

A study is presented of an outbreak of hysterical attacks in a school of a Louisiana town. The presentation includes a definition of the epidemiological, psychological, and psychiatric characteristics of the affected students and of those in a control group. Precipitating factors are identified and other significant factors studied.

EPIDEMIC HYSTERIA: A FIELD STUDY

James A. Knight, M.D., M.P.H.; Theodore I. Friedman, M.A.; and Julie Sulianti, M.D., M.P.H.

THIS study deals with an unusual "illness" which took place in a school setting. It is an excellent field example of the phenomenon of behavioral contagion, originally formulated by Fritz Redl⁴ and later verified in laboratory studies by other investigators.¹

From approximately February 14th through early August, 1962, 22 subjects, all females except one, experienced hysterical episodes, or what they called "blackout spells." This outbreak took place in the Negro school of a south-western Louisiana town of about 3,300 population.

All of the spells were not alike. Some were suggestive of the hyperventilation syndrome. In these the student appeared anxious, began to breathe deeply, experienced fluttering of the eyelids, tingling in the fingers, dryness of the mouth, then became dizzy and passed out. Most of the students described some kind of modified aura prior to passing out, such as headache or dizziness. Some kept the deep, rapid breathing even after they had passed out. Several of the attacks resembled epileptic-type seizures—especially petit mal. Some students showed catatonic posturing. Others manifested a very gross type of tremor throughout the attack. Period of unconsciousness

generally lasted only a few minutes but occasionally a student would not recover for over an hour. Most of them manifested drowsiness and dizziness after a so-called "blackout spell."

Almost all of the students were taken to the physician who initially diagnosed the disorder. In each case he examined the student, gave an injection of sedative or a tranquilizer, and prescribed a mild tranquilizer or sedative. At first there was confusion as to the nature of the illness, and some of the students were subjected to a thorough medical examination, including a lumbar puncture.

The tranquilizers and sedatives used did not prevent the further occurrence of the attacks in most of the cases. Many of the students continued to have attacks in spite of taking the prescribed medication on a regular basis.

Two years before the outbreak described in the present study, one of the girls in this school became pregnant. She and a fellow-student (the admitted father of her child) were sent to the State Correctional School. Prior to the onset of the present outbreak in the school, a rumor circulated that one or two of the girls were pregnant, and that these girls would be sent to the

Correctional School. There had been considerable sexual promiscuity among the students. Some of this, for example, took place at school during lunch time in the photography darkroom. A 14-year-old crippled girl with a very low mental age had had intercourse with more than 30 boys. Another girl, age 15, was found to be pregnant and was requested to leave school. The word circulated that all the girls would be given pregnancy tests, and anxiety swept through the school. The attacks began shortly thereafter.

During the course of the outbreak, the parish probation department investigated the promiscuity in the school. Several students suspected of promiscuity were asked to appear with their parents for a Juvenile Court hearing. Five were placed on probation, and four were sent to the State Correctional School for undetermined periods of time. Only one of the girls in the group of those having hysterical attacks was found to be delinquent because of sexual misbehavior. This 15-year-old girl was offered probation provided she would adhere to certain rules of conduct. Because of her refusal, she was sent to the Correctional School. Following the sentencing she had a hysterical attack which lasted for hours.

As far as we were able to determine, the first attack took place in the Methodist Church on the night of February 14, 1962, following a choir concert. A 13-year-old girl became dizzy, passed out, and was taken home in an unconscious condition. Her family reported that she was difficult to arouse for several hours. This student said that prior to her passing out, she felt her breath "coming short" and then became dizzy.

The following day at school, a close friend (age 13) who had witnessed the attack in church had a "blackout spell." She continued to have attacks and was kept home from school for a month be-

cause of the daily nature of the attacks. On March 6, another girl had an attack at school, and two days later a different girl had an attack. By the 22nd of March eight girls were having the "blackout spells" and by April 3 over 20 girls and one boy were affected. The weekly distribution of attacks for the major period of this study is shown in Figure 1.

All of the investigators in this project observed some of the attacks. On a few occasions there were as many as seven students having attacks simultaneously while the investigators were present.

Twenty-two students who suffered attacks were included in the study. Additional cases were reported but were excluded when they personally denied having attacks.

By the end of May the outbreak had subsided, except for an occasional attack during the summer months plus several during the latter part of July and early August when the EEG studies were done.

The school has acquired a new principal who assumed his duties at the beginning of the 1962-1963 session. He reports that an occasional member of the patient group has had an attack, though often mild in character. The principal seems to be able to maintain order and discipline in the school while remaining supportive and understanding in the over-all management of the students' problems.

Method of Study

After seeing a few of the students and studying the progression of attacks from one student to another, the local physician was certain he was dealing with hysteria. Since many people in the community, however, kept emphasizing etiological factors, such as "dope," toxic substances, and infectious agents, he notified the State Board of Health. The staff of the State Board of Health

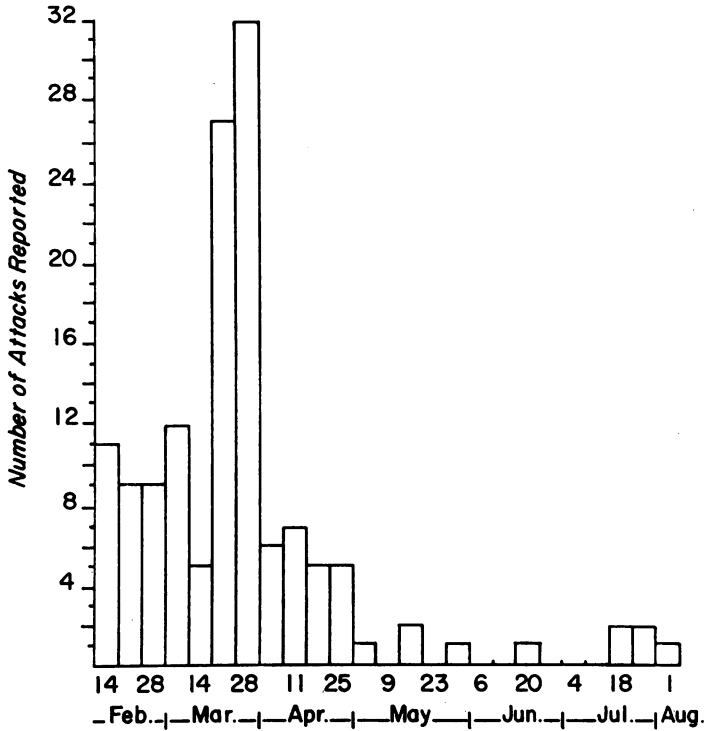


Figure 1—Weekly Number of Reported Hysterical Attacks

studied the situation and confirmed the local physician's impression of an outbreak of hysteria.

At this point the present team of investigators, upon invitation of the Louisiana State Board of Health, initiated a thorough study of the outbreak, which included a definition of the epidemiological, psychological, and psychiatric characteristics of the affected students when compared with a control group. A battery of psychological tests and a clinical psychiatric evaluation were used in the study. Also electroencephalograms were run on both groups.

The Community

The community where the outbreak took place is principally rural. The par-

ish has 21.2 per cent Negroes, whereas the average for the state of Louisiana is 32 per cent.

The Negro school for this community is modern and well-equipped. The all-Negro teaching staff is relatively young and inexperienced in handling the problems associated with public school teaching. The school has an enrollment of about 400, with an average of 33 students in each class.

The Negro community is a typical subcommunity for southern Louisiana. The socioeconomic status is predominantly lower class, with a few families in the lower middle class. The homes are simple, but generally neat and clean. Most of the men work in service jobs or on the farm. The women work in white homes as domestic servants.

The four Negro churches in the community are two Baptist, one Methodist, and one Catholic. The majority of the Negroes are affiliated with the Baptist churches.

There is little social mobility among the Negroes in this community. Those born there seldom leave the parish. Many have not travelled more than 50 miles from their homes.

The whites of this community had varying attitudes toward the outbreak. Some were concerned about a possible "disease." Most of the whites, after a few weeks had passed, felt the Negroes were "acting foolish," "showing childishness," or possibly evidencing the effects of something "bad," such as taking narcotics. After a short period of time the whites lost interest in following the progress of the attacks.

The newspapers in the neighboring cities published stories of the outbreak. A front page story in one newspaper was entitled, "Mysterious Ailment Strikes Negro Students." The story went on to say how an unidentified malady which renders its victims unconscious had struck at the Negro school. The names of several students were given with a description of their attacks. Other newspaper accounts later reported the progress of the outbreak or the fact that the outbreak was subsiding.

Rumors Regarding Outbreak

Many of the parents and teachers thought at first that the attacks were caused by some infectious process, but this view was abandoned after medical studies were done. The most persistent belief held by students, teachers, and parents was that some kind of "dope" was used. Shortly before the outbreak, an adolescent boy from the high school of a city 30 miles away was transferred into the school. He was considered by many as a "bad" boy who might be

bringing in "dope." The chewing gum in a neighboring store was suspected of containing "dope." Possibly the boy and the store were involved in some way. The Laboratory Division of the State Board of Health tested the chewing gum and other similar items. However, the negative report did not stop the rumor. Even the principal of the school continued to relate the attacks to narcotics or a toxic substance after studies had been done to disprove such rumors.

Several of the parents related the attacks to some kind of black magic. Most of the students rejected this view and attributed such thinking to that of the "older generation." In this community, there is a comfortable blending of scientific and folk medicine.

The students discovered early in the outbreak that those students who were especially influenced and likely to have attacks were those who touched, supported, or carried to the lounge some girl who had had a "blackout spell." Thus, they concluded that having an attack was a highly individual thing and would involve only certain ones. On some level they recognized the sexual implications. This became clear when the one male student had a "blackout spell," and the comment swept through the school, "Will he have a boy or girl?"

Definition of Cases

The students included in the patient group were those who definitely had attacks with the symptom complex described in the opening part of this paper. The cases were ascertained from reports of teachers, students, and the local physician. A case was defined as a student who had one or more attacks and who had lost consciousness or undergone an altered state of awareness during the attack.

Each control was matched for grade, sex, and age to a particular member of

Table 1—Distribution of Affected and Normal Girls by Grade and Age (Normals in Brackets)

Age	Grade						Total	Per cent Affected
	6	7	8	9	10	11		
10	1 (3)						1 (3)	4.6
11	2 (6)						2 (6)	9.1
12		1 (13)					1 (13)	4.6
13		1 (3)	2 (6)				3 (9)	13.6
14			3 (2)	2 (8)			5 (10)	22.7
15				1 (8)	3 (9)		4 (17)	18.2
16					2 (2)	1 (4)	3 (6)	13.6
17					1 (2)	2*(4)	3 (6)	13.6
Total	3 (9)	2 (16)	5 (8)	3 (16)	6 (13)	3 (8)	22 (70)	
Per cent Affected	13.6	9.1	22.7	13.6	27.4	13.6		

* Includes the one male case.

the patient group and selected in a random manner. The controls came from the same school as the affected group. Thus, the control group was similar in all relevant respects to the patient group.

Findings

Epidemiological—A comparison of general information collected from the affected and control groups revealed very few important differences. In the hysteric group there was a slightly higher proportion of families with some irregularity such as divorce, father dead or in jail, or parents on relief. Socio-economic factors, religious affiliation, and rural-urban distribution showed little difference in the two groups and reflected the distribution of such factors in this Negro community. Onset of menstrual period was not markedly different in the two groups.

The ages of the students affected ranged from 10 through 17, with a mode of 14. Half of them came from the 8th and 10th grades, the remainder coming from the 6th, 7th, 9th, and 11th grades (Table 1).

Highest incidence of attacks was on the days when there were visitors in the school making inquiries regarding the hysteria outbreak. Some of the students also had attacks at home, in church, and in the movie theater.

The number of incidents per day reached a peak during the 14-day period: March 21 through April 3. The number of attacks subsequently decreased except for several incidents during May, late July, and early August when the investigation team returned to the school to continue the study. The presence of outsiders appeared to be related to the occurrence of hysterical attacks.

The attacks occurred most often in the afternoon at school. There seemed to be no relation between attacks and any one teacher or subject taught in the school.

Psychological—The psychological tests administered to both the affected and control groups were: Full Range Picture Vocabulary Test, Bender-Gestalt, Minnesota Multiphasic Personality Inventory (MMPI), and Rorschach.

The mean I.Q. for the hysteric group

was 72.4, with a range of 55-92. The control group had a mean I.Q. of 73.4 and a range of 40-105.

The MMPI results revealed that the hysteric group scored higher on items related to conversion of psychic to body complaints, unrealistic ideational trends, and excessive productivity of actions and/or ideas.

The meager results of the Rorschach in both groups suggested a poor type of ideational productivity, lowered emotional maturity, and a reduced level of internal affective control.

The MMPI and Rorschach studies pointed to some minor differences between the control and hysteric groups. The controls seemed somewhat more normal and less prone to emotional instability.

Electroencephalographic* — The machine employed in this study was the Model III-D Grass 8 channel EEG. The technic used included both monopolar and bipolar recordings. Waking, sleep, and hyperventilation recordings were obtained.

The per cent of abnormal EEG records was extremely high in both groups — 53 per cent for the patient group and 57 per cent for the controls.

The most striking feature of the records was the similarity throughout both the control and patient groups. The records could be divided for both groups fairly equally into bioccipital slow abnormalities, a paroxysmal generalized type, and paroxysmal activity which tended to localize to the temporal, occipital, and bifrontal areas.

These records indicate that a brain dysrhythmia did not play a definite role in determining whether or not the student developed hysterical symptoms. The EEG studies suggest the presence of a

* We are indebted to Arthur W. Epstein, M.D., and Charles Fontana, EEG Technologist, Department of Psychiatry and Neurology, Tulane University School of Medicine, for major assistance with the EEG part of this study.

large reservoir of children in this community with cerebral dysrhythmia. Many of the records have some characteristics similar to those encountered in convulsive states. The type of abnormality evidenced in these EEG tracings would tend to be more strongly associated with a convulsive state than with "brain damage" alone.

Psychiatric—The psychiatrist interviewed individually each student who was having "blackout spells" as well as each member of the control group. The clinical differences between the two groups were as follows:

The controls were far less interested in sexual matters, talked less about sex, and were much less seductive than the affected students.

The controls seemed much less involved in the total situation and at times showed some hostility. The affected students seemed more appreciative of the concern and attention given them. They enjoyed talking about their attacks, whereas the controls were not interested in speaking even about their health in general.

There was greater poverty of imagination in the control group than the affected group. The affected group had more exciting plans for the future and a richer fantasy life.

More of the so-called classical hysterical features were seen in the affected students. They were more dramatic, expressive, and related more easily. However, there were three students in the control group who surpassed most of the members of the affected group with their dramatic self-presentations.

The psychiatrist found rapport more easily established with the affected group.

The members of the affected group seemed to have little fear of what had befallen them. They showed to an astonishing degree the much-quoted "la belle indifférence." The controls did not want to be implicated in any way with the

affected group. Each was afraid of catching the disorder and took measures to prevent having an attack.

The control and affected groups were observed on many occasions as they mingled with the other students in the school. They did not appear obviously different from their peers.

Discussion

The outbreak began when some sexual promiscuity was discovered in the school by the authorities and the rumor spread that all the girls would be given pregnancy tests and those found to be pregnant would be sent to the State Correctional School. Possibly this punitive reaction of the adult authorities to the students' promiscuous behavior caused the students to fragment and develop an illness as a way of handling their conflict between authority and their impulses.

Although the precipitating factors associated with the onset of the outbreak may explain part of the picture, other significant factors should be mentioned. The hysterical symptoms were communicated by seeing or touching victims in attacks or hearing about the attacks. The lowered intellectual controls, a disorganized school setting, tendencies toward superstitious beliefs, unstable home environments, and the attainment of secondary gain also seemed important, though no cause and effect relationship is claimed.

This outbreak seems to be an excellent field example of a phenomenon originally formulated by Fritz Redl as "contagion and shock effect" which he observed in groups of disturbed children in summer camps.⁴ Grosser, Polansky, and Lippitt¹ later verified Redl's findings^{3,4} in a series of laboratory studies on the problem of behavioral contagion in group situations.

The atmosphere in the school we studied was punitive and made so by

the school authorities and the probation officers in an effort to control the promiscuity in the school. The threat of being sent to the State Correctional School for sexual misbehavior was always present.

The fact that these "sexed-up" girls were the ones who passed out *rather than* acted out is a good example of "shock-effect," which in turn becomes a "contaged" solution.

There have been only a few papers in the literature in recent years related to mass hysteria. Many reports appeared in the 19th and the early part of the 20th century, but these were mostly observations with little examination of the patients themselves.

Schuler and Parenton⁵ reported an interesting mental epidemic which took place in the spring of 1939 in an academically superior white high school in southern Louisiana. It involved a group of girls, ages 16 through 18. The symptoms consisted primarily of spasmodic involuntary movements of the extremities. This paper contains also an excellent review of the literature on outbreaks of hysteria.

Johnson² studied in 1944 an outbreak in Mattoon, Ill., in which the rumor of a "madman" who gassed his victims with some kind of paralyzing agent sent many individuals, mostly women, into states of panic.

Other studies are available, but these are most often concerned with less well documented situations than those investigated by Schuler and Parenton and by Johnson.

Causal relationships have been emphasized in the literature as related to: (a) communication of symptoms via viewing; (b) predisposition to hysteria; (c) circumstances stimulating stress, fear, or guilt; (d) the high suggestibility of the victims; and (e) a convergence of all or most of the factors given above. In most of the studies females have usually been the victims.

Summary

From approximately February 14 through early August, 1962, 22 subjects, all females except one, experienced hysterical attacks, or what the victims described as "blackout spells." The outbreak took place in a Negro school of a southwestern Louisiana town.

The study includes a definition of the epidemiological, psychological, and psychiatric characteristics of the affected students when compared with a control group.

There were some differences between the patient and control groups, but these were not significant in many respects. The mean I.Q. for each group was in the Borderline Defective Range, though the control group showed more persons with average intelligence than the affected group. The social factors related to the outbreak were not especially suggestive except that the hysteria group showed a slight tendency to have more broken homes.

The EEG studies were not remarkable as to differences between affected and control groups but indicated a very high degree of abnormality in both groups—53 per cent in the hysteria group and 57 per cent in the control group.

The precipitating factors associated with the onset of the outbreak were identified and other important factors studied.

The study of the affected subjects, their attacks and the progression of the illness from one student to another, suggests a true outbreak of hysteria of epidemic proportions.

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Dr. Knight is assistant dean and professor of psychiatry and Dr. Sulianti is research fellow, Department of Epidemiology, Tulane University School of Medicine, New Orleans, La. Mr. Friedman is qualified psychological examiner and coordinator of special services, East Main Schools, Niles, Ill.

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