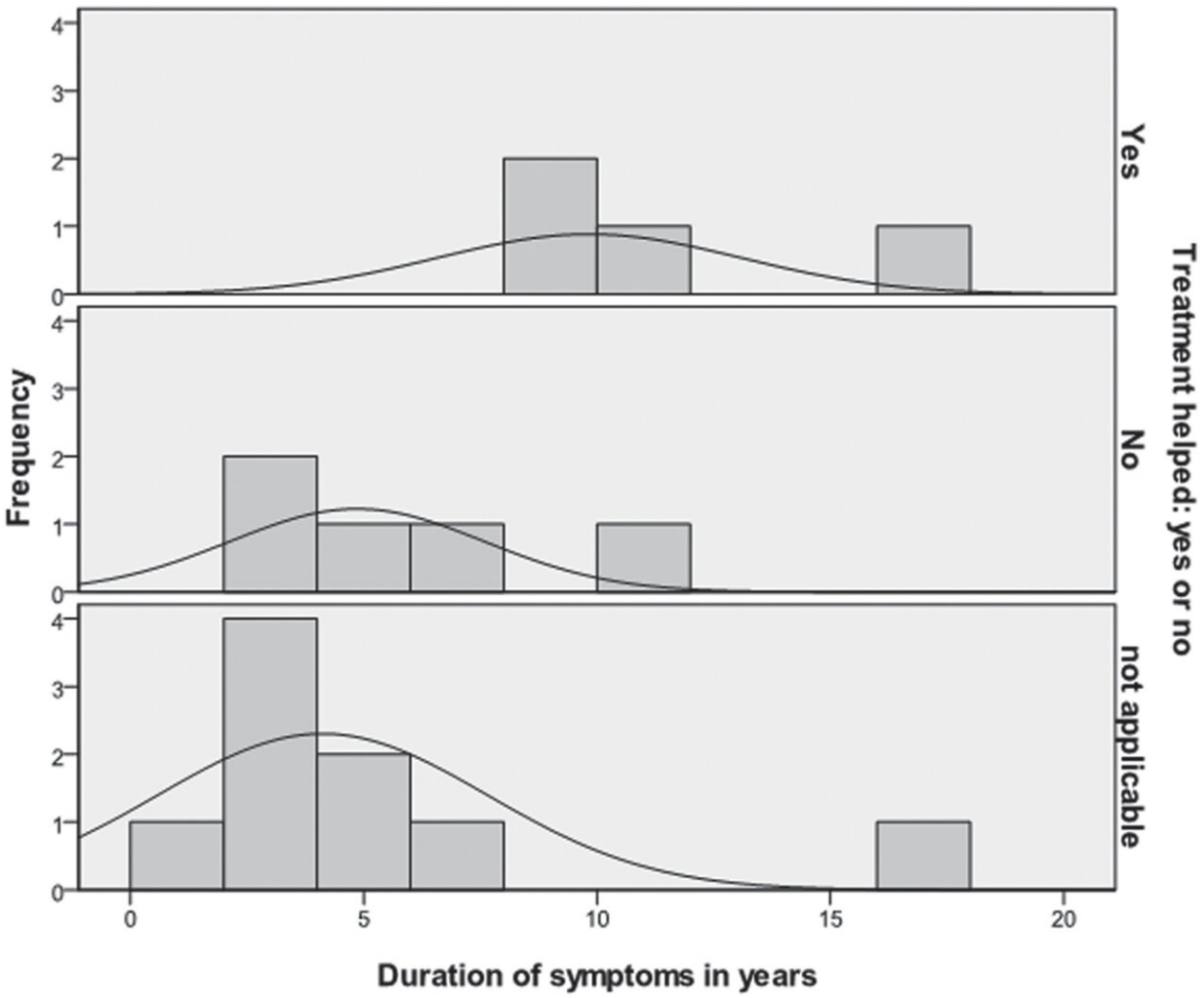

Histogram to show the relationship between the duration of symptoms and whether treatment helped. Credit: *Journal of Vestibular Research* (2023). DOI: 10.3233/VES-220088

A large case series aimed at understanding the factors underlying motorist disorientation syndrome (MDS) has found that patients experience severe, consistent symptoms comparable to vestibular migraine.

Previously there has been speculation that underlying peripheral vestibular hypofunction, when the inner ear part of the balance system is not working properly, contributes to this presentation. However, vestibular deficits were not a consistent feature in the patients studied. The findings have been published in the *Journal of Vestibular Research*.

In recent years there has been increasing interest in the complex integration of input signals that control spatial orientation, retinal stability, and balance in response to a changing visual environment such as in a moving car. MDS is a term used to describe patients who primarily experience symptoms of dizziness and/or disorientation when driving a car. There is currently only a limited amount of evidence-based information available about this condition.

Lead investigator Carolyn Ainsworth, MD, Neuro-otology, Department of ENT, Guy's and St Thomas' NHS Trust, explains, "Our research entailed looking at the presenting symptoms, characteristics and vestibular test results of a group of patients whose main complaint was of illusions of movement of self/vehicle when driving."

"We found consistencies in the presenting symptoms and a high symptom burden, however only 60% of patients had underlying vestibular test deficits. Although this does not exclude vestibular dysfunction, it does raise the possibility of other factors contributing to the development of this presentation."

The study also found similarities to visually induced dizziness and persistent postural perceptual dizziness (PPPD), a functional

neurological disorder. Other contributing factors could be anxiety and depression.

The symptoms of the 18 patients assessed were severe enough to cause 17 patients to change their driving habits. Six subjects stopped driving completely, while 11 stopped driving on roads that provoke MDS (open, featureless roads, going over the brow or descending hills, or going around corners). Only one patient continued to drive as usual.

"Diagnostic criteria are very much needed to aid research into effective treatments for patients. This study provides data that can contribute to discussion about where MDS should be placed within the current framework for diagnosis of vestibular disorders."

"In turn, improved recognition and appropriate classification of this symptom complex will help clinicians recognize the specific features of the condition, inspiring further research into the role of potential factors such as visual dependency and facilitating further research into treatment," Dr. Ainsworth concludes.

More information: Carolyn Ainsworth et al, Motorist disorientation syndrome; clinical features and vestibular findings, *Journal of Vestibular Research* (2023). DOI: 10.3233/VES-220088

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