

Clinical characteristics in mass social media-induced illness with functional Tourette-like behavior compared to Tourette syndrome

Fremer C¹, Pisarenko A¹, Haas M¹, Szejko N^{2,3}, Laudénbach L¹, Claudia Wegener⁴,

Müller-Vahl K¹

¹Clinic of Psychiatry, Socialpsychiatry and Psychotherapy, Hannover Medical School, Germany

²Department of Neurology, Medical University of Warsaw, Poland

³Department of Bioethics, Medical University of Warsaw, Poland

⁴Department of Audiovisual Media Studies, Filmuniversity Babelsberg, Germany

Background:

Tourette syndrome (TS) is defined by the DSM-5 as a chronic tic disorder with the presence of at least two motor and one vocal tics over a period >12 months in someone under the age of 18 after excluding secondary causes. Even in combination with the definition for tics as rapid, repetitive, non-rhythmic movements or vocalizations for those, who are unfamiliar with the diagnosis, differentiation from functional Tourette-like behavior (FTB) induced by social media (=mass social media-induced illness, MSMI) is challenging.

Since about 3 years, MSMI-FTB became a global phenomenon presumably spread via numerous influencers on several social media channels including YouTube and TikTok. In Germany, we identified the host of the YouTube channel “Gewitter im Kopf” (English: “Thunderstorm in the brain”) as the virtual index person of this outbreak, since patients presenting in our specialized outpatient clinic showed similar or even identical symptoms. We present clinical characteristics of a relatively large single-center sample of patients with MSMI-FTB compared to data from a large sample of patients with TS and other chronic tic disorders that may be helpful to differentiate both diseases from each other.

Methods:

We collected a large number of clinical data from 32 patients (mean/median age: 20.1/18 years, range: 11-53 years, $n=16$ females) with MSMI-FTB. Sex differences were examined with respect to age and kind of onset and course of FTB, premonitory sensations, suppressibility, rostro-caudal distribution, distractibility, factors resulting in complete symptom reduction, and absolute numbers of different motor and vocal FTB. Results were compared to a large sample of patients with primary tic disorders ($n=1032$ including 529 children, $n=235$ females) from our center.

Results and Conclusions:

We identified several clinical characteristics in patients with MSMI-FTB that allow a clear differentiation including abrupt onset (in 84%), mean age at onset at age 19, and constant symptom deterioration (in 59%). No sex differences were found concerning the above-mentioned criteria. Above all, vocalizations and movements were mainly complex and in large numbers. More specifically, the absolute numbers of *complex* movements and vocalizations were nine times greater than that of *simple* movements and vocalizations; similarly, that of (simple and complex) *vocalizations* were one and a half times greater than that of (simple and complex) *movements*. Although the presence of premonitory sensations and suppressibility by itself did not allow a differentiation, kind and duration of these phenomena were very different compared to description in

patients with TS. Furthermore we found a significantly higher age at onset ($p_c < 0.001$) a significantly higher rate of obscene and socially inappropriate symptoms/coproph phenomena ($p_c < 0.001$), a significantly lower rate of comorbid ADHD ($p_c = 0.003$), a significantly higher rate of OCB ($p_c < 0.001$) and a significantly higher rate of females ($p = 0.01$) in comparison to a sample of patients with TS only.

In conclusion, based on a thorough clinical characterization, the diagnosis of MSMI-FTB can be made easily and clearly differentiated from tics in TS.