

SUICIDAL BEHAVIOUR IN SINGAPORE FOR THE YEAR 1980

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SYNOPSIS

A survey in Singapore for the year 1980 showed a total of 1,698 attempted suicides and 230 suicides giving a rate of 70 per 100,000* and 9.5 per 100,000* respectively. For the attempted suicides, there was 1 male to 2.2 females. The most common age group was 20-29 years (50%). Chinese accounted for 73% and Indians 17%, but the latter had the highest rate of 217*. Self poisoning accounted for 95%. Compared with 1971 survey, the pattern was similar, but the rate had gone up by 30% and there was a higher percentage of tablet ingestions. For the suicides, the sex ratio was 1 male to 0.8 female and the age group 70-89, had the highest rate (54%)*. Most of the cases were Chinese (90%). The trend was similar to the 1969-71 study except that there was an increase in jumping (from 44 to 60%) and in mental illness (from 16 to 21%). Jumping appeared to be related to the rising number of high rise buildings.

* rate per 100,000 per year.

INTRODUCTION

The Suicide Act is any attempt at self-injury with self destructive intention. It could be fatal (suicide) or non fatal (attempted suicide). In any community, the sum total of all the suicide acts is made up of all the suicides and suicide attempts (1). Statistics for suicide are generally available and published by WHO for 45 countries (2). On the other hand, attempted suicide statistics are generally unavailable and only a few countries are able to make reliable estimates of its relevance (3).

In Singapore, the statistical study of attempted suicides was carried out for the year 1971 (4) and a study of suicide was done for 2 years from 1969-1971 (5). The purpose of the present paper is to study suicides and attempted suicides for the year 1980 (the census year) and review the trend.

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MATERIAL AND METHOD

For attempted suicides, all admissions to government hospitals were included. This was the same method of estimation used by Chia (4) in 1971 and did not include the cases of attempted suicide who were not treated, or were seen in clinics as outpatients. The data for attempted suicides were obtained from the admission room records of all the government hospitals of Singapore. For suicides, the data were obtained from the Coroner's Court records.

RESULTS AND DISCUSSION

Incidence and Rates

There were 1,698 cases of attempted suicides and 230 cases of suicides. This gives a ratio of 7 attempted suicides to 1 suicide which is higher than the figure of 5 to 1 for 1971 (4). The rate for attempted suicide was 70 per 100,000 population and for suicide was 9.5 per 100,000.

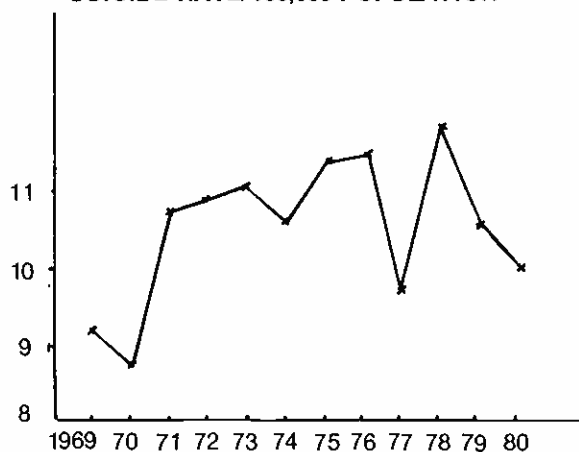
The incidence of suicide remained unchanged over the past 30 years varying between 9 to 11 per 100,000. Tables 1 and 2 show the trend from 1969 — 1980.

**Table 1
SUICIDE RATE OF SINGAPORE/100,000 POPULATION**

Year	Rate per 100,000 population
1969	9.21
1970	8.93
1971	10.90
1972	10.94
1973	10.98
1974	10.31
1975	11.20
1976	11.28
1977	9.70
1978	11.39
1979	10.54
1980	9.50

Compiled from Yearbook of Statistics, Singapore 1975/76, 1979/80.

**Table 2
SUICIDE RATE/100,000 POPULATION**



The rate for attempted suicide had gone up by 30% since the last survey in 1971 (from 55/100,000 to 70/100,000). This could mean an actual increase in the attempted suicide rate, or it could mean that more cases were sent to hospitals. Nevertheless the figure of 70 per 100,000 total population for 1980 was still an underestimate of the actual number of cases, as some did not seek treatment, while others were only treated as outpatients in clinics or private hospitals. This underestimation also held true for the 1971 survey. However, hospitalized figures were usually used in surveys of the incidence rates of attempted suicides in various countries. Using hospitalized figures, the rate of attempted suicide in Singapore was lower than some of the western cities. (Table 3).

**Table 3
ATTEMPTED SUICIDE RATE IN DIFFERENT COUNTRIES**

Country	Year	Annual Rate per 100,000 population	Reference
Edinburgh, Scotland	1970	308 Females 221 Males	Kennedy et al (6)
East Harlem, New York City	1971-1972	343 Females 232 Males	Monk et al (7)
Sweden, Malmo	1968-1970	405	Linne (8)
Singapore	1971	100 Females 42 Males	Chia & Tsoi (4)
Singapore	1980	120 Females 52 Males	

The suicide rate in Singapore has been remarkably constant over the years. It is lower than Hong Kong and Japan, but higher than the Asean countries of Philippines and Thailand, and of England and Wales (Table 4). Factors like religion, social and work stresses probably play a part in determining the suicide rate. It is interesting to note that Hong Kong and Japan are similar to Singapore when the age group of the peak suicide rate is compared (for the year 1977). All 3 areas have the peak at the 75 and above age group and the rates are from 5 to 8 times the averages suicide rate for each place.

**Table 4
SUICIDE RATE IN DIFFERENT COUNTRIES FOR 1976/1977**

Country	Year	Rate per 100,000 P.A.	Highest Rate	Age Group
Philippines	1977	0.9	2.2	15 — 24
Thailand	1977	5.6	8.3	35-44, 45-54
England & Wales	1977	8.0	14.0	65 — 74
Singapore	1977	9.7	58.6	75 & above
U.S.	1976	12.5	20.3	75 & above
Hong Kong	1977	13.7	88.9	75 & above
Japan	1977	17.9	68.6	75 & above

World Health Statistics, 1979 (2).

Age and Sex

In 1980 there was a total of 1,698 cases of attempted suicides with 526 males to 1,172 females giving a sex ratio of 1 male to 2.2 females. The age ranged from 11 to 91 with a mean at 30.6 and a standard deviation of 17.4. Most of the cases were in the age group 20-29 which accounted for 50% of the total. This group also had the highest rate of 153 per 100,000 compared to the average of 85 per 100,000 for the whole group (age 10-99). (Table 5).

In 1971 there was a total of 1,133 cases, 347 of whom were males and 786 were females, giving a ratio of 1 male to 2.2 females. The sex ratio has thus remained constant, and follows the international trend of the suicide attempt being a predominantly female act. In 1971, like in 1980, most of the cases were found in the age group 20-29 (43.4%). In both

1971 and 1980 this group had the highest rate of 140 per 100,000 and 153 per 100,000 respectively. On the whole the trend in 1980 is very similar to that in 1971 except that the rates have gone up by 30%.

There were 230 cases of suicides, giving a rate of 9.5 per 100,000 with 128 males and 102 females. The sex ratio was 1 male to 0.8 female. The suicide rate rose with age from a low of 2.7 per 100,000 in the age group 10-19 to a high of 54.2 per 100,000 in the age group 70-99.

Table 5
ATTEMPTED SUICIDE - DISTRIBUTION AND RATES
BY AGE AND SEX, 1980

Age Group	Number of Cases				Rates per 100,000 population (above age 10)		
	Male	Female	Total	%	Male	Female	Total
10 — 19	71	221	292	17.2	26	87	56
20 — 29	243	598	841	49.5	86	224	153
30 — 39	96	205	301	17.7	54	120	87
40 — 49	47	62	109	6.4	39	53	46
50 — 59	10	26	36	2.1	12	33	22
60 — 69	22	12	34	2.0	41	22	31
70 — 99	13	13	26	1.5	44	35	40
Unknown	24	35	59	3.5	-	-	-
TOTAL	526	1,172	1,698	99.9	52	120	85

Table 6
ATTEMPTED SUICIDE — DISTRIBUTION AND RATES
BY AGE AND SEX, 1971

Age Group	Number of Cases				Rates per 100,000 population (above age 10)		
	Male	Female	Total	%	Male	Female	Total
10 — 19	72	212	284	25.1	26	80	52
20 — 29	134	358	492	43.4	75	207	140
30 — 39	61	113	174	15.4	47	89	68
40 — 49	30	50	80	7.1	30	57	43
50 — 59	16	18	34	3.0	22	27	25
60 & above	17	19	36	3.2	29	29	29
Unknown	17	16	33	2.9	—	—	—
TOTAL	347	786	1,133	100.1	42	100	71

Modified from A Statistical Study of Attempted Suicide in Singapore. Chia & Tsoi, SMJ 15, 253-56. Table I (4)

Table 7
SUICIDE — DISTRIBUTION AND RATES
BY AGE AND SEX, 1980

Age Group	Number of Cases				Rates per 100,000 population (above age 10)		
	Male	Female	Total	%	Male	Female	Total
10 - 19	7	7	14	6.1	2.6	2.8	2.7
20 — 29	32	27	59	25.7	11.3	10.1	10.7
30 — 39	14	10	24	10.4	8.0	5.8	6.9
40 — 49	11	12	23	10.0	9.1	10.2	9.6
50 — 59	21	17	38	16.5	24.6	21.5	23.1
60 — 69	19	8	27	11.7	46.9	26.1	35.8
70 — 99	19	16	35	15.2	69.2	43.1	54.2
Unknown	5	5	10	4.3	—	—	—
TOTAL	128	102	230	100.0	12.6	10.4	11.5

Table 8
SUICIDE — DISTRIBUTION AND RATES
BY AGE AND SEX, 1969-1971

Age Group	Number of Cases				Rates per 100,000 population per year (above age 10)		
	Male	Female	Total	%	Male	Female	Total
10 — 19	13	23	36	9.4	2.4	4.1	3.4
20 — 29	46	47	93	24.3	13.5	14.1	13.8
30 — 39	23	19	42	11.0	9.1	7.8	8.4
40 — 49	24	14	38	9.9	12.2	8.3	10.4
50 — 59	46	16	62	16.2	32.0	12.4	22.7
60 — 69	45	17	62	16.2	54.2	20.7	37.5
70 — 99	30	18	48	12.6	107.1	41.5	67.2
Unknown	1	—	1	0.3	—	—	—
TOTAL	228	154	382	99.9	14.3	10.1	12.3

Table 9
ATTEMPTED SUICIDE — DISTRIBUTION AND RATES
BY RACE AND SEX, 1980

Race	Number of Cases				Rates per 100,000 population (above age 10)		
	Male	Female	Total	%	Male	Female	Total
Chinese	382	863	1,245	73.3	50	112	81
Malay	32	70	102	6.0	22	51	36
Indian	93	191	284	16.7	122	344	217
Others	10	39	49	2.9	48	193	117
Unknown	9	9	18	1.1	—	—	—
TOTAL	526	1,172	1,698	100.0	52	120	85

Table 10
**ATTEMPTED SUICIDE — DISTRIBUTION AND RATES
 BY RACE AND SEX, 1971**

Race	Number of Cases				Rates per 100,000 population (above age 10)		
	Male	Female	Total	%	Male	Female	Total
Chinese	267	597	864	76.3	33	75	54
Malay	22	36	58	5.1	14	23	18
Indian	42	110	152	13.4	48	186	103
Others	12	21	33	2.9	60	111	85
Unknown	4	22	26	2.3	—	—	—
TOTAL	347	786	1,183	100.0	42	97	70

The Malays had a rate of 36 per 100,000 which was almost 10 times less than the rate for the Indian females.

Table 11
SUICIDE — DISTRIBUTION AND RATES BY RACE AND SEX, 1980

Race	Number of Cases				Rates per 100,000 population (above age 10)		
	Male	Female	Total	%	Male	Female	Total
Chinese	113	95	208	90.4	14.7	12.4	13.5
Malay	20	1	3	1.3	1.4	0.7	1.0
Indian	13	5	18	7.8	17.0	9.0	13.7
Others	0	1	1	0.4	0.0	5.0	2.4
TOTAL	128	102	230	99.9	12.6	10.4	11.5

Table 12
SUICIDE — DISTRIBUTION AND RATES BY RACE AND SEX, 1969-1971

Race	Number of Cases				Rates per 100,000 population per year (above age 10)		
	Male	Female	Total	%	Male	Female	Total
Chinese	197	140	337	88.2	12.4	8.9	10.7
Malay	7	3	10	2.6	2.2	1.0	1.6
Indian	19	10	29	7.5	10.9	8.7	10.0
Others	5	1	6	1.6	12.7	2.7	7.8
TOTAL	228	154	382	99.9	14.3	10.1	12.3

In 1969-1971 the suicide rate was 12.3 per 100,000 with the highest rate in the age group 70 and above (67 per 100,000). The trend has not changed much over the past decade.

Race and Sex

Most of the cases were Chinese. For attempted suicides, the Chinese made up 73.3% with a rate of 81 per 100,000, but the Indians who made up 16.7% of the total, had the highest rate of 217 per 100,000. This high rate of suicide attempts by Indians was contributed mainly by Indian females (344 per 100,000), and this had also been established in previous studies (4, 9, 10) (See Tables 9 and 10).

For suicides, the Chinese made up 90.4% of the cases with a rate of 13.5 per 100,000 which is slightly lower than the Indian rate of 13.7 per 100,000. The suicide rate for the Malays was the lowest at 1.0 per 100,000.

Comparing the trend, the suicide rate rose in the Chinese from 10.7 per 100,000 in 1969-71 to 13.5 per 100,000, in the Indians from 10 per 100,000 to 13.7 per 100,000 and dropped in the Malays from 1.6 to 1.0. The Malays thus had the lowest suicide and attempted suicide rates and this was probably attributable to their strong religious belief is Islam (11) or it could reflect a more relaxed attitude to stresses and conflicts, or the utilization of different methods of coping. Compared to 1971 there has been an increase in the attempted suicide rate in all the ethnic groups — for the Chinese, from 54 per 100,000 to 81 per 100,000; for the Malays, from 18 per 100,000 to 36 per 100,000; and for the Indians, from 103 per 100,000 to 217 per 100,000. The all round increase in the attempted suicide rate could reflect a general increase in stress and a decreased ability to cope with it, or it could mean that the suicide attempt is becoming an acceptable and perhaps effective way of solving problems for some people. Interpersonal conflicts have been repeatedly found to be the major cause of suicide attempts in Singapore (9, 10) and perhaps some of the present day Singaporean female, who is better educated than 10 years ago is less willing to put with the problems that could have seemed acceptable a decade ago, and could be using the suicide attempt to solve these problems.

Method

By far the most common method of attempting suicide was self-poisoning which accounted for more than 95% of all the cases. This trend had not changed significantly since the 1971 survey as shown in the Table 13, except that larger numbers had resorted to taking an overdose of tablets.

	1971	1980
1 Self-poisoning	94%	95%
Tablets	57%	60%
Others	37%	35%
2 Self-injury	5%	5%
TOTAL	100%	100%

Method	Male	Female	Total	%
Tablet	294	734	1,028	60.5
Liquid	194	395	589	34.7
Self-injury	23	31	44	3.5
Jumping	7	9	16	3.5
Hanging	6	6	12	
Drowning	0	5	5	1.2
Gas	2	2	4	
TOTAL	526	1,172	1,698	99.9

Self poisoning by tablets was the most common method both in 1971 and 1980. The tablets comprised mainly psychotropic drugs, hypnotics and analgesics. The other types of "poison" used, included insecticides, detergents, bleaching liquids, salicylate liniments and medicinal mixtures. Other methods of self injury, consisting mainly of jumping, drowning, gas poisoning contributed to less than 5% (Table 14).

The most common method of suicide was by jumping from heights, both in 1969-71 and in 1980. This was particularly high for females (Table 15).

Method	Male	Female	Total	%
Jumping	57	70	137	60
Hanging	37	12	49	21
Poisoning	13	17	30	13
Others	11	3	14	6
TOTAL	128	102	230	100

Method	Male	Female	Total	%
Jumping	95	74	169	44
Hanging	88	35	123	32
Poisoning	20	30	50	13
Others	25	15	43	11
TOTAL	228	154	382	100

The incidence of jumping has been rising steadily from 2% in 1932 to 20% in 1962, 40% in 1970 and the present high of 60%. There seems to be a parallel relationship between jumping and the number of high rise flats available (see Table 17).

Table 17
PAST RECORDS OF SUICIDE BY JUMPING

Year	Jumping	% of population in HDB flats
1932	1.9	0
1947	4.6	1.5
1960	16.6	9.1
1965	23.0	23.2
1970	39.7	34.6
1974	47.5	42.7
1980	60.0	69.7

Comparing the trend of suicide by jumping in 1980 with 1969-71, it can be seen that while previously more males resorted to jumping (1.28 males to 1 female), the situation had reversed in 1980 (1.22 females to 1 male). Numerically, the largest number of cases by jumping in 1980 occurred in the younger age groups, among females (age 20-39) (see Table 18). The breakdown for age group was not available for the 1969-71 survey.

Table 18
PERCENTAGE OF SUICIDE BY JUMPING IN VARIOUS AGE GROUPS, 1980

Age Group	No. of cases by jumping	Total no. of suicides	Percentage of suicides by jumping
10 — 19	12	14	85.7
20 — 29	47	59	79.7
30 — 39	18	24	75.0
40 — 49	10	23	43.5
50 — 59	16	38	42.1
60 — 99	34	62	54.8
TOTAL	137	230	59.6

Table 19
MENTAL ILLNESS AND SUICIDE

	1969	1970	1971	1972	1980
All Suicides	188	185	230	236	230
Suicides with past admissions to Woodbridge Hospital	31	31	31	39	59
Percentage	16.5	16.7	13.5	16.5	25.7

Mental Illness and Suicide

In the 1980 survey, 25.7% of all cases of suicide had a past history of admission to a mental hospital (Woodbridge Hospital). This is about 10% higher than the study covering

the period 1969-72(12) which has an average of only 15.8%. ($X^2 = 8.06, p < 0.1$) (see Table 19).

CONCLUSION

For attempted suicides, the rate has gone up by 30% compared to the last survey 9 years ago for 1971. The breakdown for sex, age group and race has not changed significantly. The Indians continued to show the highest rate, particularly the Indian females whose rate reached the height of 344 per 100,000. The sex ratio has remained unchanged at 1 male to 2.2 females for both 1971 and 1980. The peak age group was 20-29 years for 1971 and 1980. Self poisoning was till by far the most frequent method and there was a slight increase in the use of tablets for the 1980 group.

For suicides, the rates have remained constant between 9 to 11 per 100,000 over the last 30 years. It was 10.9 per 100,000 in the 1969-71 study and 9.5 per 100,000 in 1980. The rate had risen slightly for the Chinese and Indians and dropped a little for the Malays whose rate was about one-tenth that of the Chinese and Indian. The male to female ratio has dropped a little from 1.5 male/female in 1969-71 to 1.3 male/female in 1980.

The most common method was jumping from heights which has been rising steadily over the past 50 years reaching its highest in 1980. Unlike previous studies, in 1980 there were more females committing suicide by jumping than males. Jumping was also more frequent among the younger age groups (20 to 39 years). Compared to a study covering 4 years from 1969 to 1972, there was a larger percentage of suicides having a history of past admissions to Woodbridge Hospital.

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