

Researchers call for standardized protocols to advance research and treatment of functional movement disorders

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Functional Movement Disorders (FMDs) are common and disabling

conditions. With an increasing research interest in FMDs, including the emergence of intervention trials, it is crucial to examine research methodology and develop standardized protocols. In a review published in *NeuroRehabilitation* investigators expose significant variability in prior FMD studies, particularly in the use of inclusion criteria. They also propose potential fixes to develop evidence-based diagnostic criteria. This shift would contribute to improved research methodology and patient care.

FMDs were previously identified by a range of terms, including "hysteria," "conversion disorder," "psychogenic disorder," and "dissociative disorder." The term "functional" has recently become accepted among clinicians who specialize in care for persons with FMD. Adoption of this non-pejorative term is viewed as a step towards advancing the scientific evaluation and more effective care of patients with this disorder.

Co-author Brian Kirkwood, at the University of Alabama at Birmingham, Department of Physical Medicine and Rehabilitation, explained that "as a second-year medical student, I felt I had received mixed messages about FMDs from clinician-educators. More than one had told me that FMDs should only be considered after the exclusion of other known diseases. Victor W. Mark, MD, invited me to work on a research project on the diagnosis of FMDs. I was excited to be able to develop my understanding alongside someone who has spent a great deal of his career diagnosing and providing therapy to patients with these perplexing conditions. We also noticed that many articles on FMDs referred to varying kinds of diagnostic methods, which contributed to our motivation to conduct this research."

Dr. Mark, of the University of Alabama at Birmingham, Departments of Physical Medicine and Rehabilitation, Neurology, and Psychology, and Mr. Kirkwood comprehensively analyzed the inclusion criteria of 79

FMD studies conducted over the past 20 years. They found no gold standard, but rather inconsistent inclusion criteria comprising a roughly equal application of three different diagnostic methods. These included those developed for assessing "functional" dystonia; the criteria provided in the Diagnostic and Statistical Manual of "Mental" Disorders (DSM) editions; or individual clinician-determined diagnoses (including from non-specialists) that did not follow specific guidelines.

Further, they determined that the criteria themselves used vague terms based on outdated opinions regarding the underlying causes of these disorders. They also identified inclusion methodologies that were not appropriate.

"Our review revealed considerable discrepancies in the choice of [diagnostic criteria](#) used to include subjects in FMD research," noted lead investigator Dr. Mark. "Although there is relative consistency within studies that investigate the same phenotype (i.e., clinical characteristics such as weakness or tremor), the choice of criteria varies depending on what specific phenotype is being studied. Our review also found significant variability in the criteria used in mixed studies (those that evaluated more than one phenotype). It was also common for researchers to provide unreproducible methods. Less frequently, studies included patients based purely on exclusion of 'organic' disease (that is, mainstream neurological disorders), without specifying the bases of exclusion."

The authors introduce the alternate diagnostic term "attentionally-modifiable disorder." They recommend that clinicians be alert for symptoms that can be modified by the patient's self-attention, regardless of the disease's characteristics. When finding these symptoms they recommend, referring patients for behavioral therapy. The term "attentionally-modifiable disorder" is recommended to co-exist with biomarker-based diagnostic terms (e.g., stroke, brain tumor). Biomarker

aspects of such disease should be managed according to disease-specific practice standards.

"FMD is very common. When this disorder becomes more widely recognized by both clinicians and the general public, it should become less misunderstood and facilitate the treatment of patients with appropriate methods," commented Mr. Kirkwood.

"The potential impact of creating a set of diagnostic criteria that are generalizable to all FMD phenotypes, understandable by clinicians, and not based on the exclusion of other known diseases cannot be understated. I believe this could increase the reliability of diagnosis, acceptance of the diagnosis by patients, and comfort among clinicians in diagnosing and treating these [disorders](#)," concluded Dr. Mark.

More information: Brian Kirkwood et al, Consistency of inclusion criteria for Functional Movement Disorder clinical research studies: A systematic review, *NeuroRehabilitation* (2022). [DOI: 10.3233/NRE-228002](#)

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