Mass hysteria among South African primary school learners in Kwa-Dukuza, KwaZulu-Natal

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Abstract

During August 2002, at a primary school in Kwa-Dukuza, KwaZulu-Natal, 27 children who had been well when they left their homes collapsed at school, displaying tremors and shivers throughout their bodies. Many of the children also presented with abdominal cramps and nausea. Almost all the children experienced a feeling of tightness in their chests as well as hyperventilation, which was then followed by fainting. This hysteria spread by line of sight (that is, other children seeing this also collapsed). Mass hysteria had presented similarly, with only a mild variation in the hallucinations, in secondary schools in Mangaung, Bloemfontein, during 2000 and in Gauteng during 2009. Radio stations, such as Radio 702, presented these incidents for discussion and for concerned parents' questions to be answered. In all three episodes, the majority of the affected children were girls. Witchcraft, poisoning, insect bites – in the case of Mangaung – and gas leaks were proposed as causes of this strange behaviour by the previously well children. Experts who investigated these possibilities, however, excluded any identifiable cause. Nearly all the children were well again the next day. The assessment after the incidents was an outbreak of mass hysteria. The parents and the lay media, however, refused to accept this diagnosis, which added to the stress and the anxiety that the children faced when they returned to school.

Mass hysteria can be taxomised into two broad categories: the explosive type, which typically appears in small, institutionalised social networks; and the large, diffused type, during which false rumours and beliefs overwhelm a community. This discussion focuses on the second category – that which affects people in one institution.

The discussion includes the rare outbreak in Kwa-Dukuza, together with the common presentations and symptoms of mass hysteria. Also discussed are the consequences of not managing this condition well immediately on presentation. These consequences entail a perpetuation of the condition, spreading to a greater number of children, to the parents and to the teachers. This may then lead to a disruption in learning at the schools affected and, possibly, later on, to anxiety disorders.

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Introduction

Mass hysteria has been described in literature for more than 600 years in a variety of cultures and settings[1] but it is rarely taught in medical schools.[2] The common causes incorrectly ascribed to the symptoms of mass hysteria are bioterrorism, rapidly spreading infection,[3] acute toxic exposure and witchcraft.[4,5] Epidemics of mass hysteria attract media attention, which may have public-health, social and economic repercussions.[3] Media coverage therefore usually results in an escalation of such outbreaks.[6] This was seen in the cases reported from schools in Gauteng during 2009.[7]

Previous reports of mass hysteria include nuns meowing like cats, salty and polluted water suddenly tasting sweet (in India), body itching with no apparent cause among school learners (in Mangaung[8]), mediaeval-dancing mania[1] and a wave of illness after soft-drink consumption (in Belgium).[4] A rash has been described in many outbreaks of mass hysteria. In such instances, the rash may be associated with pruritis and may occur on exposed skin in a distribution that suggests scratching as a cause.[3] Many outbreaks of mass hysteria also go unreported.[6] In all these instances, there would have been a desperate search for a physical cause – with none found. Common symptoms described in published literature are presented in Table I.

During August 2002, 27 children in Kwa-Dukuza, KwaZulu-Natal, who were well when they left their homes in the morning, collapsed at school, displaying tremors and shivers throughout their bodies. The pupils were in the age group seven to fourteen and more than three-quarters of them were of Indian origin. Many presented with abdominal cramps and nausea. Almost all the children

Table I: Common symptoms of mass hysteria[4,6,11]

Symptom	Patients reporting symptom (%)
Headache	67
Dizziness or light-headedness	46
Nausea	41
Abdominal cramps or pain	39
Cough	31
Fatigue, drowsiness or weakness	31
Sore or burning throat	30
Hyperventilation or difficulty breathing	19
Watery or irritated eyes	13
Chest tightness or chest pain	12
Inability to concentrate or difficulty thinking	11
Vomiting	10
Tingling, numbness or paralysis	10
Anxiety or nervousness	8
Diarrhoea	7
Difficulty with vision	7
Rash	4
Loss of consciousness or syncope	4
Itching	3

experienced a feeling of tightness in their chests as well as hyperventilation, which was then followed by fainting.[9] The children first described a feeling of weakness and dizziness, then difficulty in breathing and palpitations, followed by abdominal cramps, hyperventilation and tremors and then pseudo-seizures, followed by fainting. Other children seeing this then also became affected and were unable to control similar symptoms. In other words, this spread by line of sight. The closed space in which the pupils found themselves resulted in a rapid spread to other pupils. Twenty-two girls and five boys were affected. The teachers and pupils not affected thought that these students were fooling around or were bewitched or that there was something poisonous in the air.

This occurrence of anxiety mass hysteria was also reported in schools in Mangaung during 2000,[8] in Mexico during 2006[10] and in Gauteng during 2009.[7] In all these instances, the majority of the affected children were girls. Nearly all the children were well again the next day. Witchcraft, poisoning and gas leaks were proposed as causes of this strange behaviour by the previously well children. Private general practitioners, clinic staff, hospital staff and specialists examined different children from the same groups but found no organic causes for their symptoms. An assessment of mass hysteria was consequently made. The parents and the lay media, however, refused to accept this diagnosis, which added to the stress and the anxiety that the children faced when they returned to school.

Radio stations, such as Radio 702, discussed this event on air and sought to answer concerned parents' questions. The author was a guest on this particular talk show. A case report of the events will be presented at the school in Kwa-Dukuza.

In this article, both the assessment and proposed management for health-care workers faced with this condition are presented. Valuable information on the prognosis of mass hysteria can then be conveyed to affected persons and other parents with children attending the schools concerned.

Case report

During August 2002, at a primary school in Kwa-Dukuza, 27 children suddenly lost consciousness. Ten of the children collapsed in the assembly area, while the others collapsed minutes later in their respective classrooms.[9] The first child who collapsed in the assembly area did so during a talk on eye care by a man who was blind in one eye. He was wearing an eye patch. He was describing his personal experience of losing vision in one eye.[9] After the index girl collapsed, nine of her fellow learners also fainted. Twenty-one girls were affected by this outbreak. The initial thoughts of the principal of the school were that the children had found the speaker frightening.[9]

The children lost consciousness for a few minutes. Seventeen of the children complained of stomach cramps. Other complaints were a tight chest (16 children), chest pain (17), difficulty in breathing (19), tremors (21), dizziness (21) and nausea (18). The teachers thought that the tremors and shivering were seizures.[9]

Paramedics, school health inspectors, general practitioners and parents went to the school immediately. Some of the children were taken to the local regional hospital, some were taken to their family practitioners and some were taken to local clinics. In none of these facilities could organic abnormalities be found during physical examination and during investigations such as chest x-rays, blood tests and ultra-sound examinations.[9]

The children were separated from one another and sent home. The next day, most of the children returned to school, with no residual effects.

There was speculation among the community that there may have been a gas leak but extensive investigations by the health and safety department found no abnormalities.[9] The school health department termed this an "idiopathic episode".[9]

Discussion

Symptoms and signs of mass hysteria

Mass hysteria, also called mass psychogenic illness, is characterised by symptoms occurring among a group

of people with shared beliefs regarding these symptoms. The symptoms suggest organic illness but display no identifiable environmental cause and almost no clinical or laboratory evidence of disease.[11] Mass hysteria typically affects adolescents or children and groups of people under stress and is more common among females.[3] It spreads rapidly by one of the senses, the sense of sight being the most common, although touch and smell have also been reported.[3] The spread of symptoms by line of sight refers to the apparent spread of symptoms among people who see others become ill.[3] Symptoms can recur in the setting of the initial outbreak.[11]

The spread of symptoms may be aggravated by a prominent emergency and/or by media response. It frequently resolves when the affected people are separated from one another and removed from the environment in which the symptoms began.[3] Doctors should consider this diagnosis when faced with a cluster of unexplained acute illness.[11,3]

People who live in closed communities, such as nunneries, boarding-houses, schools, prisons and religious groups, are most commonly affected as a group. [3,11]The groups affected often experience physical or emotional stress.[3] Person-to-person spread within minutes is seen as being pathognomonic of this illness, although this is not always present.[3] The initial signal or stimulus is usually so strong that most people recognise that it is wrong but cannot avoid experiencing a similar sensual signal or stimulus – whether of smell, of taste or of sight – as the index person. Keeping people together, such as in assembly halls, when one person is affected therefore results in a more rapid spread of the mass hysteria. The reason for this is that the signal or stimulus is so strong that anxiety builds up in unaffected people, so that visual stimulation may even not be necessary and simply thought or imagination may be enough to spread the symptoms.[3]

Symptoms vary and may include dizziness, fainting, headache, difficulty in breathing, hyperventilation, tremors, pseudo-seizures, body itching, hallucination, delusion, distorted taste sensation, abdominal pain, nausea, vomiting and weakness.[3] The more common symptoms described from 1 571 affected people are listed in Table I.[3] During the period 1973 to 1993, half the reported cases of mass hysteria occurred in schools, factories (29%), small towns and villages(10%), families and other institutions (about 9%).[2]

In the Kwa-Dukuza school, the affected children displayed typical symptoms and signs of an unusual odour, weakness, palpitations, chest and abdominal pains, hyperventilation, dizziness, tremors, pseudo-seizures and blackouts. This was in keeping with an outbreak of mass hysteria.

Management of mass hysteria

Usual management entails examining the first patients of an outbreak of mass hysteria, carrying out basic laboratory and radiological investigations to exclude a physiological cause of the symptoms. If the initial laboratory test results are normal, the patients are stable and the background of the incident suggests mass hysteria as the cause, further testing is not indicated.[3] Doctors, however, are trained to look for the organic causes of diseases, which may lead to unnecessary, obscure tests in search of an elusive diagnosis, particularly as there may be immense public and media concern around an outbreak.[3] Extensive testing by doctors can therefore perpetuate perceptions that a physiological or toxic cause of the symptoms is suspected and is then seen to be inconsistent with the message of reassurance.[3] The DSM-IV diagnostic criteria for mass hysteria are listed in Figure 1.

Figure 1: Diagnostic criteria for mass hysteria (DSM-IV)[6]

A. One or more symptoms or deficits affecting voluntary motor or sensory function are present, suggesting a neurological or general medical condition.
B. Psychological factors are judged to be associated with the symptoms or deficits because the initiation or exacerbation of the symptoms or deficits is preceded by conflicts or other reasons.
C. The symptoms or deficits are not intentionally produced or feigned (as in factitious disorder or malingering).
D. The symptoms or deficits cannot, after appropriate investigation, be fully explained by a general medical condition, by the direct effects of a substance or as culturally sanctioned behaviour or experience.
E. The symptoms or deficits cause clinically significant distress or impairment in social, occupational or other important areas of functioning or warrant medical evaluation.
F. The symptoms or deficits are not limited to pain or sexual dysfunction, do not occur exclusively during the course of somatisation disorder and are not better accounted for by another mental disorder.

Assessment and proposed management for health-care workers faced with this condition involve being aware of the possibility of the condition, providing supportive care and being authoritative and disciplined in confirming that it is a psychological, anxiety-related condition and that it has nothing to do with demonic afflictions or other organic causes.[3] Mass hysteria is limited in the number of people affected and in the length of time that people are affected through a strict, disciplined approach to those affected and separating those affected from those not affected.

In a school situation, this may involve sending home those children experiencing mass hysteria and providing information of the prognosis to all children (both affected

and not affected) and parents. If available, oxygen or paper bags can be used for patients to breathe into to alleviate hyperventilation.[3] All efforts should be made to avoid unnecessary investigation, exposure to emergency personnel, media and other potential anxiety-stimulating situations.[3]

The appropriate recognition of and response to such incidents by doctors have a substantial, positive impact on outcome. Doctors should openly communicate information on outbreaks to colleagues practising in the same area to assist in management and to prevent unnecessary investigation.[3] People affected should be reassured that other people with the same symptoms are improving, although individual patient confidentiality should always be maintained in disclosing this information.[3] Patients should also be reassured that the symptoms being experienced are real.[3] It should furthermore be explained to both the patients and their families that anxiety, fear, rumour and uncertainty all have the potential to increase the patients' symptoms.[3] Patients should be assured that long-term sequelae from mass hysteria are not expected.

The common characteristics of mass hysteria are presented in Figure 2.

Figure 2: Characteristics of mass hysteria outbreaks[4,6,11]

1. They often occur after exposure to an environmental trigger (such as an odour, an emergency response, a rumour or a reported toxin).
2. They predominately affect females.
3. They affect adolescents and children.
4. They affect patients with psychological or physical stress.
5. Symptoms spread and improve rapidly.
6. Symptoms are not in keeping with a single biological cause.
7. Hyperventilation and syncope may present as symptoms.
8. Minimal or no abnormal physical, laboratory or radiological findings.
9. Symptoms commonly spread by line of sight.
10. Symptoms may recur with a return to the environment of the initial outbreak.
11. Illness may escalate with a vigorous or prolonged emergency or media response.

In the case presented, the school authorities and the local emergency units suspected gas leaks from pipes supplying the school. Investigations into this, however, revealed that this was not the cause. Some of the teachers and religious leaders proposed evil-spirit possession and offered to cleanse the school. Since the community of Stanger comprises predominately Hindu and Muslim beliefs, this was acceptable behaviour reflecting evil possession and the need for the children and the school to undergo prayers to be cleansed of the evil spirits.

The community of Stanger has, in a way, gained valuable learning experience in managing a disaster. This had been the first coordinated response of all the emergency services of the town: the medical, police and fire services, health inspectors and volunteers. In the future, they will be better prepared to manage sudden outbreaks.

Health-care workers are often unprepared to handle the intense anxiety (from the patients, their families, the media, emergency personnel and other members of the community) associated with mass hysteria. The threat of bioterrorism adds to the frenzy associated with mass hysteria. The media should therefore receive a consistent message from a limited number of authoritative people.

Conclusion

Every family physician should be aware of the uncommon condition of mass hysteria and should be assertive in its management. Mass hysteria is now affecting more school learners, especially girls, which may be due to the increased stress and anxiety faced by learners. The principals and teachers of affected schools may seek medical advice from their local family practitioners and this advice should be aligned with the overall good prognosis of mass hysteria and with strict, authoritative control to reduce rumours and thus to reduce anxiety in parents and learners. The consequences of not managing this condition appropriately may result in a perpetuation of the condition, which may involve greater numbers of children, parents and teachers. This may lead to a disruption of learning at the schools and, later, to anxiety disorders. The goal should be to restore individuals and the community to routine function as quickly as possible. Prompt, definitive identification and labelling may help to terminate the symptoms.

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