

POST MORTEM SURVEY OF SUICIDES IN SINGAPORE

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INTRODUCTION

The purpose of this review is to survey the suicide pattern for a ten year period in Singapore, from 1955-1964 inclusive. The last review was made by H.B.M. Murphy, who studied all suicide cases in 1954 from a social aspect (Murphy, 1954).

As Singapore is a cosmopolitan country, with four major racial groups, analysis of these data provide some interesting observations. Singapore's racial composition is shown in Fig. 1. Under "Indians", the Pakistanis, Ceylonese and Indians are grouped together, whilst Eurasians, Europeans and others are categorised as "others". Our analysis will follow this racial grouping.

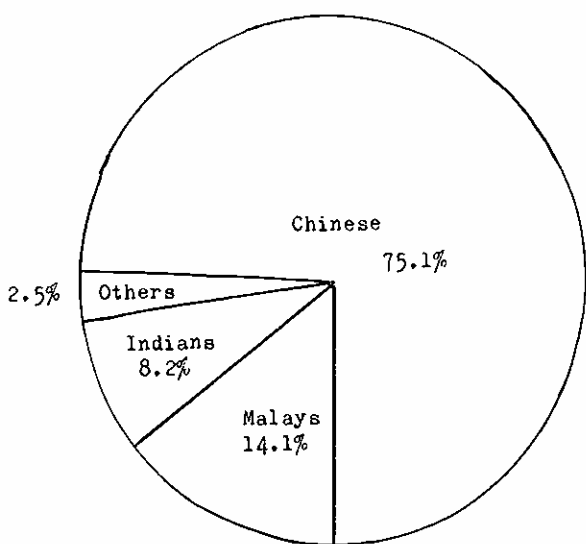


Fig. 1. Singapore population by race (1965).

MATERIAL

The figures obtained were from the post mortem reports of the Department of Pathology, Singapore. These were complete and reliable as the homicide and suicide cases were all invariably presented for autopsy during the period under study. The only difficulty encountered was in the cases of drowning. Bodies found in the sea and rivers were included in "suicide by drowning", only when a story suggestive of suicide was obtained and when foul play and accident had been excluded, but any suggestion that it might be accidental, the case was excluded.

Despite these precautions, the number of suicides reported in this article was slightly higher than that reported in the "Epidemiological and Vital Statistics Report" by the W.H.O. This was because "open verdicts" made by the coroner would not be included in the W.H.O. report (Table I).

TABLE I

NUMBER OF SUICIDE CASES

Year	W.H.O. Report	Department Records
1959	169	175
1960	141	151
1961	144	159
1962	139	162
1963	155	179

SUICIDE RATE

W.H.O. expressed the suicide rate as that per 100,000 population. In 1961, Singapore's suicide rate was 9.6 ranking in the middle of their crude suicide rate in various countries (Table II). However, the Singapore average suicide rate for the ten year period under review was 10.2, as shown in Table III.

In the past 10 years, only 6 cases of suicide were in children under 15 years of age. Two died as a result of ingestion of caustic soda, and the others were found hanging.

Every one of these six cases had a suicide note to substantiate their case. As suicides occurring in the under 15 years age group were rare, it was more accurate to express the suicide rate as per 100,000 of population at risk, or population above 15 years. This was statistically more significant in considering rates in Singapore as Singapore's population is essentially a young one. For example, the total suicide rate as seen in Table III and Fig. 2 showed a statistically significant decline ($t=3.2, p=0.01$), but when the rate per 100,000 at risk was con-

TABLE II

CRUDE SUICIDE RATE IN VARIOUS COUNTRIES IN 1961

Countries	Per 100,000
Egypt	0.1
Ireland	3.2
Greece	4.3
Italy	5.6
Ceylon	9.1
Singapore	9.6
U.S.A. (Total)	10.4
Hong Kong	10.6
Australia	10.6
England	11.2
Taiwan	16.4
Japan	19.6
West Berlin	37.0

TABLE III

SUICIDE RATE PER 100,000 POPULATION

Year	Male	Female	Total
1955	15.3	9.0	12.3
1956	13.2	9.1	11.3
1957	14.9	7.5	11.4
1958	13.5	4.4	9.2
1959	13.9	8.0	11.1
1960	11.6	6.7	9.2
1961	12.4	6.2	9.6
1962	11.4	7.1	9.4
1963	14.2	5.6	10.1
1964	12.5	4.8	8.8
MEAN	13.3	6.8	10.2

t = 3.2
 p = 0.01
 (Therefore significant decline)

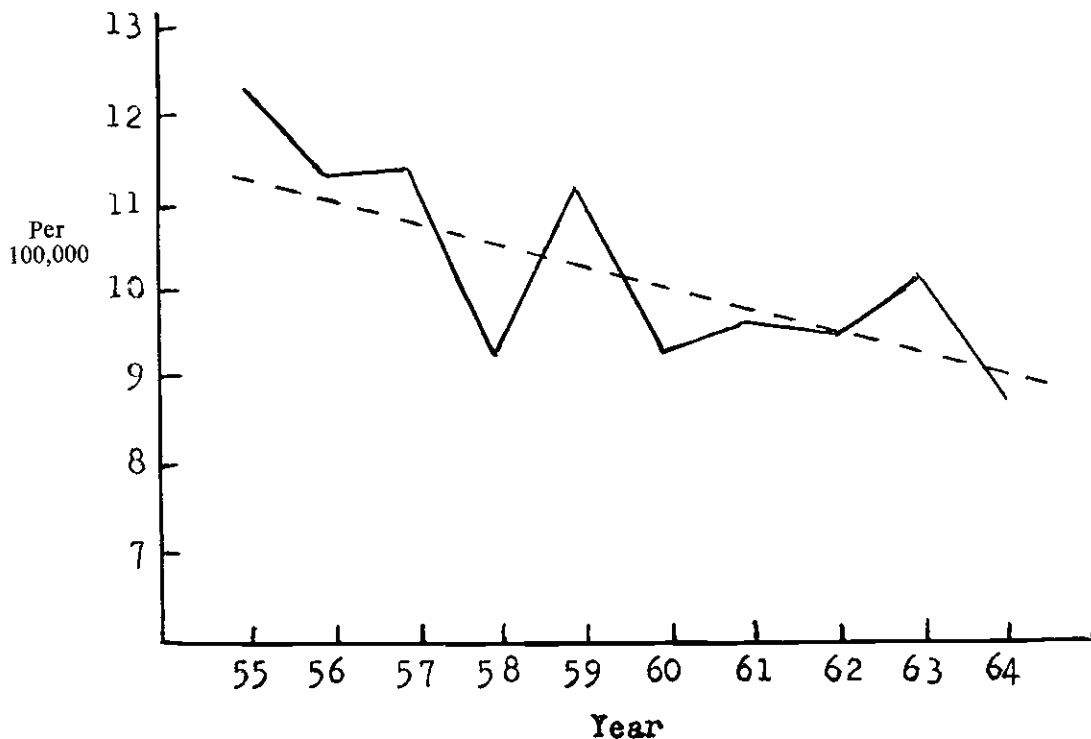


Fig. 2. Total suicide rate per 100,000 of population.

TABLE IV
 SUICIDE RATE PER 100,000 OF
 POPULATION AT RISK

Year	Male	Female	Total
1955	—	—	—
1956	—	—	—
1957	25.7	13.3	20.0
1958	23.7	8.2	16.5
1959	25.0	15.0	20.3
1960	21.2	12.7	17.2
1961	22.8	11.9	17.7
1962	20.9	13.6	17.4
1963	25.7	10.6	18.9
1964	22.4	8.9	16.0

$t = 1.3$

$p < 0.3$

(Therefore no significant decline)

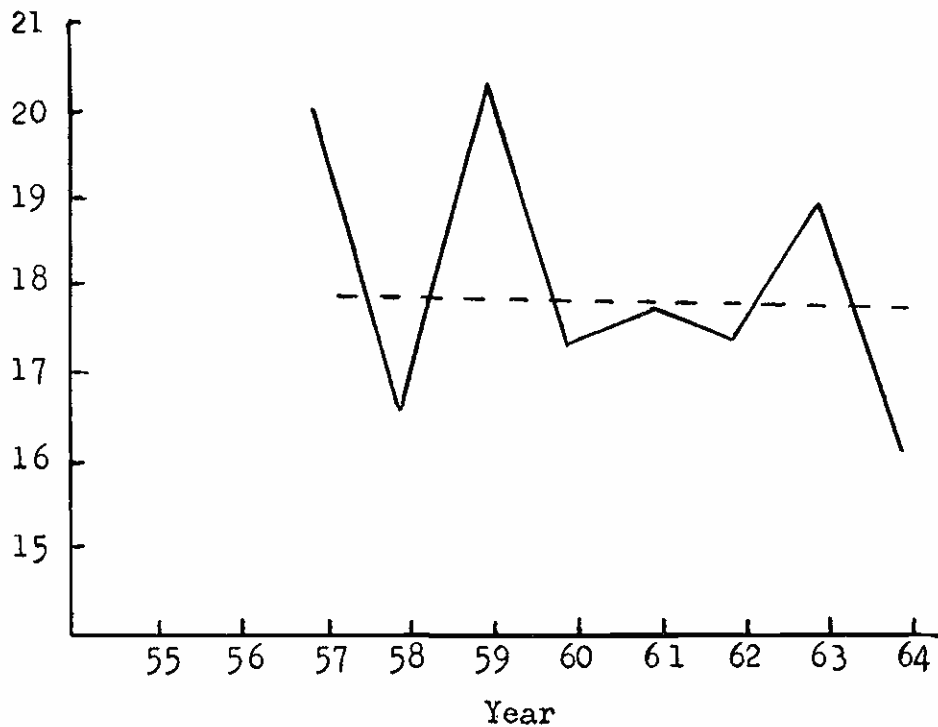


Fig. 3. Suicide rate per 100,000 of population at risk (i.e. 15 years and above).

TABLE V
 SUICIDE RATE PER 100,000 OF EACH
 RACIAL GROUP IN SINGAPORE

Year	Chinese	Indians	Malay	Others
1955	13.8	16.4	2.9	25.0
1956	11.8	20.6	1.1	56.0
1957	12.8	16.9	0	45.9
1958	10.3	12.4	1.5	17.6
1959	12.9	14.9	0.5	8.9
1960	10.8	8.7	2.2	7.9
1961	10.6	13.2	3.4	0
1962	11.4	5.6	1.2	14.0
1963	12.1	6.2	2.0	6.7
1964	10.5	6.0	1.6	19.9
MEAN	11.7	12.1	1.6	18.9

t = 1.9
 (Therefore no decline)
 t = 5.6
 p > 0.001
 (Therefore significant decline)

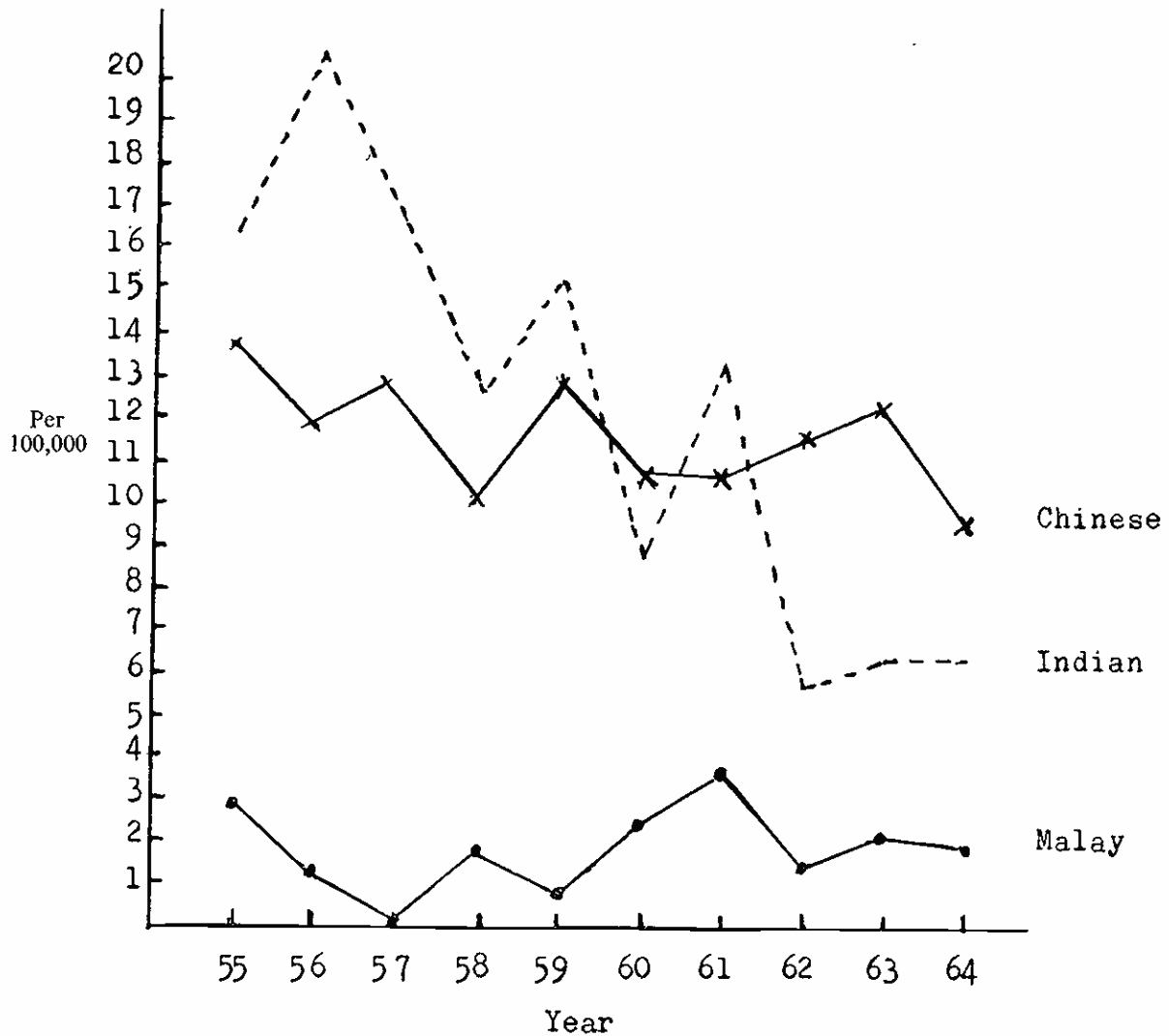


Fig. 4. Suicide rate per 100,000. According to race.

sidered, it was seen that there was actually no decline in the suicide rate in Singapore (Table IV and Fig. 3). Table V and Fig. 4 showed the suicide rates for the four races.

It was difficult to analyse the suicide rate of the 'Others' as this group is comprised of several races, although mainly Caucasians. The English made up a large proportion of the Caucasians, and we could further subdivide the English population into a civilian and a military community. Murphy has shown that the suicide rate for the civilian Caucasian population was 17.7 per 100,000, 60 per 100,000 among military officers and 7 per 100,000 in other military ranks. We have made no provision for these differences in our analysis. On the other hand, comparing the Chinese population in Hong Kong, the suicide rate there in 1954 was 23.5 per 100,000 population at risk, whilst the mean suicide rate of Singapore Chinese was 11.7 for the 10 years under review.

The Malays had the lowest rate of suicide, the mean rate being 1.6. It is of interest that the lowest suicide rate in the W.H.O. survey in 1961 was also in another Muslim country, namely Egypt. Unfortunately there were no data from India, but there was an interesting pattern of decline amongst the Indians in Singapore in these 10 years under discussion. In 1955 the rate amongst the Indians was 16.4 and this has dropped to 6.0 in 1965, quite unlike the other three groups which had a fairly constant rate throughout the decade. This could have been due to the Korean War. The Korean War (1950) created a boom in the rubber market, and there was an influx of Indians into Malaya in 1951 as reported in the Annual Report of the Federation of Malaya (1953). Truce was declared in 1953, and the rubber boom subsided abruptly. The Indians then promptly came to Singapore from Malaya in search of jobs. This period coincided with the beginning of the 10-year period under review. This "stress" on the Indian community probably contributed to the high suicide rate. Similarly P.M. Yap also reported that the high rate of suicides in Hong Kong coincided with the exodus of Chinese from mainland China into Hong Kong (Yap, 1958). These refugee Chinese in Hong Kong were also undergoing a similar "stress" situation as the Indians in Singapore. There were no such "stress" factors with regard to the Malays and the Chinese who had settled in Singapore for several generations.

AGE AND SEX

Here, Singapore is no different from the World pattern of 2:1 ratio of male to female, despite her multi-racial society (Table VI). In the earlier age group of 15-35, the female suicides do not seem to lag behind her male counterpart in the same age group (Fig. 5). From 40 years onwards, there was a distinct number of elderly males who took their own lives compared to the elderly females. And again, unlike the pattern seen in attempted suicide, successful suicides increased with the ages of both sexes.

TABLE VI

MEAN SUICIDE RATE (1955-1964) FOR MALE AND FEMALE ACCORDING TO RACIAL GROUPS

	Male	Female	Ratio
Chinese	15.2	8.2	2:1
Indian	15.1	5.8	2.6:1
Malay	2.5	0.7	3.6:1
Others	27.5	10.9	2.5:1

TIME OF YEAR

There is a common belief among the Chinese that there are distinct periods in which violent death is common. This was not borne out by our present study in Singapore. Chinese New Year falls at the end of January and the beginning of February. Cheng Meng or the "Feast of the Dead" is on the 5th of April, whilst the "Dragon Boat Festival" is on the 5th day of the 5th moon. The 15th day of the 8th moon is the Moon Festival, and the 7th month is reputed to be the worst month, being not only the "Hungry Ghost" month but also the festival of the "Cowherd and the Weaver". This latter festival is on the 7th day of the 7th moon, and lovers meet on this night. Table VII and Fig. 6 showed that the suicide cases were quite equitably distributed throughout the Chinese Lunar months and there was no concentration in the respective festive periods.

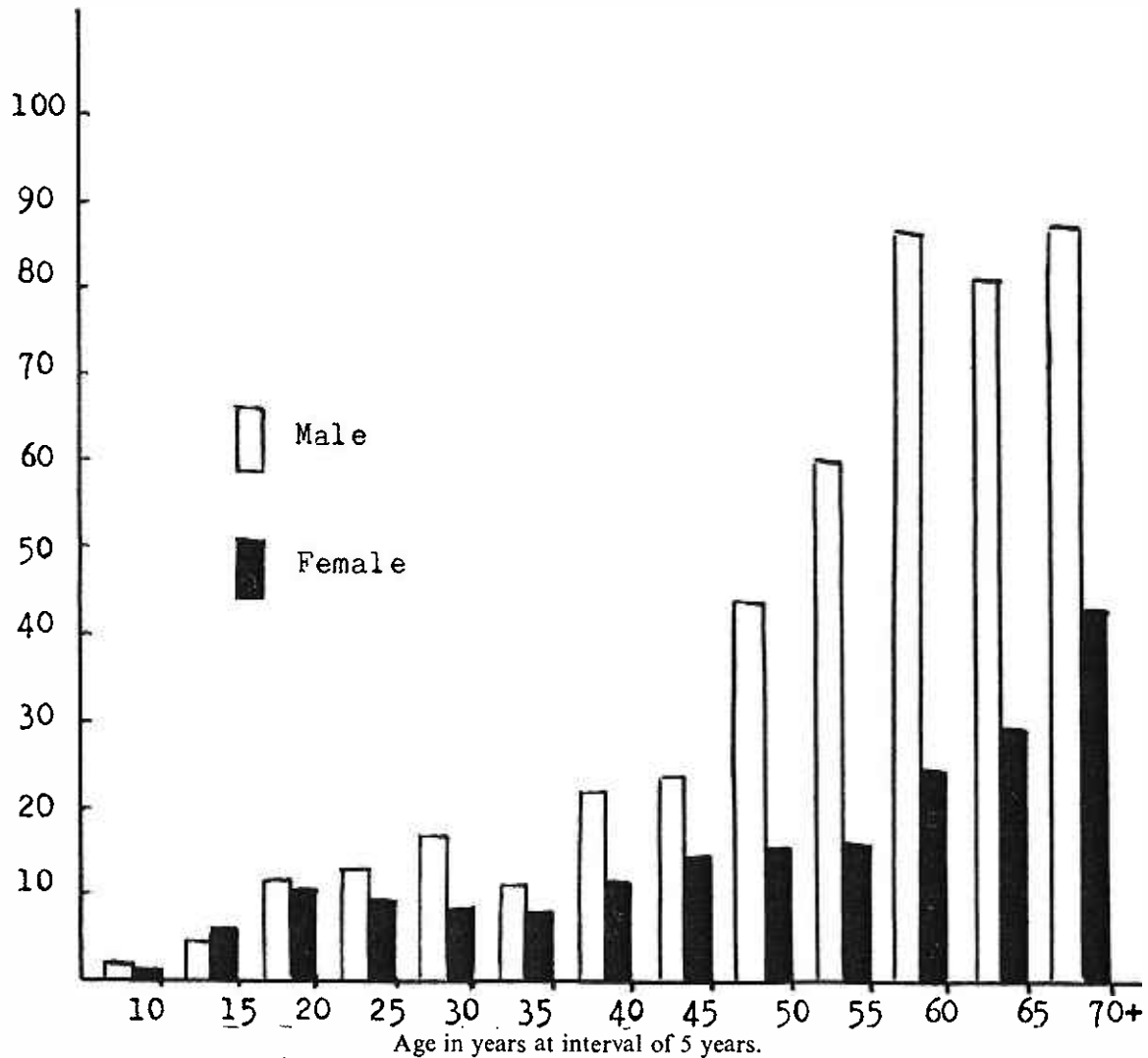


Fig. 5. Suicide rate per 100,000. According to sex and age.

TABLE VII

AVERAGE NUMBER OF SUICIDES BY THE CHINESE IN EACH LUNAR MONTHS (1955-1964)

Lunar Months	No. of Cases	Chinese Festivals
First	11.9	Chinese New Year
Second	12.3	
Third	9.4	
Fourth	13.7	Cheng Ming or "All Souls' Day"
Fifth	11.6	Dragon Boat Festival
Sixth	11.1	
Seventh	11.8	Kuei Chieh or "Festival of Ghosts"
Eighth	10.9	Moon Festival
Ninth	11.0	
Tenth	11.3	
Eleventh	9.8	
Twelfth	11.1	

$\chi^2 = 1.25$
(Therefore no significant variation)

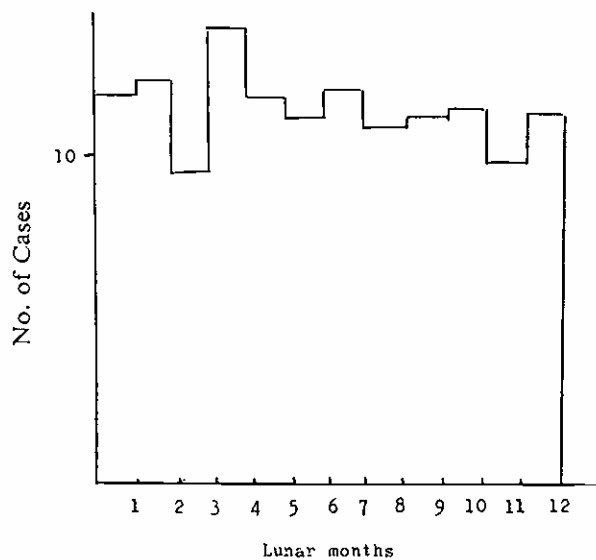


Fig. 6. Average number of suicide cases in each Lunar month for the ten-year period.

It is however, well documented that there are peaks of suicides in the Western World during festive seasons, e.g. Christmas, Easter and New Year.

The suicidal pattern is also seen to vary markedly in the Western countries with the seasons, the frequency being much higher in summer and lowest in spring. Even in the subtropical island of Hong Kong, P.M. Yap noticed a peak of suicides during the summer (June) (Yap, 1958). In Singapore however, the suicide rate is evenly distributed throughout the seasons, which are monotonously the same all year round (Table VIII and Fig. 7).

TABLE VIII
AVERAGE NUMBER OF SUICIDE CASES
IN EACH MONTH (1955-1964)

	No. of Cases
January	11.3
February	13.7
March	14.8
April	11.9
May	14.7
June	12.8
July	14.5
August	13.2
September	11.4
October	13.5
November	11.7
December	12.0

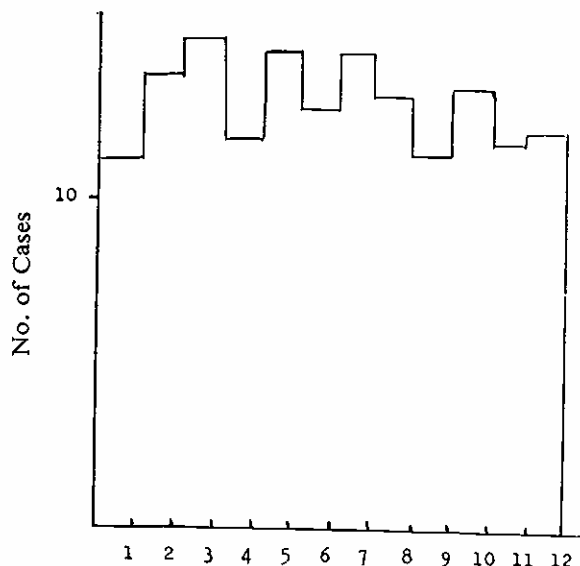


Fig. 7. Average number of suicide cases in each month for the ten-year period.

METHODS OF SUICIDE

Very little originality was displayed in the modes of suicide in Singapore. By and large it depended almost solely on the availability of the means (Table IX and Fig. 8).

Hanging was the most popular method. It accounted for 66.9% of all the suicides (Fig. 8). In the past 10 years, this method has held first place, constantly accounting for about 60% to 70% of the total.

The second commonest method was drowning. However, a proportion of drowning cases had no clear cut evidence of suicide. Singapore is a very small island, and the sea is accessible to all and sundry. Therefore, the figures tabulated must be accepted as rough estimates, and were probably lower than the real figures.

The third commonest method of suicide was corrosive poisoning with jumping from height a very close fourth. Actually prior to legislation passed to prevent caustic soda from being sold across the counter in 1958, this means of suicide was rife. Suicide by poisoning in 1955 was 23.3% as compared to a mere 11.3% in 1964. Jumping from height had increased from 7.5% in 1955 to 20.7% in 1964, in parallel to the increase of multi-storied buildings in Singapore. Figures for corrosive poisoning seemed to have found its baseline, but jumping from height will certainly continue to increase with more multi-storied flats being built (Fig. 9).

Over-dosage from drugs, which is an index of a society's sophistication is very slowly but surely on the rise. The term "drugs" used to include prescribed medicines for ingestion, whilst "poisons" include non-medicinal substances as well as liquids for topical usage, e.g. Oil of Wintergreen, insecticide. In the early part of the decade under study, a mixed variety of drugs used to be found and even a case of PAS overdose was reported. Librium used to be in vogue when it was prescribed more freely. It would be interesting to see if there is a preference for any particular drug in cases of over-dosages now as compared with 10 years ago, but the stumbling block here was that at the beginning of this 10-year period, the toxicology reports were not complete. Oil of Wintergreen, insecticides are still being used, but tuba root which was used by fishermen to stun fish is now banned in Singapore.

The knife had its followers but they were few and far between. Suicide by firearms was confined to those who had access to them, i.e. the police and military personnel. There were very few who combined two or three methods of suicide. The last three varieties contributed to only about 4.5% of the total number of suicides (Fig. 10).

TABLE IX
PERCENTAGES OF SUICIDE CASES BY THE VARIOUS METHODS

	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Hanging	40.4	32.3	47.3	41.7	47.4	47.0	49.1	32.7	41.3	36.3
Jump	7.5	11.0	12.1	11.1	15.4	13.2	10.0	21.0	20.1	20.7
Corrosive	27.3	23.2	18.1	7.9	12.0	15.9	8.8	14.8	8.4	11.3
Poisons	0.6	5.2	3.0	5.8	4.6	5.3	3.1	3.1	3.3	4.4
Drugs	3.7	3.9	2.4	2.1	1.7	4.0	2.5	6.8	2.8	5.0
Knife	2.5	4.5	1.2	5.0	1.7	2.6	3.8	1.9	3.3	1.9
Gun	1.2	5.2	1.8	1.4	1.1	0.7	1.9	1.2	0	1.3
Drowning	12.4	16.1	11.5	22.0	16.0	11.3	20.1	18.5	20.1	18.1
Others	4.3	1.3	3.0	2.9	1.7	1.3	1.3	1.9	1.1	0.6
Combine	0	2.6	0.6	0	1.7	1.3	0	1.9	1.1	1.3

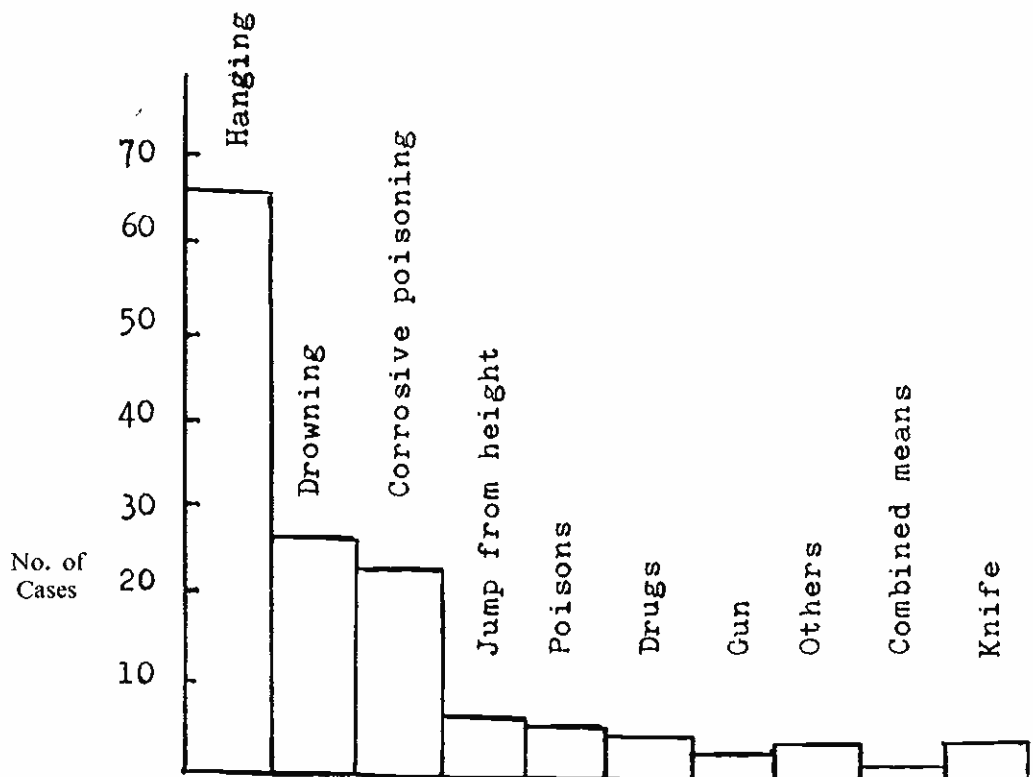


Fig. 8. Average number of suicide cases in each year by the various methods (1955-1964).

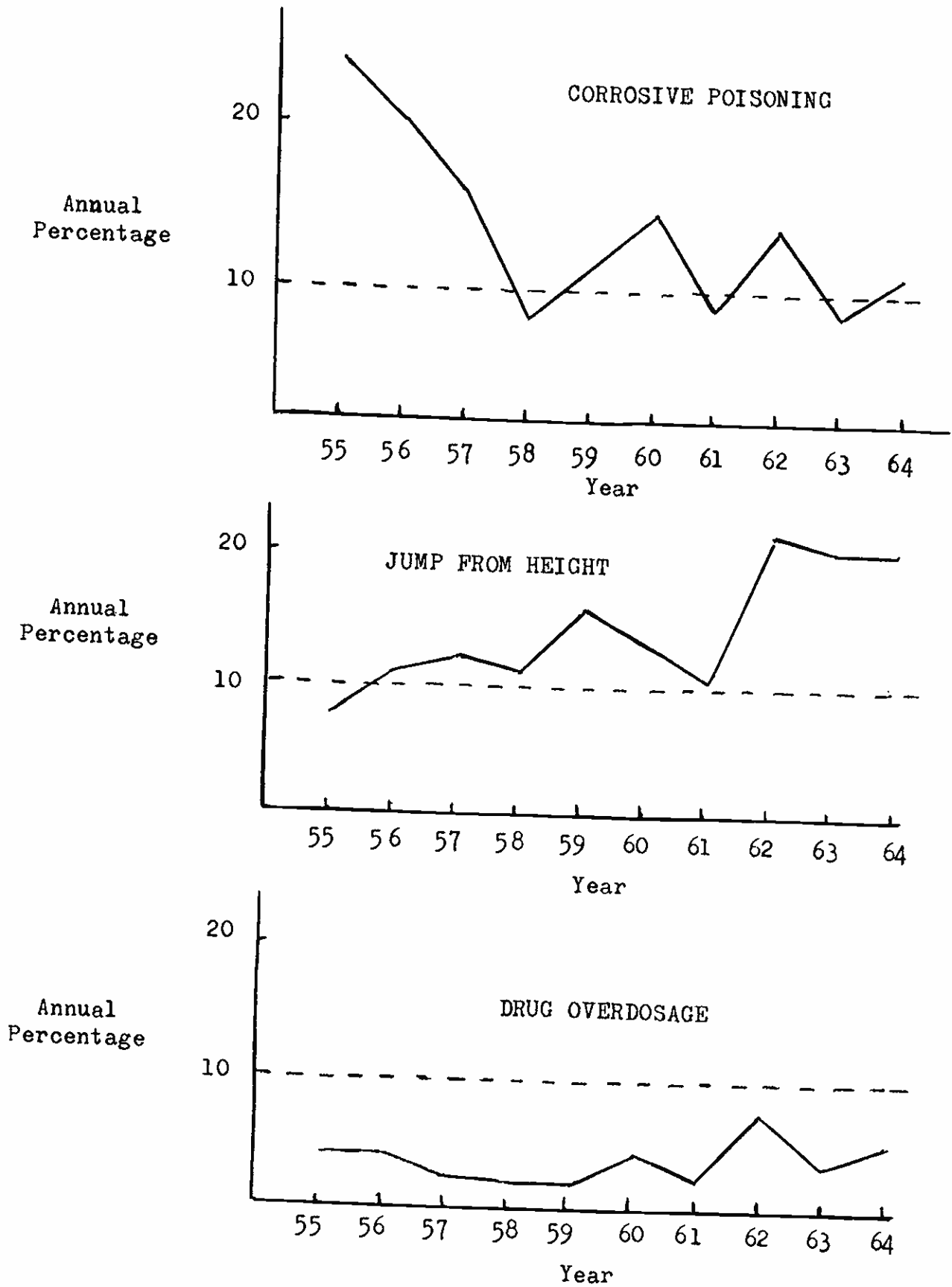


Fig. 9. Annual percentage of cases of suicide by the three methods.

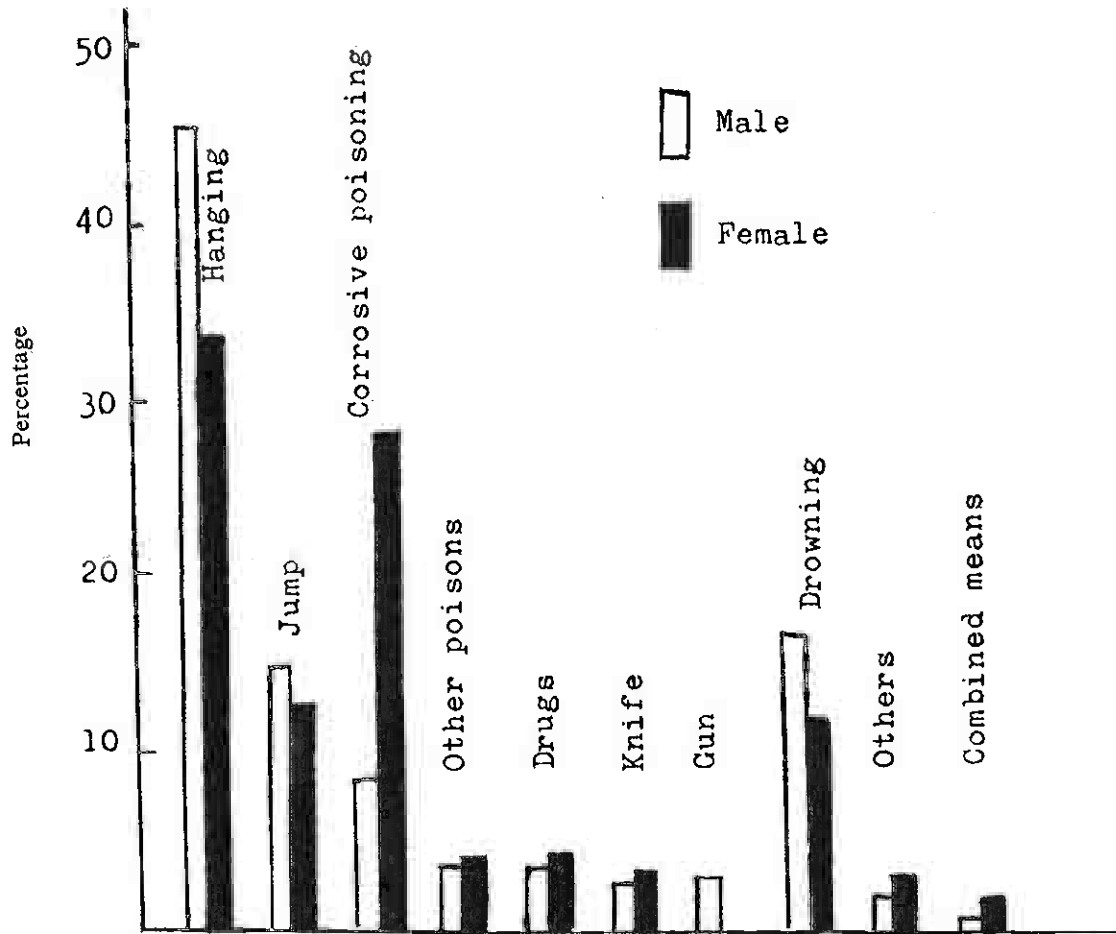


Fig. 10. Methods in suicide for the male and female in percentage.

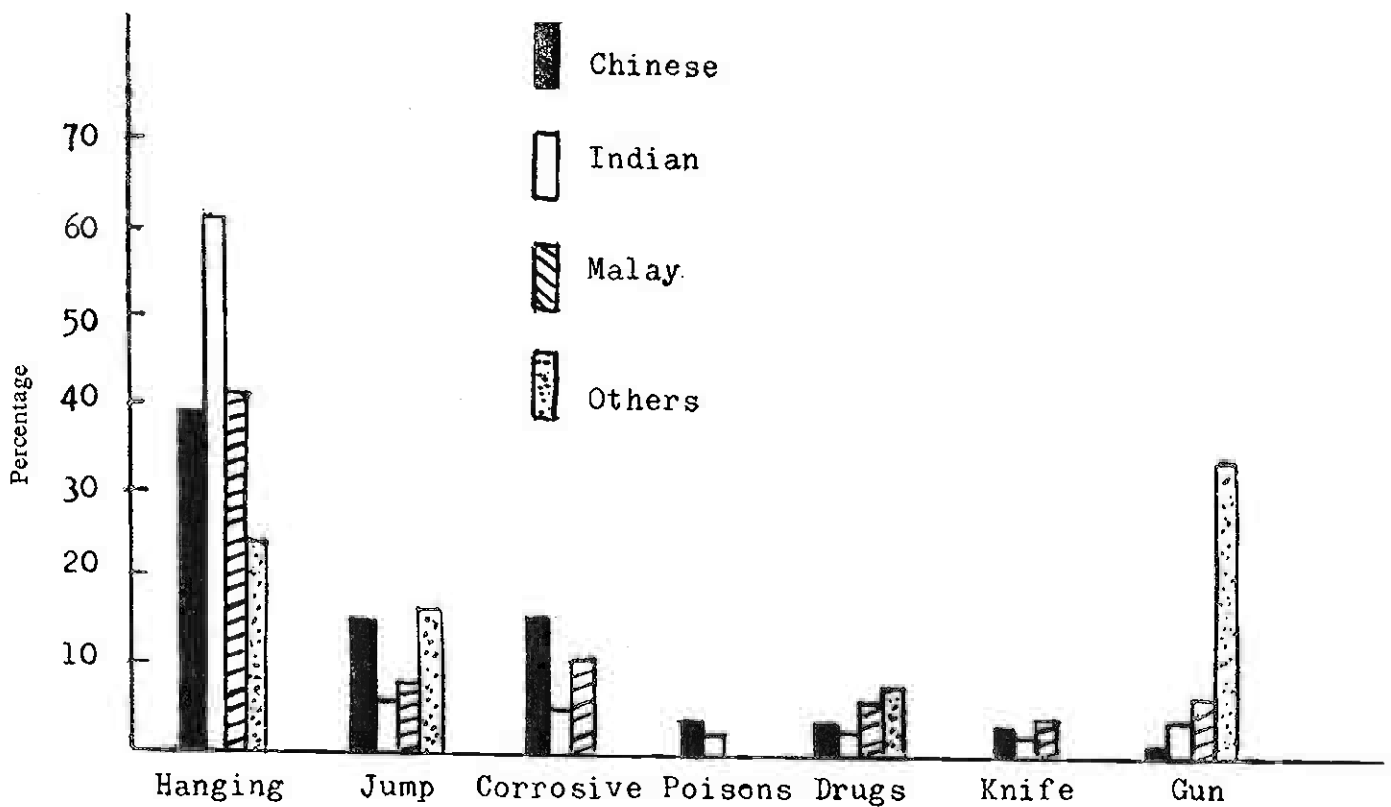


Fig. 11. Methods in suicide for the four racial groups.

METHOD AND SEX

There was a definite predilection for poisoning with the female sex, and the knife was also a trifle more popular with the gentler sex (Fig. 10).

METHOD AND RACE

Hanging headed the list in suicidal methods for all four races, and it appeared that the Indian community liked this method best of all (Fig. 11). With the Chinese, jumping from height and corrosives vied for second place, whilst the firearm was the commonest weapon amongst the Caucasians (Fig. 11).

CONCLUSION AND SUMMARY

The suicide rate for the ten year period from 1955 to 1964 has been presented and tabulated under various headings of race, sex, age and time of year and methods.

The pattern of suicide in Singapore was by and large different from most countries. The absence of seasonal variations was a notable feature. The mode of suicide demonstrated that the choice of methods depended on the availability of the means. Age groups preponderance was the same as elsewhere. Racial differences were probably due to social and ecological influences.

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