

Editorial: Mass Psychogenic Illness

During the first weeks of my training at the Mexican Field Epidemiology Training Program, I was assigned to a team responding to an outbreak in a secondary school, in San Francisco del Oro, northern Mexico. The main economic activity of the town revolved around the local American Smelting and Refining Company (ASARCO) plant, which mined and extracted lead, silver, and gold. Some of the refining procedures at that time involved the use of hydrogen sulfide (H₂S), also known as sewer gas, for extraction of gold and silver.

The outbreak, which was reported to the Division of Epidemiology of the Ministry of Health of Mexico on September 27, 1985, had started early on the same month, and had affected 43 children. Some local members of the right-wing opposition party National Action Party had organized various town hall meetings of the parents' association. The main symptoms reported were dizziness, fainting, abdominal pain, and headaches, which lasted a few minutes and occurred during the morning rehearsals at the school yard of the traditional march scheduled for Mexico's Independence Day. The school is located 300 meters away from the ASARCO plant yards. The first time the episodes happened, according to the students, was prompted by the smell of rotten eggs from the factory. During the town hall meeting the same concern about the plant operation was voiced by the parents. The episodes recurred every morning of the week when the students gathered at the school yard until the rehearsals were interrupted due to the outbreak. The descriptive epidemiology clearly showed a 4:1 female preponderance, that few students were still sick, although some had been sent to hospitals in Mexico City, and San Antonio, Texas.

One of the local health providers shared the thought the condition could be psychogenic, and my second-year trainee colleague, Dr. Héctor Gómez-Dantés was also skeptical about the potential role of an environmental factor, which I pursued for weeks. I collected blood, urine, and household dust samples. The national laboratory found high levels of lead in students' blood but there were no

differences between those affected and those free of the condition. When back in Mexico City, our CDC advisor, Dr. James Koopman, made available to us files of reports from similar, well-documented, outbreaks in the USA and elsewhere, diagnosed as mass psychogenic illness. We prepared our report stating the outbreak was indeed an outbreak of psychogenic illness. We shared our findings with the local authorities, recommending reducing the level of excessive attention the school children were receiving. However, the latter did not happen: our story was plastered all over the media, and according to one note we were “sold out” to ASARCO. Some of the children continued to feel sick for almost a year, and there was no conclusive diagnosis from the hospitals in Mexico City or San Antonio. Years later, I was astonished to hear from an environmental activist the claim that the incident signaled “the birth of the ecologic movement in Mexico”.

Today, I return to this story from almost four decades ago, to share with the readers of the Journal, a word of caution about mass psychogenic illness (MPI) or epidemic hysteria [1, 2], an epidemic disease, which is often omitted during the introductory courses of field epidemiology.

MPI, according to Wessely has two forms: mass anxiety hysteria, and mass motor hysteria. Most of the times, but not always, they affect more females than males. The former occurs usually among teens, and consists of abdominal pain, fainting, dizziness, chest tightness, hyperventilation, nausea, palpitations, and anxiety. The episodes last only a few hours, seldom recur, spread rapidly by line-of-sight, and the initial case is not recorded. Mass motor hysteria, as the name indicates, consists of motor abnormalities such as seizures, paresis, involuntary movements similar to dancing, agitation, trances, collapse or drop attacks, lasting weeks to years. It spreads slowly and often there is an initial case on record and pre-existing conditions [1]. Video electroencephalography (VEEG) shows the absence of epileptic brain activity, and such disorders are now called psychogenic nonepileptic seizures [3]. One should caution against VEEG and other sophisticated studies, as they cause more anxiety.

In her 1997 review of the literature on the topic of epidemic hysteria, Dr. Leslie Boss showed that the number of persons affected in each outbreak of MPI has increased in more recent years, while the female preponderance has decreased. She also found that events or gatherings, and rumors accounted for the most factors triggering the epidemics [2].

In 1999 there was a large outbreak of a disease consisting of nausea, vomiting, abdominal pain, dizziness, and headache related to the consumption of Coca-Cola products in Belgium [4]. The cases started in one secondary school, and within a week spread to four other secondary schools. There was an alert and the Belgian Poisoning Call Centre recorded over 1,400 telephone calls. Coca-Cola announced that there was contamination of their products with 4-chloro-3-methylphenol, a fungicide, at a low dose, withdrew millions of cans and temporarily closed operations in Europe. Later that year, during a Scientific Meeting of the European Program of Interventional Epidemiology (EPIET), I listened to one of the first presentations on this outbreak, and I remember bringing up the epidemic of San Francisco del Oro in 1985. I think that my criticism was well taken. The authors of the published paper recognized that the excessive coverage and response to the outbreak were involved in the spread of the epidemic.

Anxiety itself is communicable and spreads through rumors and gatherings. As shown in the San Francisco del Oro outbreak, sharing the experience of a smell or gas, or just the idea of them can trigger the behavior and conversions from mind to body, resulting in a mass phenomenon. Rumors spread either by word of mouth or through the internet and have resulted in outbreaks of anxiety-related vaccine adverse events disrupting immunization efforts throughout the world [5].

Some believe that the so-called Havana syndrome might be a form of MPI [6], but the evidence against or for is still limited. An epidemic involving thousands of schoolgirls in Iran presenting “fatigue, burning throats, nausea, headaches, and numbness, sometimes experienced after smelling a variety of odours” occurred recently [7], pressing the government to blame foreign intervention. It might or not to turn out

to be MPI, and although investigations of environmental and other risk factors were underway, as Wessely wrote MPI “is not a diagnosis of exclusion” [1]. It is unlikely that an environmental factor will affect only young schoolgirls.

Decreasing the levels of anxiety is the most important strategy to deal with MPI. One needs to provide reassurance that the reported disease is real, avoid denying the importance, and at the same time report that is mostly benign and self-limited, that there will be no fatalities. One needs to avoid unnecessary testing as it only increases anxiety. The epidemiology practitioner should work with media and others feeding rumors to explain that there is no substance the rumors and to include a strategy to deal with social media [8].

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