



Stop that! It's not Tourette's but a new type of mass sociogenic illness

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We report the first outbreak of a new type of mass sociogenic illness that in contrast to all previously reported episodes is spread solely via social media. Accordingly, we suggest the more specific term 'mass social media-induced illness'.

In Germany, the current outbreak of mass social media-induced illness is initiated by a 'virtual' index case, who is the second most successful YouTube creator in Germany and enjoys enormous popularity among young people. Affected teenagers present with similar or identical functional 'Tourette-like' behaviours, which can be clearly differentiated from tics in Tourette syndrome.

Functional 'Tourette-like' symptoms can be regarded as the 'modern' form of the well-known motor variant of mass sociogenic illness. Moreover, they can be viewed as the 21st century expression of a culture-bound stress reaction of our post-modern society emphasizing the uniqueness of individuals and valuing their alleged exceptionality, thus promoting attention-seeking behaviours and aggravating the permanent identity crisis of modern man. We wish to raise awareness of the current global Tourette-like mass social media-induced illness outbreak. A large number of young people across different countries are affected, with considerable impact on health care systems and society as a whole, since spread via social media is no longer restricted to specific locations such as local communities or school environments spread via social media is no longer restricted to specific locations such as schools or towns.

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Abbreviations: FMD = functional movement disorder; MSI = mass sociogenic illness; MSMI = mass social media-induced illness

Introduction

In several countries, currently we are facing a new type of mass sociogenic illness (MSI) (also known as 'mass psychogenic illness', MPI) that in contrast to all previously reported episodes of MSI is spread solely via social media and hence is not locally restricted. So far, no such social media-induced episodes have been described, although by 2012, it was speculated that MSI may not require in any case direct visual or verbal contact

among the persons affected.¹ For this new type of MSI, we therefore suggest the more specific term 'mass social media-induced illness' (MSMI). Hereby, we want to raise awareness of its global occurrence, since only correct diagnosis enables appropriate treatment and termination of symptoms.² Moreover, MSI outbreaks are socially and economically costly,³ independently of how they spread.

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Prerequisites enabling current outbreak of social media-induced illness: MSMI

Recently, in several countries including Germany, UK,⁴ USA,⁵ Denmark, France and Canada (personal communication), an increasing number of videos were released on social media platforms such as YouTube, TikTok and Instagram showing people who claim to be suffering from Tourette syndrome—a childhood onset chronic combined motor and vocal tic disorder—while in fact most individuals had functional symptoms only resembling Tourette syndrome. On 21 February 2019—only shortly before the first patient with MSMI presented in our clinic in May 2019—the German YouTube channel *Gewitter im Kopf* (English, ‘thunderstorm in the brain’) was launched by a 22-year-old man called Jan Zimmermann. Judging from the videos, he indeed suffers from a mild form of Tourette syndrome. On this YouTube channel, however, he shows a countless number of movements, vocalizations, words, phrases and bizarre behaviours that he claims are tics, but are clearly functional in nature. Tourette experts can easily tell the difference,^{6,7} since the majority of supposed ‘tics’ are complex and stereotyped and mimic those symptoms that lay-people typically associate with Tourette syndrome: coprolalia, copropraxia and non-obscene socially inappropriate behaviours (NOSI). For most of the shown symptoms, there are obviously strong situational contexts with exclamations of long sentences with insults, swear words and obscenities that are in this form unknown in Tourette syndrome. Furthermore, the number of symptoms and in particular the number of different swear words and insults presented are countless and thus far beyond those of tics in Tourette syndrome. Finally, presented symptoms quickly change on an almost weekly basis in parallel to newly released videos, while most popular symptoms are repeated several times.

Soon after it was started, the YouTube channel *Gewitter im Kopf* was rapidly spread on social media and reached 1 million subscribers in <3 months making Jan Zimmermann the top YouTube breakout creator in Germany in 2019. He earned further attention from the YouTube and Internet community by participating in other popular YouTube channels and TV shows, through posts of these shows on YouTube and reaction videos from the highest-earning influencers in Germany Unge and MontanaBlack and by receiving special TubeAwards. Today, Jan Zimmermann is the second most successful YouTube creator in Germany and enjoys enormous popularity among teenagers (status on 2 January 2022): *Gewitter im Kopf* is subscribed to by 2.20 million people and 336 videos have been released that were viewed 315 826 001 times in total.⁸ Meanwhile, the channel is accompanied by a merchandising campaign and most popular exclamations are reproduced on products such as shirts and caps.⁹ Finally, a mobile app has been released including the most popular supposedly ‘vocal tics’.¹⁰ Already on 4 June 2019, the two most relevant German advocacy groups [Tourette Gesellschaft Deutschland (TGD e. V.) and InteressenVerband Tic & Tourette Syndrom (IVTS e. V.)] distanced themselves from the YouTube channel¹¹ and later on from the app,¹² because of their obvious misrepresentations and disrespect to people with Tourette syndrome.

Affected teenagers of MSMI present with functional Tourette-like symptoms

Over the past 2 years, a remarkably high number of young patients have been referred to our specialized Tourette outpatient clinic presenting with symptoms closely resembling the ones Jan Zimmermann shows in his videos. All these patients had been

prediagnosed with Tourette syndrome, even partly as treatment-resistant Tourette syndrome after having received pharmacotherapy with different drugs including antipsychotics. Remarkably, in none of these cases, neither the correct diagnosis of functional (Tourette-like) movement disorder (FMD) had been made, nor had the interrelation with and influence by social media been recognized.

Although a detailed description of clinical characteristics is beyond the scope of this paper and is currently in preparation for publication elsewhere, here we want to briefly summarize how in this group of patients diagnoses of Tourette-like FMD were confirmed. First, all patients presented with nearly identical movements and vocalizations that not only resemble Jan Zimmermann’s symptoms, but are in part exactly the same, such as shouting the German words *Pommes* (English: potatoes), *Bombe* (English: bomb), *Heil Hitler*, *Du bist häßlich* (English: you are ugly) and *Fliegende Haie* (English: flying sharks) as well as bizarre and complex behaviours such as throwing pens at school and dishes at home, and crushing eggs in the kitchen. Even more, similar to Jan Zimmermann, words and phrases are pronounced with a changed voice at low pitch so that family members are able to differentiate normal conversation from the supposed vocal tics solely on the basis of the tone of voice. Second, a substantial number of patients gave their supposed Tourette syndrome a name just as Jan Zimmermann does, who calls his symptoms ‘Gisela’. Third, patients often reported to be unable to perform unpleasant tasks because of their symptoms resulting in release from obligations at school and home, while symptoms temporarily completely disappear while conducting favourite activities. Fourth, in some patients, a rapid and complete remission occurred after exclusion of the diagnosis of Tourette syndrome.

Although some patients did indeed suffer in addition from mild Tourette syndrome, for all newly emerged symptoms, it could be clearly ruled out that they were tics for several reasons: (i) onset was abrupt instead of slow; (ii) symptoms constantly deteriorated instead of typical waxing and waning of tics; (iii) ‘simple’ movements (e.g. eye blinking) and noises (e.g. clearing one’s throat) were clearly in the background or completely absent, although being the most common and typical symptoms in Tourette syndrome; (iv) movements were mainly complex and stereotyped, and predominantly located in the arms and body instead of in the eyes and face; (v) overall, the number of different movements, noises and words was ‘countless’ and far beyond the typical number of tics in Tourette syndrome; and (vi) premonitory feelings were reported with atypical location, quality and duration compared to tics in Tourette syndrome. Thus, worsening of pre-existing Tourette syndrome, for example due to the COVID-19 pandemic as suggested elsewhere,^{4,5} can be clearly ruled out in our patients.

MSMI is initiated by ‘virtual’ index cases

In general, an index case is necessary for the initiation of an MSI outbreak.^{3,13} In the current MSMI outbreak in Germany, Jan Zimmermann can be regarded as a ‘virtual’ index case. Meanwhile, more and more people with Tourette-like FMD—including some of our patients—appear on the German internet and TV. Thus, spread via social media seems to induce ‘secondary virtual’ index cases resulting in further spread without local restrictions. Because of the extremely high degree of recognition of these videos among young people, we assume that spread is also possible simply by verbal communication. Interestingly, at the same time in other countries, similar channels launched on YouTube and TikTok so these influencers may act as further ‘virtual’ index cases (personal communication).^{4,5}

Based on the already initiated exchange among international Tourette experts, it seems that patients identified in Germany exhibit some differences compared to cases seen in other countries such as Canada (personal communication). While it appears that age at onset is very similar in different countries with a preponderance of adolescents and young adults, gender distribution seems to be different: while half of our patients are male, the group of Davide Martino and Tamara Pringsheim at the University of Calgary in Canada reports a female to male ratio of about 9:1. This difference might be related to the different gender of most influential ‘virtual’ index cases in Germany compared to Canada. While we were able to clearly identify the German speaking man Jan Zimmermann as a ‘virtual’ index case, in contrast, in Canada, tic-like symptoms in young patients seem to be mainly triggered by the presentation of such behaviours by the English-speaking 20-year-old female Evie Meg or better known under her TikTok name ‘thistrippyhippie’.

Justification of the concept of MSMI

In 2012, Bartholomew *et al.*¹ stated: ‘It is unclear if MPI could spread solely via social media among people with no other pre-existing connection’. Besides spread through personal sight and sound, for the current MSMI outbreak, all criteria for ‘classical’ MSI are fulfilled meaning ‘a constellation of symptoms suggestive of organic illness, but without an identifiable cause, that occurs between two or more people who share beliefs related to those symptoms’.³ While our patients did not have direct personal contact with either Jan Zimmermann or among each other, they made indirect contact with Jan Zimmermann in the form of strong identification. Patients reported admiring Jan Zimmermann for his open approach to the supposed ‘Tourette syndrome’ and for being successful despite his condition, which causes strong emotions and hence further triggers contagion.¹⁴ Thus, the current outbreak of ‘Tourette-like’ symptoms can be regarded as a new variant of MSI, where social media serve as an ‘extension of our eyes and ears’¹ and replace the necessity of being in direct visual or verbal contact with others for spread. Besides general replacement of face-to-face communication by use of social media tools,¹ increased use of social media during COVID-19 related lockdown and quarantine might be a reinforcing factor.^{15,16}

We do not believe that our patients should be simply diagnosed as Tourette-like FMD instead of being affected persons of an MSMI outbreak, since the first patients presented in our clinic only 3 months after launch of the YouTube channel *Gewitter im Kopf*, and all patients confirmed having watched these videos before—or in some cases even during—manifestation of similar or identical symptoms. Furthermore, functional movements resembling tics have been described only rarely in a very limited number of case studies.^{17–22} Accordingly, functional ‘tic-like’ movements have been classified as a relatively rare type of FMD that occurs in only about 5%²³ and primarily affects adults.¹⁷ Interestingly, only recently, an increase in FMD during the COVID-19 pandemic has been reported from a US movement disorder centre with tremor being the most common presentation.⁵ Similar to our cases, however, one teenager developed functional tics after watching another teenager on TikTok apparently presenting with ‘Tourette syndrome’.

‘Tourette-like’ MSMI episode represents a ‘modern’ form of motor variant of MSI

MSI is differentiated in two variants: an ‘anxiety variant’ presenting with unspecific symptoms such as abdominal pain, headache,

dizziness, fainting, nausea and hyperventilation triggered by extreme, sudden stress within a close-knit group, and a ‘motor variant’ with hysterical dancing, convulsions, laughing and pseudoseizures.²⁴

While the ‘anxiety variant’ was believed to represent the ‘modern’ form of MSI in Western cultures that is typically triggered by environmental factors, with odour as the most common and typical predictor,¹³ the ‘motor variant’ seemed to be a more primitive form that mainly occurred in the Middle Ages.³ For example, in 1374 and again in 1518 bizarre outbreaks with exaggerated movements, known as dancing plagues, have been reported.²⁵ Interestingly, outbreaks of the ‘motor variant’ developed in relation to natural disasters and required a prolonged build-up of psychological tension associated with a mood of catastrophe and desperation in social groups united by some strong religious belief.^{25,26} Furthermore, long-term anxiety, uncertainty and long-standing stress perceived not only as threatening but also as inescapable seem to play a major role.^{3,27} In Malaysia in 1978, a motor variant MSI outbreak among college students was associated with higher education and intense competition for prestige and leadership,²⁸ while similar outbreaks in East Africa in 1962–63 were closely related to rapid socioeconomic changes.²⁹ Most of these outbreaks took weeks or months to subside.¹

Worth mentioning, in LeRoy, New York, in 2012, a ‘Tourette’s epidemic’ occurred in a high school affecting 19 adolescents with sudden-onset ‘tic-like behaviour’.^{30,31} Speculations about the cause of this ‘LeRoy outbreak’ as well as intensive media interest initially led to further increase before symptoms rapidly declined once the diagnosis of MSI was established.^{32,33} Although schools are the most frequent settings for MSI outbreaks,³ already at that time, influence by social media had been suggested¹ and the treating neurologist David Lichter commented: ‘This mimicry goes on with Facebook or YouTube exposure. This is the modern way that symptomatology could be spread’.³⁴

The 21st century motor variant of MSI is triggered by ‘eco-anxiety’ and the COVID-19 pandemic

About half of Generation Z feels stressed or anxious with climate change being the top concern.³⁵ Eco-anxiety is associated not only with fear, panic attacks, feelings of anger, guilt and helplessness, but also uncontrollability, unpredictability and uncertainty.³⁶ The COVID-19 pandemic may cause additional increase in anxiety and restrictions because of the lockdowns may result in increased stress due to home schooling, significant changes in families’ living together associated with increased rates of conflicts and domestic violence, lack of communication with friends, reduced or no contact to peer groups, and boredom.^{15,16} Thus, this current outbreak of MSMI represents not only the ‘modern’ form of MSI motor variant, but can also be viewed as the 21st century expression of a ‘culture-bound stress reaction’³⁷ of our post-modern society emphasizing the uniqueness of individuals and valuing their alleged exceptionality,³⁸ thus promoting attention-seeking behaviours,³⁹ and aggravating the permanent identity crisis of modern man.⁴⁰ It can be assumed this is triggered by eco-anxiety, the COVID-19 pandemic and further challenges in post-modern society.³⁵

Based on recent reports^{4,5} and personal communication with experts in several countries, an enormous number of young people affected with ‘Tourette-like’ MSMI can be assumed to have considerable impact on health care systems and society as a whole, since spread via social media is no longer restricted to specific locations such as local communities or school environments. Fortunately,

first international efforts are already underway to expand our knowledge of this phenomenon such as an experts' survey initiated by the European Society for the Study of Tourette Syndrome (ESSTS)⁴¹ and an informative website launched by Canadian experts at the University of Calgary.⁴² Presumably, different initiatives from different parties in different countries are needed to stop current spread of functional Tourette-like behaviours. This may include experts' interviews in different languages in the media,^{43–46} education and training of physicians, psychologists and students of clinical characteristics of tics and Tourette syndrome compared to functional movement disorders, information via Tourette syndrome advocacy groups, possibly foundation of new advocacy groups specifically for patients with functional 'Tourette-like' behaviours and, finally, clear concepts to differentiate one from the other.

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