

A PROFILE OF 25 INHALANT ABUSERS REFERRED TO WOODBRIDGE HOSPITAL FOR PSYCHIATRIC ASSESSMENT

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SYNOPSIS

This is a retrospective study of 25 Inhalant Abusers referred to Woodbridge Hospital for psychiatric assessment. The characteristics of the patients and the families conform to the findings in other studies. However the relationship between inhalant abuse and psychiatric morbidity could not be determined. 5 of the 20 Inhalant Abusers were Schizophrenics who started the habit after the onset of the illness.

Eighteen patients were admitted for Inpatient management. All patients were educated on the effects of glue sniffing; family sessions were held and follow-up by various agencies arranged. There was 1 death.

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INTRODUCTION

Inhalation of mind-altering substances has been described through the centuries. However the intentional use of commercial solvents to experience intoxicating effects is a more recent phenomenon and a growing problem with far-reaching effects. The prevalence of inhalant abuse cannot be accurately determined because of the wide range of commercial solvents available and the varying extent and ease with which they can be abused (1, 3).

Despite this, epidemiologic and social aspects of inhalant abusers have been widely studied and neurologic findings reported. Little, however is known about the prevalence of psychiatric symptoms in inhalant abusers. Studies indicate that solvent abuse does not appear to be an important cause of long term psychiatric disturbances but that it occurs in a group of individuals with high psychiatric morbidity (3).

This study examines the increasing numbers of solvent abusers referred for psychiatric assessment presenting with abnormal and/or changed behaviour.

MATERIAL AND METHOD

Twenty-five cases of solvent abusers referred to the

Admission Room, Woodbridge Hospital between July 1984, and October 1986, were studied retrospectively. Attention was paid to the demography, family aspects of the abusers and the psychiatric aspects. The patients had been abusing inhalants for periods ranging from 1 month to 5 years. They abused mainly glue and paint thinner; one patient also sniffed petrol.

RESULTS

I. Patients Characteristics

There were 24 males and 1 female in the study. The racial distribution was as follows: Chinese 68%, Malays 20%, Indians 8%, others 4%. Their ages ranged from 15 years to 33 years. 56% were less than 20 years old, 32% were between 20 and 29 years old and 12% were over 30.

24 patients were single and 1 divorced. 15 patients had Primary Education 9 had Secondary Education and 1 had attended ESN School for 5 years. The Employment status of the sample was as follows: 48% unemployed, 36% in odd jobs, 16% were working full-time.

II. Family Background

Family size varied from an only child to 14 siblings. 9 patients were the youngest in their families.

Thirteen of the patients reported disrupted family background: Divorced parents — 6 patients, Early parental death — 4 patients, Paternal abandonment — 1 patient, frequent family quarrels — 1 patient. 1 patient was an adopted child.

Substances abuse was reported in the siblings of 7 of the patients: 4 patients had siblings who abused drugs such as Opium and 3 other patients had siblings who also inhaled glue. The fathers of 2 patients were described as chronic alcoholics.

III. Method of Referral

Twenty-one patients were brought to the Admission Room by the Police; 2 were brought by family members and 2 were referred by the Army. The reasons for referral for the 25 cases, are shown in Table 1.

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Table 1.
REASONS FOR ADMISSION

Reasons	Number of Patients	%
Caught sniffing glue by Police	9	36
Reported by family	3	12
Aggressive/restless/violent behaviour	6	24
Wandering/Public Nuisance Abnormal Behaviour (talking nonsense, talking, laughing to self)	3	12
Others (Referred by Army for assessment)	1	4

IV. Psychiatric Complications

There was little information in the clinical records of the extent and severity of solvent abuse. Patients were reluctant to give information and their families did not seem to know the extent of the habit.

In our group, 9 patients started sniffing with peers; 5 claimed to sniff inhalants alone. Reasons for solvent abuse in our group varied but the main ones were peer influence, boredom and curiosity. The actual amount of glue and thinner inhaled could not be determined. But all our patients inhaled the solvents from a rag or a small plastic bag.

Symptoms of acute intoxication were noted in 6 patients. Various terms were used to describe these: 'high feeling', 'restless', 'giddiness', 'relaxed', 'feeling happy'. Some patients were also reported to talk, laugh and smile to themselves when intoxicated (6 patients). Only 1 patient described becoming unconscious from the effect of inhaling glue. Complaints of aggression and violence were reported in 9 patients; no information was available in 9 patients. None of the 5 patients with a previous diagnosis of Schizophrenia had a history of symptoms suggestive of an acute relapse.

The psychiatric diagnosis made in the cases is as shown in Table 2. All the 5 Schizophrenic patients abused solvents only after the onset of the Schizophrenic illness. Another 3 of the 5 Schizophrenic solvent abusers also had

Table 2.
DISTRIBUTION BY PSYCHIATRIC DIAGNOSES

Diagnoses	Number of Patients	%
Schizophrenia	5	20
Personality Disorder	8	32
Neuroses	1	4
Mental Retardation	1	4
No Psychiatric Illness	10	40

personality disorder. They had a history of antisocial acts and past history of Drug abuse (ganja, opium and heroin).

Ten of the inhalant abusers, also misused other drugs as well; 15 did not. All 25 of the solvent abusers smoked cigarettes. Fourteen of them also consumed alcohol.

Of the 25 cases, 18 were admitted for inpatient management. Admission allowed time for detailed assessment and observation. The remaining 7 were dealt with on an outpatient basis. Length of admission varied from 1 day to 2 weeks. Only 2 cases stayed for longer periods, 1 month and 2 months respectively.

All the patients were counselled and educated on the effects of glue sniffing; family members were seen and advised on how to cope with and help the patients.

Arrangement were made on discharge for follow-up by various agencies, for example, SANA, the Ministry of Community Development, religious self-help groups. Those with a diagnosis of Schizophrenia received in addition, treatment for the psychosis. One patient later died while intoxicated; he fell from a block of flats after sniffing glue.

DISCUSSION

Inhalant abuse was first detected in Singapore in 1979. In 1980, 24 cases were detected but by December 1986, 1569 cases were reported. As in other countries, the majority of the abusers are young people below age 20 years. Data from various studies suggest that chronic inhalant abuse is a phenomenon of the young (late childhood — early adolescence) and the very poor (3, 4). Low cost and easy availability are contributing factors.

Evidence in overseas studies indicate that inhalant abuse is more common among minority groups (5, 1) and that there is an increasing incidence among females. But the small sample size in our study precludes any conclusion on this.

Inhalant abusers perform poorly in school and often are dropouts (6, 1, 2); our study confirmed this. Unsuccessful and unrewarding school experiences have been mentioned in the literature as precipitating factors (7). But whether these are causes or effects of solvent abuse is difficult to determine.

Families of solvent abusers have been described as "Multiple Problem Families" (1). Family disorganization is described to be of various types: broken family through divorce, separation or abandonment, absent father, criminality and alcoholism, unemployment, poverty and large families (6, 8). In our study, 13 were families with problems. This figure may actually be higher as there was no attempt to confirm the information given and 'intactness' was assumed when history of disorganization was not elicited during the interview. Studies have indicated that there is a significantly more conflictual, anxious atmosphere in sniffer families with particular problems in communication and organization (1).

Also mentioned in the literature on glue sniffing children is that of alcoholic, hostile and unloving parents. However Watson points out that there is no suggestion that the children of alcoholics preferentially sniff glue and, if there is any association then it is another readily available form of intoxication (10).

It is generally accepted that there are 2 major types of inhalant abusers:

- experimenters or transitional users who move on to other drugs and
- chronic abusers (1).

Definitions of Chronic Abuse differ especially on the period of abuse and the amount. But all have a minimum period of abuse of at least 3 to 6 months. In our study, the period of abuse had varied from 1 month to as long as 5 years. Rather than being of the first type i.e. starting with glue sniffing and moving on to other drugs, the reverse was seen in our patients. Easy availability, low cost of inhalants and our strict drug laws are likely contributing factors to this differing picture.

There is varying information about the prevalence of psychiatric symptoms in solvent abusers. It appears that the rates of psychiatric morbidity in this group vary according to the population studied; the selection process with reference to the health setting plays an important role. They are highest in those referred to psychiatric hospitals and lowest in clinics dealing with volatile substance abuse (3). The literature reveals the variability on this issue. Brozovsky and Winkler (1965) found that three-

quarters of small sample of sniffers were suffering from Schizophrenia. By contrast, Alapin (9172) evaluated sniffers in Britain and Poland and reported about a third of them to be Schizophrenic. Comstock (1976), describing a sample of sniffers hospitalized in a poly drug treatment centre, reports a diagnostic breakdown as follows: Sociopathic personality 23%, Adolescent Adjustment Reaction 45%, Depressive Neurosis 23%, Schizophrenia 9% (1).

Other factors that would provide evidence on the relationship between inhalant abuse and psychiatric disability include follow up examinations and extensive investigations and assessment to detect intellectual deficit and brain damage. All this was not possible as this was a retrospective study. Hence any conclusion on whether psychiatric illness results directly from glue sniffing, is not possible.

Five patients, 20% of our sample, had a diagnosis of Schizophrenia but these patients began inhaling solvents after the onset of the illness; there is no evidence that the illness arose from glue sniffing.

Ten patients, 40% of our sample, had no psychiatric illness. There are various possible explanations. Firstly, the majority of the cases were adolescents. It is not unlikely that the low incidence of psychosis in this age group and the fact that psychiatric symptoms may appear at a later age, contributed to the lower figure. It would prove interesting to review this group in 5 years time with regard to the psychiatric diagnosis.

Personality disorder of the Antisocial type is common in volatile substance abusers. In our study, 8 patients (32%) had a diagnosis of Personality Disorder. This group also abused other drugs and alcohol and had forensic records. Antisocial activities of the solvent abusers preceded the onset of glue sniffing. Volatile substance abuse is likely to be another expression of the disorganized chaotic life style of this group (1).

Symptoms of Acute Intoxication similar to that des-

cribed in the literature, starting with mild euphoria which continued into a confusional state with disinhibition, behavioural changes and perceptual abnormalities were noted in our patients. There was also risk-taking and aggressive behaviour and eventual drowsiness (2, 8, 10).

Toluene is the main toxic hydrocarbon in the solvents (thinner and glue) abused by our 25-patients. The degree of central nervous system depression it causes is both time and concentration dependent (1). It is believed to affect neuronal transmission by interfering with the lipid membrane (9). In humans, inhalation of Toluene is reported to elicit a variety of behaviour, ranging from diminished psychomotor performance and fatigue on low exposure, to intoxication and unconsciousness on high level exposure (1).

Treatment of the solvent abuser is admittedly difficult. No single therapeutic intervention has been instrumental in achieving change. Generally research indicates that the approach that covers all areas of the patient, his life, time and family, were more beneficial. In addition, legal measures and restriction on sales to minors, incorporating noxious but nontoxic odours, and health education, have been advocated.

There is no conclusive data at present on the extent of severe psychiatric morbidity among volatile substance abusers and little evidence on the aetiological relationship. But studies in other countries indicate that severe psychiatric morbidity among inhalant abusers is neither high nor directly related. The antisocial personality is likely to be the cause of volatile substance abuse rather than a result of it.

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REFERENCES

1. Sharp C W & Brehm M L Eds. Review of Inhalants: Euphoria to Dysfunction. National Institute of Drug Abuse Research (NIDA) Monograph 15 October 1977.
2. Bowers AJ and Sage LR: Solvent Abuse in Adolescents: the Who? What? and Why? Child: care, health and development, 1983; 9: 169-78.
3. Ron MA: Volatile Substance Abuse: A Review of Possible Long-Term Neurological, Intellectual & Psychiatric Sequelae. British Journal of Psychiatry 1986; 148: 235-46.
4. Anti-Inhalant Abuse Coordination Committee: Report on Measures to curb Inhalant Abuse in Singapore.
5. Birdling J: The Sniffing Problem. NSAD Summer School 1981: On Alcohol, Drugs and Chemical Dependency (3-5th Feb 81).
6. Bose P: Solvent Abuse — Causes, Effects & Management Parts I & II. Reach Out 1983; 8(4) and 1984; 9(1).
7. Cohen S: 'Inhalants' in Handbook of Drug Abuse.
8. Black D: Annotations — Glue Sniffing. Archives of Disease in Childhood 1982; S7: 893-94.
9. Shaw, Kellam and Mottram: Brain Sciences in Psychiatry. Chapter on Addiction 218.
10. Watson J M: Solvent Abuse by Children and Young Adults — A Review. Brit opf Addiction 75 (1980) 27-36.