

The Pattern of Completed Suicides Seen in Kuala Lumpur General Hospital 1999

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Summary

A study was done on 76 suicide cases managed by the Forensic Pathology Department of Hospital Kuala Lumpur (HKL) from January till December 1999 to explore the pattern of suicide and psychiatric history.

The Chinese contributed 52% (n=40) of cases followed by the Indians (29%, n=22) and the Malays (12%, n=9). After the age of sixty, 84.6% of the subjects were Chinese. The common methods of suicide were poisoning (39%), hanging (34%) and jumping from height (22%). Four out of 12 case-notes traced had documented psychiatric history i.e. schizophrenia.

Conclusion: the suicide rate for Kuala Lumpur is estimated at 7.4 per 100,000. The Indians has the highest suicide rate of 21.1 per 100,000 in keeping with other local studies. The suicide rate for the Chinese is 8.6 per 100,000, but it increased to 23 per 100,000 among the elderly Chinese. The suicide rate for Malays is 2.6 per 100,000, higher than what was cited in previous local studies. The incidence of jumping from height as a suicide method had doubled over the last 2 decades.

Key Words: Suicide, Kuala Lumpur, Age, Ethnicity, Methods of suicide

Introduction

Suicide is defined as an intentional and uncoerced self-killing in which the conditions causing death are self-arranged¹. Thus, it is not a diagnosis, but more of a verdict or category of death². Suicide remains a serious public and mental health problem worldwide³. In many countries suicide is included among the top ten causes of death for all ages, and among the 15-34 age group it ranks second or third⁴.

The risk of suicide increases with advancing age⁵. It is rare in children below 12, it increases after puberty and the highest suicide rate is among older men. In industrialised nations there has been an increase in

male rates within all age groups, but most worryingly in the younger cohorts². Intent and lethality are important aspects of suicidal behaviour. High on the hierarchy of lethal methods are violent acts involving a firearm, hanging, carbon monoxide poisoning, drowning, suffocation, or jumping from a great height⁵. Drug overdoses and poison ingestions may be less violent, but vary in their toxicity and lethality⁵. The most common methods vary among nations, cultures and age groups, between sexes and over time². By studying the methods most often used for suicide in Kuala Lumpur, we may be able to identify the availability of methods and following that, make appropriate preventive strategies. Two modes show an

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age rather than sex bias – jumping from a high place among young adults and drowning among older victims⁵. Whether these trends could be seen in Kuala Lumpur, will be discussed at the end of this paper.

Several studies had studied the extent of mental illness among those who commit suicide^{6,7}. These studies found that more than 90% of cases could be diagnosed as having a mental disorder. The two most prevalent diseases were depression and alcoholism and suicide is rare among those with good mental and physical health. There is some controversy regarding the role of psychotic illness in suicide². Recent studies found no major differences between psychotic and non-psychotic subgroups in sociodemographic features, comorbidity, clinical history or communication of suicidal intent. However, Isometsa et al⁸ noted that those with psychotic features were more likely to use violent methods in the suicidal act.

Epidemiological data concerning suicide are generally questionable: some deaths labelled accidental may hide suicides due to shame, to limit psychological burden on survivors, or even to avoid loss of life-insurance payments⁵. Sometimes deaths occurring a few days after a suicide attempt are attributed to the final cause rather than considered a delayed outcome of a suicidal act⁵. Maniam⁹ had demonstrated that although the official Malaysian suicide rate had decreased from a mean of 6.1 per 100,000 in 1966 – 1974 to a mean of 1.6 per 100,000 in 1975 – 1990, there had been a corresponding increase in the rate of 'deaths due to undetermined violence'. He argued that the decrease in the official suicide rate was due to changes in the practice of recording and classifying suicides, and had proceeded to add these two figures to give a 'corrected suicide rate' of 8 – 13 per 100,000 in West Malaysia since 1982.

To overcome the above difficulties, this study will target a hospital population, which includes both groups of 'brought-in-dead' (BID) patients who were brought in by the police, as well as those who succumbed to the complications of their suicidal attempts after being hospitalised. This study aims to explore the rate and pattern of suicide among the population of urban Kuala Lumpur in the year 1999 and identify the victims who had been in contact with psychiatric services in HKL during their lifetime. The data would guide us in the planning of mental health strategies and preventing further increase in suicide rates in Kuala Lumpur specifically, and probably other parts of Malaysia.

Materials and Methods

This is a retrospective and descriptive study. All cases that were post-mortem by the Forensic Pathology Department of Hospital Kuala Lumpur from 1st January 1999 till 31st December 1999 were screened. The suicide cases were identified based on the diagnosis made by the pathologist who managed the victims. All cases diagnosed as suicide were included into the study. Source of data were the pathologist's notes, and where available, the medical and psychiatric case notes.

Results

1. Demographics Data

1.0 Number of cases

Of the 1249 cases that were post-mortemed by the Forensic Pathology Department in 1999, 76 persons (6.1%) were identified as suicide cases. Fifty (65.8%) of them were brought in dead, 2 patients (2.6%) died in the Accident and Emergency Department, while 24 (31.6%) died after they had been transferred to various wards. We encountered a lot of difficulties to trace the medical or psychiatric records of these patients, and only managed to get hold of 12 case notes.

1.1 Age Distribution

There were 7 subjects (9.3%) aged below 20 years. Mean age is 43.0 years. As shown by the Figure 1.1, the age distribution is skewed to the right, with most subjects being in their second and third decade of life.

1.2 Ethnic Group distribution

Of the 76 subjects, the Chinese contributed the biggest proportion i.e. 52%, (n=40) followed by the Indians (29%, n=22). The Malays made up 12% (n=9) of the sample and the remaining 7% are made up of 'other' ethnic groups. The 'other' ethnic group comprises of 1 orang asli and 4 Indonesians.

1.2.1 Ethnic groups and age distribution

Table I shows the age distribution of various ethnic groups. After 60 years of age, it is quite apparent that only the Chinese contributed quite heavily to the figures. Of the 14 elderly suicides, 12 subjects (84.6%) are Chinese.

1.3 Gender distribution and associated factors

There are 55 males (72.4%) and 21 females (27.6%) in this sample. Thus, almost three-quarter of the sample is male and their mode is in the 3rd decade of life. The

females have a later mode, i.e. at the 4th decade. The mean age for males is 43.0 years, whereas the females have the mean age of 42.9 years.

Table II shows the ethnic group distribution of the different sexes. For each gender, the ethnic group distribution is about the same.

2. Choice of Methods

2.1 Overview of the suicide methods

The most popular method of suicide is apparently death by poisoning (39%), followed closely by hanging (34%). Jumping from height was the method chosen by 17 of the subjects (22%) while the remaining 4 subjects had resorted to other methods. These are self-burning (n=1), drowning (n=2) and gunshot (n=1).

2.2 Relationship between suicide methods and age

The older patients tended to choose hanging and poisoning as their method of suicide, and none of them had jumped from height to die (Table III). The age of 60 years has been chosen as the demarcation due to its usage in classifying cases for psychogeriatric services.

2.3 Relationship between choice of methods and ethnic group

Figure 2.3 shows the choice of suicide methods of different ethnic groups. Among the 26 persons who hanged themselves, 65.4% (n=17) were Chinese, 19.2% (n=5) were Indians, while Malays and 'others' contributed 7.7% (n=2 respectively) each. Apparently, hanging is the most prevalent suicide method employed by the Chinese.

From the total of 17 persons who jumped to their deaths, 58.8% (n=10) were Chinese and 29.4% (n=5) were Malays. This is the most frequent method used by the Malay suicides.

Poisoning is the most frequent method used by Indians, i.e. 16 out of the 22 suicides (72.7%). The ethnic group distribution among the 29 persons who used this method is as follows: the Indians contributed 55.2%, the Chinese 37.9% and the Malays and others 3.4%.

2.4 Relationship between suicide methods and gender

There appears to be some differences in the choice of suicide methods between the male and female patients. Most of the males (40%, n=22) died by hanging, followed by poisoning (36.4%, n=20). The females instead chose death by poisoning (42.9%, n=9),

followed by jumping from height (33.3%, n=7). Only 19% (n=4) of females had hanged themselves. However, the association between gender and choice of methods is a weak one, which does not reach statistical significance.

3. Presentation to Hospital

3.1 Admission prior to death

Of the 76 cases, 24 suicide attempters had survived long enough to be managed in various wards before finally succumbing to the complications of their attempts. Age ranges from 14 to 91 years, with a median of 47 years. Self-poisoning is the most frequent method employed by this group of patients, apart from one case each of jumping from height and burns respectively. The duration of admission prior to death ranges from 1 day to 20 days. Gender-wise, there are equal proportion of males and females. Among the males, 31% (n=17) were admitted, while for females 33.3% (n=7).

3.2 Patients who were brought in dead

Apparently, all hanging cases were brought in dead. Sixteen of the 17 patients (94%) of those who jumped from height were also dead by the time they reached hospital. For those who attempted suicide by ingestion of poisons, 6 cases (21%) were brought in dead. Those using other methods i.e. 2 cases of drowning and 1 gunshot injury were also brought in dead. Gender-wise, 69% of males and 67% of females were brought in dead.

4. Psychiatric History Amongst Suicide Cases

The following information was obtained from case notes. It is unfortunate that only 12 case notes could be traced, making the analysis very restricted. From the 12 case notes of these individuals: 4 had actual documentation of a psychiatric illness, 4 had suggestive history of psychological distress prior to death, while the last 4 had no reference at all about their mental state.

The following are the summaries of the 4 cases with a positive psychiatric history:

1. 27 year-old Chinese single gentleman. Diagnosed schizophrenia since 1991. His father was a drug addict who divorced his mother in 1986. Patient stayed with mother, who had a stroke in 1995. Compliance is irregular and patient had multiple admissions to psychiatric wards. Last admission was in March 1999. Two weeks post discharge, patient committed suicide by jumping from height.

2. 50 year-old Chinese gentleman, single, unemployed. Diagnosed schizophrenia since 1990. Poor compliance and had multiple admissions to psychiatric wards. Had 2 previous suicide attempts: the first was via organophosphate poisoning in 1989 which patient explained as 'just for fun', and the second via drowning in 1998 (patient rationalized that the medications were not effective and he wanted to throw it into the river). Died via self-burning in January 1999.
3. 23 year-old Malay lady, single, recently unemployed. Diagnosed to have schizophrenia since 1997. Has very poor social support: illegitimate child, caretaker frequently shifting from grandparents to aunts. Had three admissions in

1993, two in 1998 following which she was sent to Hospital Bahagia Ulu Kinta. Apparently well in 1999, but attempted to jump from 13th floor of apartment building 3 months before the fatal attempt. At that time, was rescued by aunt and patient rationalized that she was responding to auditory hallucinations (male voices telling her to die). Defaulted treatment several weeks prior to suicide. Died via jumping from height in November 1999.

4. 33 year-old Chinese single gentleman. Followed up by private practitioner for schizophrenia, apparently in remission at time of death. Became upset when diagnosed to have diabetes and committed suicide by taking paraquat.

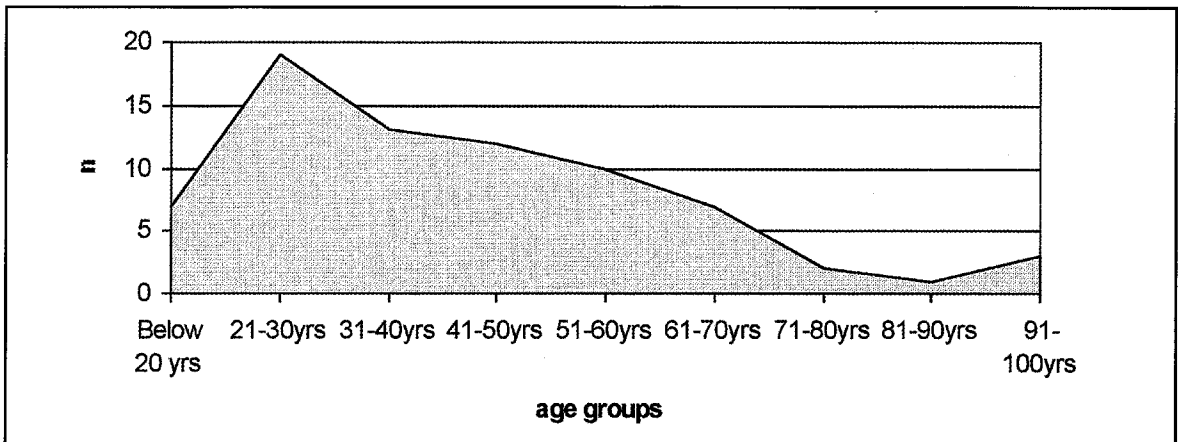


Figure 1.1: Age distribution of completed suicide subjects

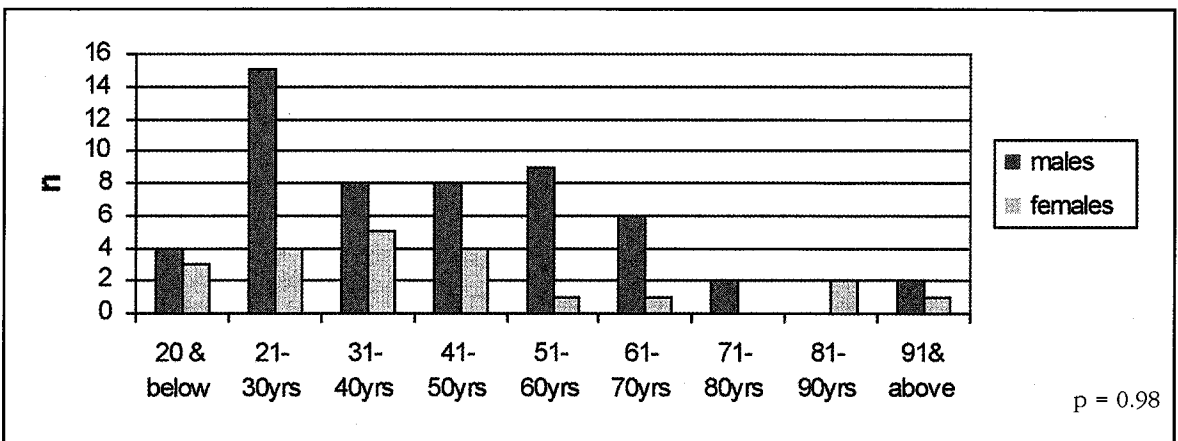


Figure 1.3: Age distribution of the different sexes

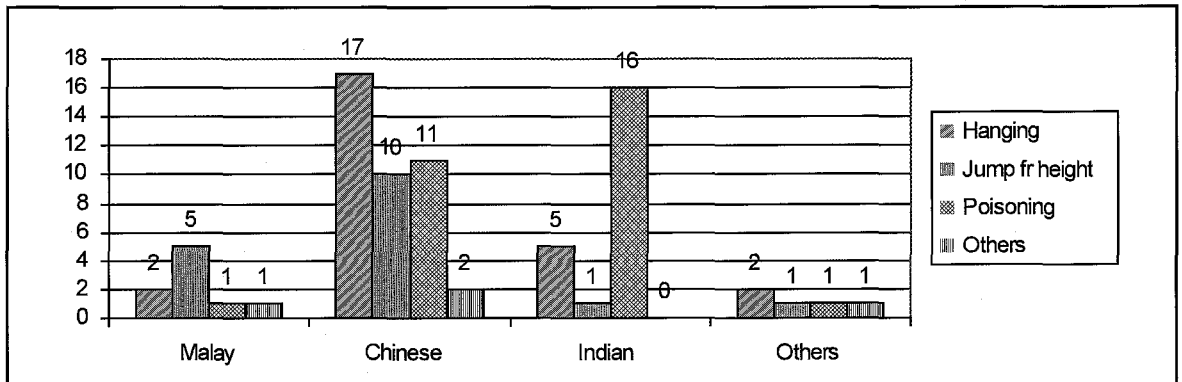


Figure 2.3: Distribution of suicide methods among different ethnic groups

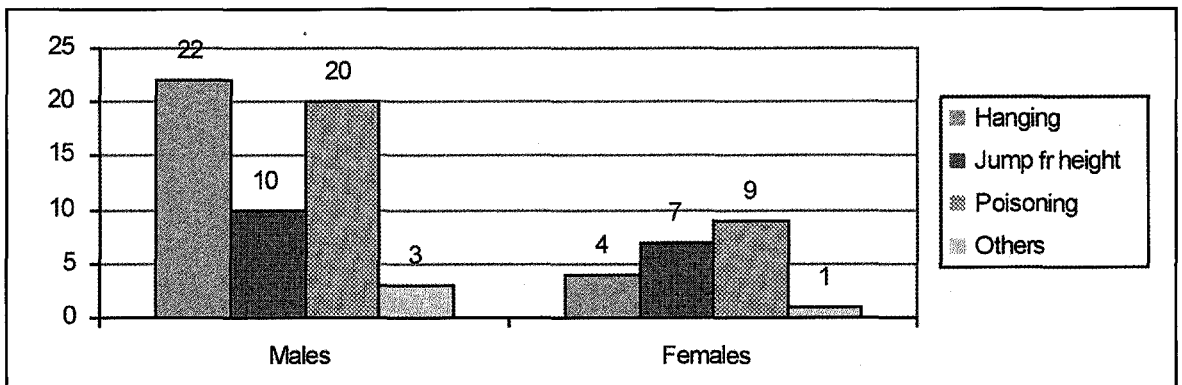


Figure 2.4: Relationship between suicide methods and gender

Table I : Ethnic groups and age distribution

Age (years)		Ethnic group				Total
		Malay	Chinese	Indian	Others	
	Below 20	2	1	3	1	7
	21 - 30	5	6	5	3	19
	31 - 40	0	7	5	1	13
	41 - 50	1	7	4	0	12
	51 - 60	0	6	4	0	10
	61 - 70	0	6	1	0	7
	71 - 80	1	1	0	0	2
	81 - 90	0	2	0	0	2
	91 - 100	0	3	0	0	3
Total		9	40	22	5	76
Mean		32.00	51.38	36.68	24.60	

Table II : Ethnic groups and age distribution

Ethnic group		Gender		Total
		Male	Female	
	Malay	7 (12.7%)	2 (9.5%)	9
	Chinese	29 (52.7%)	11 (52.4%)	40
	Indian	16 (29.1%)	6 (28.6%)	22
	Others	3 (5.5%)	2 (9.5%)	5
Total		55	21	76

Chi square = 0.495, p = 0.920

Table III: Relationship between choice of suicide methods and age

	Age group	
	60 years or less	More than 60 years
Hanging	18 (29.0%)	8 (57.1%)
Jumping from height	17 (27.9%)	0
Poisoning	23 (37.7%)	6 (42.9%)
Others	4 (6.6%)	0
Total	62	14

Discussion

Death by suicide is generally unacceptable and disowned by the conservative society in Malaysia. It is still considered a crime in the Malaysian Penal code. Apart from that, there is the problem of claiming the life insurance for those whose cause of death was certified as suicide. In this kind of scenario, there are high probabilities that the suicide rates are under-reported or categorised as accidental or undetermined deaths. The Yearbook of Statistics Malaysia¹⁰ reported 126 certified suicides nationwide in 1997, which gives a suicide rate of 0.8 per 100,000 for the general population in 1997.

The suicide rate in HKL estimated from this study is 7.4 per 100,000 -which is much higher than the national rate mentioned earlier. This may be contributed by the fact that HKL is the national referral centre and receives a lot of serious cases. This could also be explained by the possibility that Kuala Lumpur's urbanized setting and changes in social structures may cause its residents to choose suicide as a mode of problem solving.

Urban life has often been blamed for creating isolating anomic environments with high suicide rates⁵. However, there had not been empirical research support for this. In China, suicide in rural areas is 3 times more prevalent than in urban centres⁵. In their literature review of suicidal behaviour in Malaysia,

Morris and Maniam⁹ had commented on the very high Indian suicide rates in Cameron Highlands. The easy availability of lethal biocides and lack of access to assistance or treatment may be a more important factor than general social isolation contributing to the higher suicide risk in rural areas⁹. A more systematic suicide database nationwide would be able to show whether there are actual differences between urban and rural areas.

Age distribution

Based on the mid-year population estimates in June 1999, those aged over 60 years contributes to 6% of the population. However, they are over-represented in this sample i.e. contributing 18% of suicide subjects in HKL. Risk factors in the elderly include medical illness, retirement, social isolation, bereavement, and limited access to support services⁵. Medically ill persons frequently suffer from undiagnosed and untreated depression that can contribute to a consideration of suicide⁵. Lawrence et al¹¹ found that people over 60 years of age accounted for 15% (n=447) of suicides in Western Australia in 1980-1995. In their sample, suicide is significantly associated with the diagnosis of mood disorder. They also found that the highest risk was observed at ages 65 – 74 years, which they categorized as the 'younger old age' group. In this study, of the 14 elderly suicides, 70% (n=9) are aged 61 – 80 years. The

sample in this study is too small to draw a conclusion, but it does suggest that the younger old age group would be an important target for mental health intervention programs.

As a comparison, the younger subjects (20- 30 years) represent 18% of the population and contribute 25% (n=19) suicide cases. Although they are also overrepresented, the fraction is not as large as shown in the elderly patients.

Ethnic distribution

The relationship between suicidal behaviour and ethnicity has long been the issue of research interest in Malaysia⁹. In their excellent review of local studies on suicide, Morris and Maniam⁹ had illustrated the markedly different attempted suicide and suicide rates among the three main ethnic groups, i.e. the Malays, Chinese and Indians.

In this group of patients, the Malays have the lowest suicide rate of 2.6 per 100,000. This is possibly due to their religious affiliation, since Malays in Malaysia are generally Muslims. This had been reflected in other studies abroad, which showed suicide rates are lower among monotheistic religions, including Judaism, Islam and Christianity⁵.

Teoh¹² reported the suicide rate of 1.1 per 100,000 for Malays based on a study of 264 completed suicides from the coroner's file in Kuala Lumpur in 1965 to 1970. This means that the suicide rate for urban Malays has actually doubled. More research should be done to explore this trend and the possible causes for it. One aspect to be considered is comorbid substance abuse⁴, as there has been an increased risk of suicide among substance abusers. For example, the suicide rate of heroin addicts is about 20 times greater than that of the general population⁴. The availability of lethal amount of drugs, intravenous use, associated antisocial personality disorder, chaotic lifestyle, and impulsivity are some of the factors that predisposes drug-dependent persons to suicidal behavior, particularly when they are dysphoric, depressed, or intoxicated⁴.

Data from the National Drug Agency had repeatedly shown that the Malays made up the biggest fraction of illicit substance abusers in Malaysia. For example in year 2000, from a total of 30,593 drug addicts, 20,147 (66%) were Malays¹³. The Chinese and Indians contributed 18% and 11% respectively¹³. Whether or not substance abuse is associated with suicide among the Malays is yet to be explored.

The suicide rate among the Chinese is 8.6 per 100,000. However the rates increased markedly among those aged 60 years and above i.e. 23 per 100,000. Ong and Yeoh⁹ stated that Buddhism promotes an attitude of acceptance in the face of adversity, but Chinese cultural values may allow suicide in certain situations for the maintenance of honour and integrity⁹. A more detailed study that looks at the influence of medical illness or cultural factors e.g. feeling demoralized or 'loss of face' may shed some light on this matter.

Local studies had repeatedly shown very high annual suicide rates for Indians⁹. It ranges from 23.3 per 100,000 in Kuala Lumpur¹² to 157 per 100,000 in the rural Cameron Highlands¹⁴. The suicide rate for Indians based on this study is 21.1 per 100,000, which is the highest among the three main ethnic groups. Morris and Maniam⁹ noted that there is a more ambivalent attitude to suicide in Hinduism, which is the predominant religion of Indians in Malaysia. To study this variable (religiosity), they had suggested that future studies focus on the comparison of suicide rates between Hindu Indians and Indians who are Christians or Muslims. For example, Karim and Price¹⁵ did a survey of Fijian suicides in 1972 and reported that suicides among Hindu Indians outnumber Muslim Indians by a ratio of 45: 1.

Another aspect is the significant use of toxic biocides as a lethal method of suicide in the Indian community. Seventy two percent (n=16) of the Indians in this study had poisoned themselves, with 69% of them using a toxic biocide.

Methods

In the 1965-1970 period, the most common method of suicide in Kuala Lumpur is hanging (50%), caustic soda ingestion (12.8%), jumping from height (11.4%) and swallowing insecticides (7.9%)¹². Within two decades, the results of this study had demonstrated some changes in that pattern: hanging had gone down to 34%, poisoning predominates with 39% and jumping from height had doubled to 22%.

In the case of poisoning, easy availability of paraquat and other lethal biocides presents a special challenge. Advocates had stressed on stringent control on sales and more secure storage of agricultural biocides⁹.

The increasing number of high-rise buildings in Kuala Lumpur may contribute to the increasing number of people committing suicide by jumping from height. Safety and security features should be incorporated into

the design of these buildings to prevent the public from gaining access to a fast and lethal method of suicide.

As mentioned earlier, Masterton and Cavanagh² described that their younger subjects tended to commit suicide by jumping from height, whereas the older preferred drowning. This is reflected in this study in some way as none of the subjects aged 60 and above had committed suicide by jumping from height. However, instead of drowning, the method chosen was either hanging or ingestion of poison. This may just reflect on the availability of methods. Another popular method often reported in the local newspapers – i.e. carbon monoxide poisoning – was not seen in this particular group of patients.

Clinical History

It is unfortunate that adequate information regarding these subjects' previous medical history was not available. Whether or not physical or mental illnesses and substance abuse was present would have shed some light on trying to understand the subjects' suicidal behaviour.

All the 4 patients who had previous documented psychiatric history were suffering from schizophrenia. Repeatedly, studies had shown that the suicide risk is high among schizophrenia patients: up to 10 percent die by committing suicide⁴.

Two of these patients had a previous suicide attempt, which is supported by literature that approximately 50 percent of these patients have made previous suicide attempts⁴. Depressive symptoms are closely associated with their suicide; studies have shown that depressive symptoms were present during the last period of contact in up to two thirds of schizophrenia patients who committed suicide⁴. Only a small percent commit suicide because of hallucinated instructions or in order to escape persecutory delusions. Up to a third of schizophrenic suicides occur during the first few weeks and months following discharge from hospital; another third commit suicide while they are inpatients⁴.

Other data on psychiatric illnesses associated with suicide i.e. depression, substance abuse (especially alcohol) or personality disorder were not seen in this group.

Conclusion

This study shows that suicide is a prevalent problem in Kuala Lumpur. Data should be continually collected in

order to be able to detect a certain pattern, if there is any – especially those involving psychosocial factors that might be addressed with more assertive psychiatric intervention. Some examples of these factors are the incidence of depression among the elderly Chinese and the association between substance abuse and the increasing trend of suicide among the Malays. The high suicide rates among the Indians will need a more in-depth study to identify the predisposing and precipitating factors. The choice of lethal biocides may be a contributing factor, but other areas for example religiosity, alcohol abuse, economic status, attitudes towards suicide and problem-solving strategies would also need to be considered⁹.

Jumping from height is becoming an increasingly common method of suicide in Kuala Lumpur. It would be useful to identify the buildings involved so that safety and security features may be incorporated into the present buildings, or even new high-rise buildings yet to be built. Lastly, data collection should not be limited to completed suicides only, but also the attempted ones. A parasuicide registry would enable psychiatric professionals to identify repeated attempters or other risk factors, so that a more focused intervention approach could be offered.

Limitations

The data in this study was derived mainly from the pathologists' notes. Conclusions regarding the patients' mental state or physical ailments could not be made because case notes were available for only 16% of cases. A prospective study that includes a psychological post-mortem would provide a better basis, but requires a lot of manpower, financial and ethical considerations.

Another limitation is that this study only included data of cases in Kuala Lumpur Hospital, which did not include other general hospitals in the Klang Valley. This may not reflect accurate findings for the Klang Valley population. The shortage of time, manpower and facilities had also limited our ability to explore other confounding factors that could influence the results of this study.

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