Movement Disorders
CLINICAL PRACTICE

Gender Differences in Functional Movement Disorder: Sociocultural or Biological?

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We read with great interest the study by Baizabal-Carvallo and Jankovic[1] addressing the sex differences in functional movement disorders (FMDs). Previous studies have demonstrated that FMDs, although seen in almost all age groups, have a relatively higher incidence in the middle-age group with a predilection for the female sex. Baizabal-Carvallo and Jankovic[1] also found that women represented 70% of the FMD cases in their cohort as women tend to access health services more frequently, resulting in a higher rate of consultations of women. In two of our FMD case series, we found that among children, girls were more than boys, while in adults including elderly, males were more than females. Male preponderance in adult age group can be explained as adult females tend to have lower literacy rate, access to health services and health expenditures as compared to males because of patriarchal nature of Indian society.[2,3] Other factors such as stereotyped preconceptions about men and women may also lead to an exaggeration of observed sex differences. Researchers found that physicians tend to consider men's symptoms as organic and women's symptoms as psychosocial.[4] This reflects the important roles that social and cultural backgrounds play in gender predominance in FMDs.

Baizabal-Carvallo and Jankovic[1] noticed that men and women were equally represented in patients aged 50 years or older, and thus sex differences gradually diminish after menopause in women, suggesting that the observed sex-specific disease pattern may be partly attributed to the effect of sex hormones. Behavioral responses to psychosocial stress in humans are sexually dimorphic. Physiologically, the stress response is mediated by oxytocin and probably sex hormones and endogenous opioids via the modulation of sympathetic and hypothalamic-pituitary-adrenal activity. However, to the best of our knowledge, the influence of biological factors including the effect of sex hormones has never been studied in FMDs. Thus, it would be premature to comment on their potential influence on FMDs. In their study, Baizabal-Carvallo and Jankovic[1] found that men had more frequent physical trauma, whereas women acknowledged psychological trauma more commonly than men. The inconsistencies between responses to physiological and psychological stress have been demonstrated in previous studies. Although the physiological responses did not differ across sexes, the psychological measures and neuroimaging data clearly showed asymmetric prefrontal activity in men and primarily limbic activation in women.[5] The reporting bias may partly be attributed to the fact that women are more likely to report emotional stress than men.

In terms of phenomenology, women had more frequent functional dystonia than men. The female predominance in functional cranial dystonia resembling hemifacial spasm and blepharospasm is well known.

Given the complex biological, cultural, and social interplay underlying the pathogenesis of functional disorders, recognition of the exact mechanism behind sex predilection of FMDs remains inconclusive. Future research needs to explore the combination of neuroimaging, behavioral, and physiologic approaches for probing the neurobiological basis of sex-specific differences in FMD.

Author Roles

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