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Mass Hysteria or Toxic Fumes? A Case Study for University Administrators

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The authors trace the historical background and describe the symptomology relating to mass hysteria and psychogenic illness. After presenting a case study of an incident of such behavior at a mid-western university, they explore the implications for staff training in student service areas.

Introduction

Psychogenic phenomena are rarely addressed in training programs for student affairs, residential life, campus police, or health center personnel. The possibility of such phenomena may thus not be recognized by first response teams or university staff when a large number of students become ill, possibly leading to an overextension of medical personnel resources, costly investigations, increased campus stress, and even litigation. The purpose of this article is to provide general information, including symptomology, relating to mass hysteria and psychogenic illness. Further, a case study of an incident that occurred in the dining facilities of a women's residential unit at a large mid-western university will be presented and implications for the training of student affairs administrators and staff derived from that incident will be discussed.

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Mass Collective Behavior and Psychogenic Illness

Kerckhoff and Back (1968) suggest that there are various collective human behaviors that produce such phenomena as crowd and mob actions, panics, movements, crazes, and fads. These phenomena often occur under stressful conditions or when the ordered sense of cultural reality characteristic of a group is disrupted (Connor, 1989). Such behaviors include mob actions, such as the lynching of a prisoner or the beating of bystanders during a riot, as well as longer-term crazes, panics, and movements such as Nazism, the hunt for "communists" during the McCarthy era (Lemkau, 1973), cyclical anti-alcohol and "clean living" movements (Engs, 1991), or the recent investigations of alleged "satanic cults" said to be practicing "ritual child abuse" (Victor, 1992); fads, including clothing styles and manifestations of youth cultures, can also be associated with these types of behavior.

Kerckhoff and Back (1968) also identify instances of "hysterical contagion," at times called "mass hysteria" or "mass psychogenic illness," where a symptom or set of symptoms for which there is no physical explanation spreads quickly among a group of people (Small & Borus, 1983). Typical cases today might include illness allegedly caused by food poisoning, insect bites, toxic fumes, or environmental pollutants where no pathogenic agent can be identified. In this type of collective behavior, the affected individuals come to view themselves as victims. Colligan and Murphy (1982) define "mass psychogenic illness" or "contagious psychogenic illness" as the collective occurrence of a set of symptoms and associated beliefs among a number of people where no pathogen can be identified.

Such mass hysteria illnesses have been identified throughout history (Colligan & Murphy, 1982; Sirois, 1982). Hippocrates, in about 400 B.C., first introduced *hysteria* as a name for an illness of unmarried women caused by a "wandering womb" whose symptoms included convulsions, twitching, muscle spasms, abdominal cramps, nausea, and headaches; in such cases, the symptoms quickly spread to other women in the vicinity of the victim (Colligan & Murphy, 1982; Sirois, 1982).

During the Middle Ages, outbreaks of mass psychogenic hysteria, called Saint Vitus' dance, were common; the twitching that accompanied this illness was attributed to a curse resulting from sinfulness. In colonial America, illnesses among young girls in Salem, Massachusetts, were attributed to witches' curses (Colligan & Murphy, 1982; Sirois, 1982). In the twentieth-century this phenomena has often occurred in factories and other workplaces, although about 60 percent of the cases reported in the English language literature in the past three decades have occurred in

schools (Small & Borus, 1983). At the current time, such outbreaks are most often attributed to toxic fumes, gases, chemicals, or environmental pollutants.

Kerkhoff and Back's (1968) *The June Bug* provides a detailed history of a case in which a garment manufacturing plant was closed by a mysterious "bug bite" that chiefly afflicted women workers; this epidemic ran its course after five days. After extensive investigation, it was concluded that the illnesses had a psychogenic origin. *Mass Psychogenic Illness*, an anthology edited by Colligan, Pennebaker, and Murphy (1982), cites many examples, particularly among female factory workers. In most of these cases the victims believed that they smelled toxic gas or fumes, but no evidence of a toxic gas was found in any case. Rockney and Lemke (1992) report a case in which 17 adolescents and four teachers became sick from "toxic fumes" in their classrooms; as in the other cases, no evidence of a toxic gas or pathogen was found. This lack of a physical pathogen is a defining characteristic of mass hysteria episodes.

Symptomology and Characteristics

A remarkable similarity exists among the instances of mass psychogenic illness, despite varying triggering causes. Some of the major characteristics common to psychogenic illness include:

1. *Sudden onset of dramatic symptoms, with both rapid spread and rapid recovery.* All studies reporting psychogenic illness discuss the rapidity of the onset of the illness and in most cases the "epidemics" have run their course in a few hours or a few days. Generally, between "8 to 10% in large groups and from 30 to 50% in small groups" are attacked by the illness (Sirois, 1982: 225; Sirois, 1974). The most effective way to curb the spread of symptoms is to separate the victim from the rest of the group.
2. *Predominately young female populations.* Historically, from 60% to 90% of the victims of psychogenic illness have been young females (Colligan & Murphy, 1982), and females who live, eat, or work together are most at risk. Even where males are present, most of the victims tend to be females (Rockney & Lemke, 1992; Small, Propper, Randolph, & Spencer, 1991).
3. *Victims often know each other or are in the same friendship circles.* The best predictor of the development of symptoms in cases of psychogenic illness is that the victim observed a friend get sick (Colligan & Murphy, 1982; Small, et al., 1991; Stahl & Lebedun, 1974).

4. *A triggering stimulant.* An auditory or visual triggering stimulus that victims interpret as a toxic gas, tainted food, bug bites, or a toxic pollutant is generally found. Upon investigation, where odors can be detected they generally are associated with cleaning solvents, paint, machinery, or repair liquids; unfamiliar fumigation or construction-related odors have sometimes acted as triggers for this type of behavior (Colligan & Murphy, 1982; Rockney & Lemke, 1992).
5. *Apparent transmission by sight, sound, or both.* Others tend to get sick after they see a previous victim collapse (Colligan & Murphy, 1982; Rockney & Lemke, 1992; Small & Borus, 1983).
6. *Laboratory or physical findings that do not confirm a specific organic cause or pathogen.* Although the illnesses are real, biological or chemical pathogens are absent. The diagnosis of pathogenic illness is generally made after all other possible causal factors have been ruled out. Victims, however, are often reluctant to accept a diagnosis of mass hysteria or mass hyperventilation and, at times, accuse an institution of being involved in a coverup. In some cases, unexpected laboratory results can cause confusion and promote controversy regarding suspected etiologies (Rockney & Lemke, 1992).
7. *Underlying psychological or physical stress.* Among the stress factors associated with incidents of psychogenic illnesses are individual stresses caused by unfamiliar environments or performance anxiety, social stresses, including war, rapid technological change, or epidemic diseases, and school and work related stresses, such as those associated with the beginning of the school year (Colligan & Murphy, 1982; Rockney & Lemke, 1992; Sirois, 1982).
8. *Boredom.* Worker boredom resulting from periods of engaging in routine tasks has been found to be associated with many incidents of psychogenic illness (Kerckhoff and Back, 1968).
9. *A perceived lack of emotional or social support.* This factor makes new members of a social group more susceptible to mass psychogenic illness.
10. *Unrelated symptoms among the individuals affected.* The most common symptoms are hyperventilation and fainting. Other symptoms described in the literature include dizziness, nausea and vomiting, headaches, chest pains, chills, eye and mouth stinging, flushing, hives, convulsions, sensations of stinging or paralysis in the extremities, swollen and bloody lips, skin disorders, asthma attacks, and disorientation in time and space.

11. *Relapse of illness.* Cases have been identified in which victims have had relapses of symptoms in the same setting as in the original attack (Colligan & Murphy, 1982).

Mass psychogenic illness has the potential for long-term effects and thus should be a source of considerable concern for those who work with students. If no physical or chemical etiology for an outbreak of illness can be identified, and if incidents reoccur, the unsolved mystery can result in anxiety, fear, the spread of rumors, and even litigation (Brodsky, 1988). Therefore, those working in a university setting should understand these phenomena and their consequences. The following presentation and discussion of a case study will allow certain implications for staff training and case management to be drawn.

Case Study

Facility and Staff Responsibilities

The incident occurred in a residence center of a large, state-supported, mid-western university. The building, which houses 880 female residents, is part of a living unit that consists of two ten-story buildings containing the student living spaces and a central building that houses two dining rooms, a snack bar, a library, a small convenience store, classrooms, meeting rooms, administrative offices, and a service desk. The building is 30 years old and has been well maintained; at the time of the incident, one of the resident dining rooms had been closed for nine months for renovations. Seventy percent of the women living in the building where the incident occurred were first-year students, 15% sophomores, and 15% juniors or seniors.

The center is administered by residence life, housing, and food service staffs. The residence life staff consists of one full-time professional, four graduate assistants, 20 resident assistants, and six diversity advocates. The housing staff has two professional employees and seven custodians. The food service staff has a manager, a production coordinator, a service coordinator, 15 full-time employees, and 12 hourly workers.

The residence life staff has primary responsibility for intervening in crisis situations. This responsibility is supported by a comprehensive training program that consists of a two-credit hour course and an intensive workshop held just prior to the beginning of the school year. Topics covered in this crisis intervention training include fire safety, tornado evacuation, psychological emergencies, work with assault victims, and intervention by the University Police Department. In all cases, the staff members are

instructed to support the students involved in the crisis, to assist them as necessary, and to seek support of supervisors as soon as possible.

Description of the Event

The incident began at around 6 p.m. during the first week of school (7)¹, a time when students are beginning to form support networks (9). The weather during the week had been extremely hot and humid, making most of this all-female (2) non-air-conditioned residence facility uncomfortable. While waiting in line in the snack bar, a student reported that she had seen some dusty substance in the air (4, 5); another student began to feel very ill and went to the food manager to report this information. Almost immediately, other students reported symptoms similar to the first student (1) and claimed that they smelled a bad odor. The reported symptoms included shortness of breath, eye and skin irritation, and a general feeling of sickness (10). Students who reported they felt sick were asked by food staff members to leave the snack bar area and the adjoining dining hall. To allow for a rapid evacuation, the students were asked to leave their belongings where they were and to return immediately to their rooms. In all, 69 students and workers, about 8% of the total population (1), reported symptoms. Of the students hospitalized, all but three were treated for hyperventilation (10); two students were kept overnight for observation. An exact cause of the ailments of the students who took ill was not determined.

Several members of the residence life staff were present and participated in the evacuation procedure, guiding students to their rooms, calming them, and giving them information. As soon as practical, they reported the incident to their supervisors. Emergency medical personnel, police, emergency repair crews, and members of the university administrative staff came on the scene.

Although the residence towers are not connected to the central dining room, a decision was made to evacuate the residence areas and a fire alarm was sounded to accomplish this; the entire building was cleared by 6:20 p.m. Students who reported themselves ill were taken by ambulance or bus to a hospital, and other students were directed to lounge areas of the two nearby residence centers. By 7:30 p.m. emergency crews had investigated all possible sources of toxic leaks and no leaks or toxic materials were found. Based on this information, and the fact that each residence had its own air circulation system, it was decided to allow students to return to their rooms. Before this was done, however, an 8:00 p.m. meeting of the residence life staff was held, at which police, university

¹ The numbers in parentheses refer to the symptoms and characteristics listed above.

administrators, hospital personnel, and emergency personnel provided current information and answered questions. The resident assistants were instructed to conduct floor meetings and assess the mood and emotions of the students. Their findings were presented at a 10:00 p.m. meeting, with the same personnel participating as at the 8:00 p.m. meeting. Again, updated information was provided and questions answered.

Post-Event Responses

The dining hall remained closed the following day, and a full and thorough investigation was conducted. The university risk management staff, which is responsible for potential liability exposures and which investigates potential claims that might be filed against the university, met with all of the students who had been hospitalized and paid their medical expenses. The investigation found no evidence of leakage of toxic substances (6), although some non-toxic construction material and cleaning solutions were found. The construction material may have been responsible for the dust in the air, and the cleaning solutions may have caused the odors (4). The smell may have also come from cooking equipment.

The incident was reported by the local newspaper the next day, and there were several other reports that mentioned that the incident was being investigated and that no evidence of toxic chemicals or other substances had been found.

Case Management

When faced with this type of illness, a calm response from the staff is necessary for the adequate monitoring of the situation. Protocols for contacting emergency personnel need to be immediately implemented and those stricken should be separated from those without symptoms as soon as possible. A precautionary evacuation of the area and a relocation of group members to comfortable areas can help avoid panic reactions. It is important that staff be available on the site where the illnesses occurred and in the relocation area so that communication can be maintained and rumors held to a minimum. As the number of those stricken increases, facilities for transporting those feeling ill may be severely stretched, and, if possible, those only moderately affected should be transported to the health care facility on buses or other quickly obtainable means of transportation. Those experiencing acute symptoms require the attention of emergency medical personnel for transport. Staff members should be assigned to the hospital or other health care facility at which students are being treated. They will be able to ensure communication with the campus, assist students with non-medical issues such as arranging transportation back to the campus, maintain contact with concerned friends, and respond to questions about when students would be allowed to return to their residence hall rooms.

University risk management personnel, or another qualified officer of the institution, should also become involved as quickly as possible. Working closely with the school's legal counsel in order to limit potential liability, a risk management plan should be implemented that includes a decision about how to handle the medical expenses of the stricken students. This plan will allow a clear and unified statement of these issues to be made to students and parents and should help alleviate some of the problems that might have occurred after the event.

As soon as the victims have been removed from the area, staff members should seal off the facility and cooperate with the initial investigation of emergency personnel concerning the cause of the illness. It is also useful to have staff available to manage the many onlookers who may gather as emergency vehicles collect around the facility. The manner in which such bystanders are dealt with can help set a tone of calm and control as well as limit the number of unsubstantiated rumors concerning the incident.

During the time when the emergency services personnel are conducting their initial assessment of the area in question, they will most probably be in control of access to the site. During this time the university staff, working as a team, should develop a plan for responding to media requests for information, for locating alternative lodging and dining facilities should they be needed, and for informing both the support staff and the students about the actual nature of the incident and the responses to it that will be taken. With regard to the media, it is important that information be channeled through a single media spokesperson who should be easily available to respond authoritatively with as much information as possible; this is especially critical in cases of psychogenic illness as there will be a tendency to mistrust statements that seem to minimize the danger in the face of the real symptoms experienced by the victims.

Once the emergency personnel have completed their assessment of the site, decisions can be made about returning students to the residence. In the case being examined, it was decided that the residence stay closed for an additional 24 hours so that a more thorough investigation could be conducted, although by that point it appeared unlikely that a physical cause would be found for the illnesses. It was thought, however, that this more extensive assessment, along with the initial precautionary evacuation, would confirm that a careful and thorough response was being made to the incident and thus would reduce the level of anxiety among the students.

As plans are made for the return of students to the facility, medical personnel, environmental hazard officers, and fire safety officers should brief the staff about the results of the investigations and about precautionary measures still in place; in addition, the staff should be assured that the facility has been found to pose no danger to those within it. Advice should be given about how to respond to questions about the stricken students and how to respond if additional students begin to experience similar symptoms upon return. The support staff should meet with students in small groups so that all questions can be answered in detail. Students should also be explicitly told whom to contact should they perceive any problems with the facility. The media will likely report on the incident, and, in the case being examined, it proved beneficial to ask students to contact their parents to provide them with accurate information.

In the days that follow the incident, questions about what caused the illnesses will continue to be raised, and there will be inquiries about safeguards that have been taken to prevent a reoccurrence and demands for assurance that the facility where the incident occurred is actually safe. Where the illnesses were psychogenic, and thus where no physical cause can be identified, it is critical to build up confidence and trust with the media, parents, and the students. The ease with which concerned parties can receive answers to their questions from an appropriate university spokesperson will have a significant impact on the level of trust. At the end of the response process, a report should be issued that acknowledges the reality of the symptoms experienced by the victims but which assures them that a professional investigation has demonstrated that these symptoms had no physical cause.

In summary, it should be emphasized that particularly in cases of mass psychogenic illness, where the potential for misunderstanding and distrust is great, a coordinated staff response is essential if disruption to the student community is to be minimized.

Implications for Staff Training

Incidents such as the one examined in this article demonstrate the importance of staff training for coping with emergency situations. Most residence life programs do provide training for fire and weather related emergencies, individual illnesses, and incidents involving emotional and psychological stress; as this case indicates, it would also be useful to train staff members to respond to cases of mass psychogenic illness, although it must be emphasized that until the lack of physical cause is confirmed all incidents where several students become ill should be treated as cases of physical illness. The staff, however, should be familiar with the phenomenon, and the characteristics of this type of event should be discussed

so that the staff can be vigilant in response to it. The training should emphasize the importance of good communication and, especially, the importance of combating rumors through the dissemination of accurate information.

It would also be useful to develop an explicit plan of action designed to guide the handling of cases of mass psychogenic illness; this will allow the better coordination of both on-campus and off-campus emergency services should an incident occur. One model of such an organized response is provided by the trauma response team concept discussed by Scott, Fukuyama, Dunkel, and Griffin (1992). Residence life staff should be involved in the evaluation of the plan to ensure that they are familiar with the response protocols.

Incidents of mass psychogenic illness are relatively rare, but they do occur. If the staff is prepared for them, however, they will be able to respond in a manner that appropriately manages the short-term problems resulting from such an incident and minimizes any long-term consequences.

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