

# EPIDEMIC HYSTERIA AMONG SOME FACTORY WORKERS IN SINGAPORE

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## SYNOPSIS

**This paper reports on the first outbreak of hysteria in a large television assembling factory. A total of 90 spells in 84 subjects was recorded over a period of 8 days. It occurred almost exclusively among the young Malay female workers in a multi-racial factory population. Control measures dealing with individual cases and the non-affected factory population are described. Discussions on the industrial, cultural and management aspects are made.**

## INTRODUCTION

During the month of January 1973, there was reported an outbreak of epidemic hysteria among some female workers in a large television assembly factory and a few cases in two neighbouring factories situated in the Kallang Basin Industrial Estate in Singapore. This spate of cases was unusual because it disrupted the smooth flow of production. "Epidemic hysteria" has been defined by Friedman (1967)<sup>2</sup> as "a conversion reaction involving two or more persons in social contiguity. The conversion may be diffuse (decreased state of awareness or pronounced general anxiety), or specific (affected limbs, organs, or sensory pathways), or both diffuse and specific".

In Singapore, previous outbreaks of epidemic hysteria have been reported in the lay press among school children but not among factory workers. E. S. Tan (1963)<sup>5</sup> described a hysterical outbreak in an Arabic religious school in Johore Bahru, Malaysia, affecting only female pupils although the school was co-educational. Gwee *et al* (1963)<sup>4</sup> described the Koro "epidemic" among Chinese males in Singapore. In other countries Knight *et al* (1965)<sup>3</sup> described an outbreak in a Negro girls' school in Louisiana, USA and Ebrahim (1968)<sup>1</sup> described 3 major outbreaks in several schools in Tanzania (1962) and in Uganda (1963).

This episode may be considered as the first description of occurrence among factory workers.

## Definitions

Following Friedman's definition of the conversion reaction that is either diffuse or specific, we have found that the cases observed may be broadly

divided into "frightened" corresponding to "diffuse" and "seizures" corresponding to "specific" categories.

*Seizure cases* were those who went into a violent struggle, swinging the upper limbs and kicking about. They would scream and cry, sweat a lot and breathe heavily. Their eyes were either opened and staring or closed. A rapid pulse of 100 per minute was common. A few went into a trance state. Each seizure may last from half an hour to more than two hours.

*Frightened cases* were those who did not scream, struggle or become violent. They only complained of dizziness, numbness and faintness. They were in a state of heightened anxiety.

A worker may have more than one spell or "attack". The figures given really refer to spells. This episode had a total of 39 spells involving 34 workers. 1 worker had 3 spells, 3 workers had 2 spells and the rest had 1 spell each. 51 other workers were "frightened".

## Description of Outbreak

This outbreak largely involved one big television assembly factory with a few cases occurring in two neighbouring factories at about the same time. From 13 January to about 27 January 1973, 84 subjects, all females except one, experienced hysterical spells.

This television assembly factory occupied the second, third and fifth floors in a modern block of flatted factories. The factory at that time employed 802 female factory workers, 97 male workers, 12 supervisors and 67 administrative personnel. There were two shifts from 7 a.m. to 3 p.m. and from 3 p.m. to 11 p.m. Their work consisted of monotonous repetition of simple manual operations in the assembly of components of television sets.

The outbreak started on Saturday, 13 January at about 7 p.m. when one of the female workers at the "U-board" section on the second floor, suddenly started to scream. She then fainted. When the supervisor and some of the workers carried her to the clinic on the third floor, she started screaming again

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and struggled with them. She was brought to the clinic and calmed down after about half-an-hour when one of the supervisors sent her home.

At about 8 p.m. another girl who was also working in the U-board section also started screaming and struggled with the other workers who tried to calm her down. When she fainted, she was carried to the clinic.

At 8.15 p.m. a female worker said she felt frightened. A little later she fainted. She was taken to the clinic and later sent home. At about 8.30 p.m. another female worker felt giddy and fainted. Another female worker also fainted a little later. These 3 workers were not violent nor did they scream.

At 9.45 p.m. a female worker at the monochrome yokes section, which was adjacent to the U-board section on the second floor, went into a trance during which she said she was the "jin" (spirit) and told the supervisor that the line must be stopped. She then became violent and started screaming. She was also taken to the clinic and later sent home.

Due to these incidents, the factory closed earlier that night instead of at the usual time of 11 p.m. The next day was Sunday, a holiday, and so was the following day which was a public holiday, Hari Raya Haji—a Malay festival. On that Sunday, the personnel manager called in a "bomoh" (a traditional Malay medicine-man) because these happenings had been attributed to a ghost or spirit. The bomoh prayed and indicated there was a "spirit" on the second floor living near the female toilet.

The factory opened as usual on the morning of Tuesday, 16 January. At about 2.30 p.m. the first case of hysteria occurred that day, when a female worker started screaming and behaving violently and had to be restrained. She was taken up to the clinic where she was calmed down. That day, there were a total of 8 female workers who became hysterical, screaming and struggling violently. The Company doctor was called in and he gave them injections of chlorpromazine to calm them down. Of the 8 workers affected, 3 had previous "attacks".

On 17 January, there were 6 cases, the first one starting at about 8.20 a.m. There was also one woman worker who felt frightened. Another "bomoh" was called in.

The next day, 18 January, 13 female workers were affected by hysteria of whom one had a previous attack. There were 18 who were "frightened" of whom one had a similar experience before. On the 19 January, 8 female workers were hysterical and 29 complained of feeling frightened. On 20 January, there was one case of hysteria who had had such an "attack" previously.

In all cases of hysteria after the first day, injections of chlorpromazine (25 mg.) or Valium (10 mg.) were given and the girls were sent home after they calmed down.

## Trance Cases

Of the 34 female workers who had the hysterical attacks, 4 of them also went into a "trance" state.

The first trance case was reported at about 9.45 p.m. on the first day of the outbreak (13.1.73). She told the Personnel Officer that she was the "jin" (spirit) and work at her particular assembly line must be stopped. She scolded, slapped people and even threw glasses at them.

The second case was reported on the morning of 16 January. She was violent, spitting, kicking and slapping people. She screamed that someone was "coming for her". In between screams, she laughed. She was brought to the Managing Director's room. There she laughed and said, "Do you know who I am? I am the "jin"." She then picked up an ash tray and threatened to smash it.

At about 6.30 p.m. again on 16 January, the third trance case was reported. This girl was brought to the Personnel Department and during the whole episode she fell into a trance 3 times. At the first trance, she kept pointing with her index finger and would not reply to questions. After a while, she said that the place was dirty. When asked to specify which place, she said that the bath rooms of the second and third floors were affected. She later changed her view and said that all the bathrooms on every floor were dirty. She advised that these places must be cleaned but not with water. When called by her first name, she replied that she was not that person but the "house spirit". She fainted and on recovery a few minutes later she repeated almost the same things she had said the first time. After another fainting, she declared that if the place was not cleaned by 1 a.m. she would strangle the girls one by one. She attempted to rush out of the rooms several times. At about 9 p.m., she came out of her trance. She had a peculiar look on her face during the "trance" state.

The fourth case was reported around 9 p.m. again on 16 January. This girl was brought in screaming to the Personnel Officer's room. She asked the men who were holding her down: "Why are you doing this? I am not mad! It is so embarrassing!" Later, she calmed down and was sent home in a taxi. The next day, 17th January at about 1.30 p.m., she dressed herself in yellow clothes with a yellow veil and went into the Personnel Office. She sat in front of the Personnel Officer swaying a little and said she wanted to cleanse the workplace because she had been instructed by a "god" in a dream that the place was dirty. She cried a lot and said that the Personnel Officer's room was haunted by a three-headed ghost. She then took out various articles in her bag—including a plastic container, some rice and flowers. Later she fainted and when she came round, she started to pray saying "Why don't you (meaning her 'god') help us—we are only humble servants!" Permission was given to her to walk around to scatter the rice and flowers she had brought. She fainted a second time and was brought

to the clinic. At about 9.30 p.m. she calmed down and came out of her trance. She was then sent home.

It was observed that in 3 of these 4 cases, they spoke as though they were someone else whilst in the "trance" state. Two of them claimed to be a "jin".

### Other Factories

On Wednesday, 17 January, the hysteria outbreak spread to a nearby factory manufacturing electrolytic capacitors, and occupying the ground floor of an adjacent block of flatted factories. This factory also employed a predominantly female labour force doing simple repetitive work of assembling capacitors. There were 2 female workers affected on 17 January, 4 each on 18 January and 19 January and another 6 on 27 January of which 4 had previous "attacks". All these cases were females and they all presented with screaming, shouting, struggling, sweating and rapid pulse. Their eyes were opened and staring, but at times would close. Some were abusive when questioned whilst others just ignored questions and attempts to calm them down. Some also screamed that a black man was coming to strangle them. A third factory reported only one hysteria case. A summary of cases is given in Table I.

TABLE I  
SUMMARY OF CASES IN OUTBREAK

Factory	No. of Spells			No. of Subjects
	Hysteria	Frightened	Total	
1 A	39	51	90	84
2 B	16	0	16	12
3 C	1	0	0	1
Total	56	51	106	97

Gradually by the end of January, no more cases were reported and production returned to normal.

### Analysis of Cases

The following data give an analysis of the cases in the main factory (Factory A, Table I) where the outbreak occurred during the whole period of the episode. Figures for the two small neighbouring factories (Factories B and C, Table I) were not included in the analysis.

The majority of cases occurred on 18 and 19 January (20 hysteria and 46 frightened cases). It would appear that the height of the epidemic occurred after a gradual build-up (probably) of rumours and then rapidly died down, perhaps after confidence had been restored. (See Table II)

It will be observed that the majority of the hysteria cases (27) occurred in the early (7 to 11 a.m.) and late (7 to 11 p.m.) periods. Very few cases occurred

TABLE II  
DISTRIBUTION BY DATE OF OCCURRENCE

Date No. of Cases	January 1973								Total
	13	14	15	16	17	18	19	20	
Hysteria	3	0	0	5 (3R)	6	12 (1R)	8	1R	34
Frightened	3	0	0	0	1	17 (1R)	29	0	50
Total	6	0	0	5 (3R)	7	29 (2R)	37	1R	84

R = repeat cases.

TABLE III  
DISTRIBUTION BY TIME OF OCCURRENCE

Time of Day	7—11 am	11—3 pm	3—7 pm	7—11 pm	Total
Hysteria	15	4	3	12	34
Frightened	32	4	0	14	50
Total	47	8	3	26	84

TABLE IV  
DISTRIBUTION BY ETHNIC GROUP

Ethnic Group	Hysteria Cases	Frightened Cases	Total
1 Malay	34	49	83
2 Chinese	0	0	0
3 Indian	0	1	1
4 Others	0	0	0
Total	34	50	84

TABLE V  
DISTRIBUTION BY SEX

Sex	Hysteria Cases	Frightened Cases	Total
Female	34	49	83
Male	0	1	1
Total	34	50	84

in the mid day and afternoon periods. The reasons for this are uncertain. (See Table III)

It can be readily observed that all except one case occurred among the Malays. There was one girl who was an Indian Muslim and she was only frightened but did not get the hysterical attack. No cases occurred among the Chinese girls. The factory at that time employed about 802 female factory workers and of these about 65% were Malays, 25% were Chinese and about 9% were Indians. It was significant that only the Malay girls were affected and none of the

Chinese girls were affected. This may be due to the fact that such attacks could be culturally-related. (See Table IV)

Only one frightened case occurred in a Malay male. The rest were all in females. At that time, the company employed 97 male workers compared to 802 female workers. It is a common observation that this type of hysteria usually occurs among the females and not the males. (See Table V)

TABLE VI  
DISTRIBUTION BY AGE

Age in Years	15—19	20—24	25—29	30—34	35—39	Over 40	Total
Hysteria	20	8	2	3	1	0	34
Frightened	30	14	5	0	0	1	50
Total	50	22	7	3	1	1	84

The majority of cases were in the younger age groups from 15-19 years (50 cases) and 20-24 years (22 cases). This conformed to the general age distribution pattern of the female working population in the factory. (See Table VI)

**Control Measures**

This outbreak of hysteria in the factory was treated like an epidemic of infectious disease. The principles for the control of epidemic disease were applied in this episode. Broadly, the measures were directed towards:

- (a) dealing with individual cases;
- (b) dealing with the non-affected factory population; and
- (c) dealing with the public.

**(a) Dealing with Individual Cases**

When faced with an epidemic of this type which was rapidly transmitting, the most pressing problem was what to do with the individual cases at the time of occurrence. With the factory population of over 1,000 people, the violent and dramatic nature of the cases immediately generated fear and apprehension among the working population who happened to witness such an occurrence. Each case because of its struggling and screaming components often required 2 or 3 people to subdue and restrain the subject. It also happened that when there was one case, there followed a rapid succession of a few cases. This would then tie up a lot of personnel to restrain the subjects. The atmosphere of the factory was like a pandemonium with administrative personnel rather agitated in face of an emergency and not knowing what to do.

From the experience gathered after a few days, the following steps were developed as a routine. This

was found to be fairly useful in dealing with the cases as they occurred:

1. Several rooms in the administrative area were requisitioned to serve as a reception area for the cases. This area should be cut off from view and outside the hearing distance of the factory shop floor.
2. When a case occurred in the shop floor, the one or two people designated to deal with them would first throw cold water on to the subjects' faces. The rationale was to give them a cold stimulus in order to wake them up. At the same time, it was unpleasant to get wet. This was purposely done in the full view of the other shop floor employees so that they would know that it would be unpleasant to get hysteria and so discouraged them from trying to pretend to be one.
3. After this, the case was then brought to the reception area and would be given injection of tranquillizer (chlorpromazine) 25 mg. or 50 mg.
4. The subject was allowed to calm down. Sometimes they continued to struggle and had to be physically restrained. As most of these girls believed that the Malay medicine man, bomoh, would help, they were allowed his services. Some sort of ritual would be undertaken and this could go on between 15 minutes to 2 hours during which time incense was burned, incantations made and charms given.
5. After a period of time the patient would calm down and be sent home on a week's leave.

It was found that this sort of routine did give something for the management and workers to do. This made them feel that some measures were being taken to control the situation.

**(b) Dealing with Non-Affected Factory Population**

A general atmosphere of fear was present among the non-affected population through either seeing the cases occurring with their own eyes or hearing the screams and struggles that had been going on. Others knew about this through rumours and gossips. Sometimes there was a distortion of facts and fear was considerably multiplied. To combat this, the fundamental principle was to instil and restore confidence after dispelling the fear. To achieve this objective, piped music was introduced through a public address system and this in some ways helped to create a calmer atmosphere. Key factory supervisors or section leaders were also given talks on some basic facts about the occurrence of hysteria so that they were not so frightened and also taught how to deal with the cases as they occurred.

Because of certain traditional beliefs among the different ethnic groups, recourse to their traditional ways of dealing with such a situation was also done.

As it was a common belief among the Malays that such episodes were due to spirits, the bomoh was called in to assist in exorcising the evil spirit. A series of rituals were performed and after some time this seemed to have the effect of calming the workers down.

Regular factory tours by Government medical personnel done publicly also helped to allay and dispel apprehension and fear. Counselling and talking to workers who were vulnerable to such attacks was also useful.

### (c) *Dealing with the Public*

The outbreak was taken up by the press and considerably publicised. Often, the reporters got news that had not been verified. Their reports therefore consisted of a sprinkling of facts with hear-say and distortion. This created unnecessary public apprehension. Some drastic action had to be done to curb the cases. It was therefore necessary that at the appropriate time, a public statement based on accurate facts was issued, giving the exact number of cases that had occurred and also publicising the fact that such hysteria cases were not harmful but short-lived and the patients recovered without any residual deleterious effects.

It was found that after such a public statement had been made by the Government department, there was an immediate and dramatic diffusing of the apprehensive situation. Gradually, after this psychological initiative was taken, confidence was restored. As can be seen from the distribution table according to the date of occurrence in Table I, there was a dramatic drop of cases after a press statement was made on 18th January, 1973.

## DISCUSSION

Some of the epidemiologic features of this outbreak were as follows:

1. It occurred in an industrial population;
2. It affected only the Malay female workers but not the other cultural groups; and
3. It usually affected the girls in groups and very seldom singly.

### **Industrial Setting**

Many of the reported outbreaks of hysteria have largely occurred in a school setting. From an economic viewpoint, the occurrence of mass hysteria in a factory poses more serious implications than one occurring in a school. Production was considerably reduced as the affected girls were sent home for a week for fear of repeated spells. The general fear and anxiety in the factory atmosphere reduced the productivity of the non-affected girls.

In an industrial setting, one of the first things to do was to exclude the possibility of toxic chemicals handled by the workers and giving rise to such neuro-muscular manifestations. In this outbreak no

such chemicals were found. The question of deliberate drug taking was also excluded after an investigation.

Managements with a western scientific background were at a loss as to how to deal with an epidemic situation of this type with dubious and unknown origins. They were baffled that in the modern world there were people who still believed in "ghosts" and were "attacked" by them. As a result, disruption on the production line occurred. Whether strained industrial relations had a part in such an outbreak was not immediately evident.

### **Cultural Factors**

The factory population was not a homogeneous one as far as ethnic or cultural aspects were concerned. There were 3 ethnic groups, Malays, Chinese and Indians. They were all subjected to the same environmental conditions in the factory. However, the hysteria outbreak affected almost exclusively one ethnic group. There were no full answers as to the reasons for this. There were probably many factors in the socio-cultural milieu that required further research in this direction to elucidate the answers. The belief in "jins" (spirits) seemed to stem from the pre-Islamic faith of the Malays. This might be the cultural factor contributing to the particular ethnic group's susceptibility to such hysterical epidemics. Given a susceptible population, certain emotions particularly that of fear attributed to the seeing of "ghosts" might have sparked off the epidemic.

Related to the belief in "jins" was the belief in the spiritual powers of the "bomoh". He was regarded in the village as the pillar of the society and professed to rule demons by special incantations and exorcising rituals. Somehow his presence and his ceremonial performances to exorcise the "jins" appeared to have a calming down effect on the girls.

### **Management of the Epidemic and Prevention**

This mass hysteria was treated like an epidemic disease of bacterial origin. The only serious difference here was that the emotional contagion was transmitted from person to person very fast i.e. within minutes, in a susceptible population. The occurrence of groups of cases instead of singly added difficulties to the people handling the situation.

These principles were followed:

- (a) cases were defined in order that they could be picked out from the general factory population and treated,
- (b) "isolation" of cases was implemented since they were considered "infectious",
- (c) "immunisation" was given to those who were susceptible, in this case by dispelling fear and restoring confidence, and
- (d) public information about progress of the epidemic was given and control measures taken.

The above followed closely the suggested measures by Friedman (1967) in order "to decrease the potency of the hysteria" such as:

- (a) dispelling fears among the non-affected members of the community,
- (b) offering discussions related to factual information about group disturbances e.g. suggestibility to the public, and
- (c) giving clinical information about epidemic hysteria to public officials and to local medical, para-medical and educational personnel.

It was found that the principle of isolation also advocated by E. S. Tan (1963) in his school outbreak in Malaysia played an important part in the prevention of the transmission of emotions through sight and hearing by the non-affected population.

As for the medical treatment of individual cases with tranquillisers and sedatives, it was observed that these injections sometimes with large doses, had little effect in violent cases. It would appear that as such outbreaks were a psychological phenomenon, psychological methods have to be used to combat the situation.

The prevention of future occurrences is a long term one. The key factor lies in the education of the

community and in raising their level of immunity by inculcating right notions and giving basic facts and eliminating superstitions. It will have to be gradual and well-conceived to be effective. The community leaders and village peers have an important role to play in this direction.

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#### REFERENCES

1. Ebrahim, G. J.: Mass Hysteria in School Children. *Clinical Paediatrics*, 1 pp. 437-438, 1968.
2. Friedman, T. I.: Methodological Considerations and Research Needs in the Study of Epidemic Hysteria: *American Journal of Public Health*, Vol. 57, No. 11, pp. 2009-2011, 1967.
3. Knight, J. A., Friedman, T. I., Sulianti, J.: Epidemic Hysteria. A Field Study, *American Journal of Public Health*, Vol. 55, No. 6, pp. 858-865, 1965.
4. Koro Study Team: The Koro Epidemic in Singapore. *Singapore Medical Journal*, Vol. X, p. 234, 1969.
5. Tan, E. S.: Epidemic Hysteria: *Medical Journal of Malaya*, XVIII, No. 2, pp. 72-76, 1963.