

# CIGARETTE SMOKING IN SINGAPORE

S C Emmanuel, A J Chen, A Phe

SING MED J. 1988; 29:119-124

## INTRODUCTION

There can no longer be any doubt among informed people that in any country where smoking is a common practice, it is a major and certainly removable cause of ill health and premature death. The diseases most commonly associated with cigarette smoking are lung cancer, bronchitis and emphysema, ischaemic heart disease and other diseases of the vascular system. Between them, they account for 80% of the excess mortality from smoking<sup>1</sup>. Mortality from these diseases are also of grave concern in Singapore, where coronary heart disease and lung cancer rank among the top killers in the country. Overall, lung cancer is the most common type of malignancy in Singapore. Recent statistics show that Singapore men have a higher incidence rate of this disease than men of any other country in Asia. International comparison also shows that Chinese Singapore women have one of the world's highest rates, with only women in Hawaii and the Maoris in New Zealand registering higher levels<sup>2</sup>.

The Government is concerned about this, and has continued its efforts to curtail smoking by educating the public on the ill effects of smoking and by instituting prohibitive measures against smoking. In 1979, the Ministry of Health mounted a large scale National Health Campaign Against Harmful Lifestyles, followed by a more specific campaign against smoking the year after. Intensive follow-up health education activities were planned for on-going "Smoking And Diseases" campaigns. Other measures undertaken by the Government have been as follows:

- (i) the prohibition of cigarettes or tobacco advertisements in the press as well as over the radio and television (wef 1970);
- (ii) the prohibition of smoking in closed auditoriums, cinemas, theatres, public lifts and public buses (wef 1970);
- (iii) insertion of warning labels "Smoking Can Damage Your Health" on all cigarette packets (wef 1980);
- (iv) increasing the excise duty on cigarette manufacture from \$9 per kilo to \$14 per kilo (wef 1983);

- (v) the prohibition of advertisements for services that carry cigarette or tobacco brand names (wef July 1986);

## METHODOLOGY

The information on Cigarette smoking levels in the Republic for this paper was gathered during the Labour Force Survey (sample size = 92,500) conducted in July, 1984. A comparison study were then made with past national data on smoking taken from two surveys conducted at around the same period, the 1974/75 National Hypertension Survey (sample size = 4,500) and the 1976/77 First National Survey on Morbidity (sample size = 11,539).

## FINDINGS

### 1. Trends in Smoking

Figure 1 illustrates trends in the consumption of tobacco per capita in Singapore between 1969 and 1983.

It can be seen that there was a slight decline in the trend in consumption in the '70s. This illustrates that the measures imposed by the Government during that period, although having some dampening effect by containing the rise in tobacco consumption, did not achieve the desired objective of reversing the trend. It must be admitted however that it is difficult to assess the true nature and extent of the impact of the anti-smoking measures implemented on tobacco consumption itself in the Republic as the period reviewed was one associated with a steady rise in the number of tourists visiting the country and foreign workers granted work permits to perform manual and semi-skilled jobs. Figure 1 also depicts that the trend points towards a gradual incline again in the early '80s followed by a second phase of decline.

The 1984 survey results revealed that 19% of Singaporeans aged 15 years and above were current smokers (Table 1). One-third (34.9%) of males and 3.4% of females over the age of 15 years were smokers. These

Research & Evaluation Department  
Ministry of Health HQ  
College of Medicine Building  
16, College Road,  
Singapore 0316.

S C Emmanuel, MBBS, MSc (PH)  
Director

A Phe, B Sc (Hons), MSc (Statistics)  
Statistician

Planning and Development Division  
Ministry of Health

A J Chen, MBBS, DPH, DTM & H, DCH  
Assistant Director of Medical Services  
(Planning & Development)

TABLE 1  
PERCENTAGE OF CURRENT  
SMOKERS BY SEX,  
1977 AND 1984

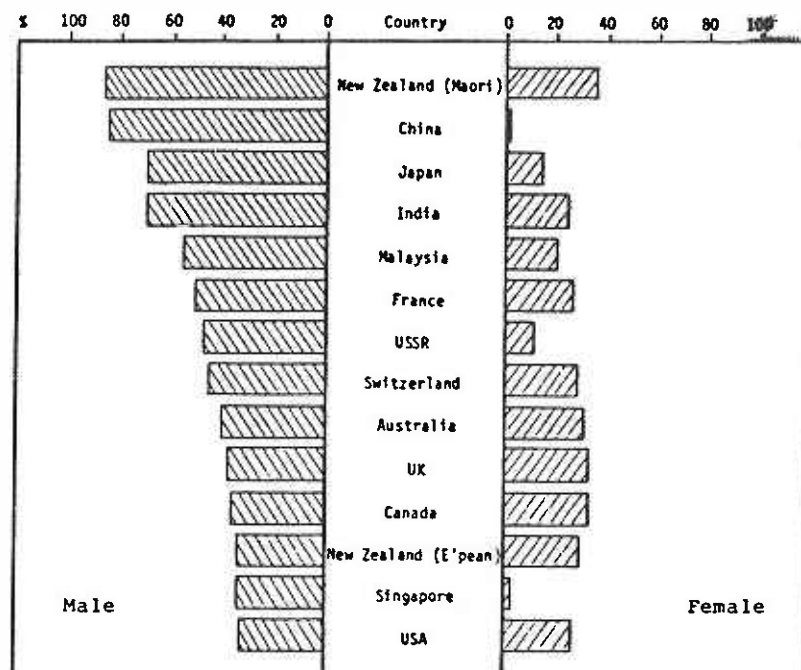
Sex	1977	1984
Male	42.0	34.9
Female	4.5	3.4
Total	23.0	19.0

Fig. 1 Consumption Of Cigarette Per Capita (1969–1985)



Source : Customs and Excise Department, Singapore

Fig. 2 Percentage Of Adult Smokers (Circa 1980)



Source : WHO Smoking Control Unit

results indicate that the overall smoking level in the Republic is definitely on the decline, compared with the picture determined 7 years ago, which showed that 23% of the population were smokers. The decline in the overall smoking level is a highly significant one. It is reassuring to note that the decline has taken place in both sexes, as the proportion of smokers in each category was higher previously, with 42% of males and 4.5% of females found to be smokers then.

On an international ranking, Singapore's current rate of smoking is relatively low when compared with that of most countries, even when the level within each gender subgroup is considered (Figure 2).

## 2. Profile of Cigarette Smokers

### 2.1 Age and Sex

The 1984 results showed once more that at all ages, men were far more likely to be current smokers than women. It is interesting to note that the proportion of current smokers in each age group rises with age, until it reaches its peak in the 65-69 age group for men and the 70-74 age group for women, where the rates registered were 47.9% and 12.6% respectively. The trend then reverses to depict a negative relationship with age. This is illustrated in Figure 3.

One possible explanation for this is that death rates are well documented to be uniformly higher amongst smokers than amongst non-smokers, in both sexes and at whatever age at death, with the excess mortality among cigarette smokers being proportionately greater at ages 45-54 years<sup>1</sup>. Therefore, those who smoke die off earlier than non-smokers in the older age groups, leaving fewer current smokers in each of these age groups. Another related finding is that the expectation of life at birth, computed for males and females for the censal Year of 1980, is seen to have risen to 68.8

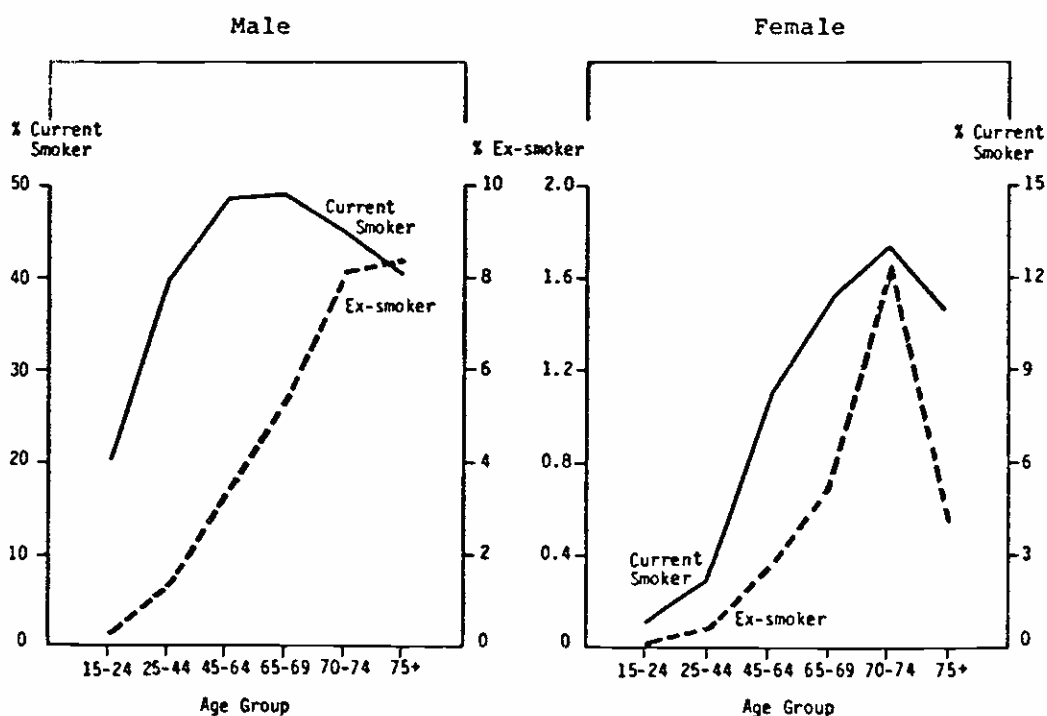
and 72.1 years respectively. Part of this rise could be attributed to the steady increase in the number of persons noted to give up smoking (ex-smokers) as people become more and more aware of the health hazards associated with smoking. This once again could have resulted from the widespread health education and other anti-smoking activities undertaken over the last decade and a half in the country.

A comparison of the age-specific smoking rates in 1977 and 1984 shows that the decline in the smoking rates has taken place in every age group (Table 2).

When the age-specific smoking rates of Singapore men are matched against those of Canadian and Australian men, for whom comparative data is available, it can be seen that the smoking rates are much lower among young adult Singaporeans, ie those in the 15-24 years age group (Figure 4).

The Singapore rates then rise quickly to become almost comparable with that of the other two countries among the 25-44 year olds, and then go on to exceed the Canadian and Australian rates in the older age groups. The explanation for this could be attributed to the several reasons. Firstly, that the anti-smoking measures operative in Singapore were implemented only 15 years ago as compared with the much longer period over which anti-smoking programmes have been effected in the West. The shorter period of exposure for the Singapore programme could therefore have succeeded in discouraging more of the young from taking up the smoking habit, but would have had little impact on the older age groups who would have already established their habits by then. Another reason could be that the anti-smoking programme in Singapore addresses itself mainly to preventing non-smokers from taking up smoking and has done little by comparison to convince smokers themselves to give up their habit. This is an area for consideration for the future.

Fig. 3 Male/Female Current Smokers And Ex-Smokers By Age Group

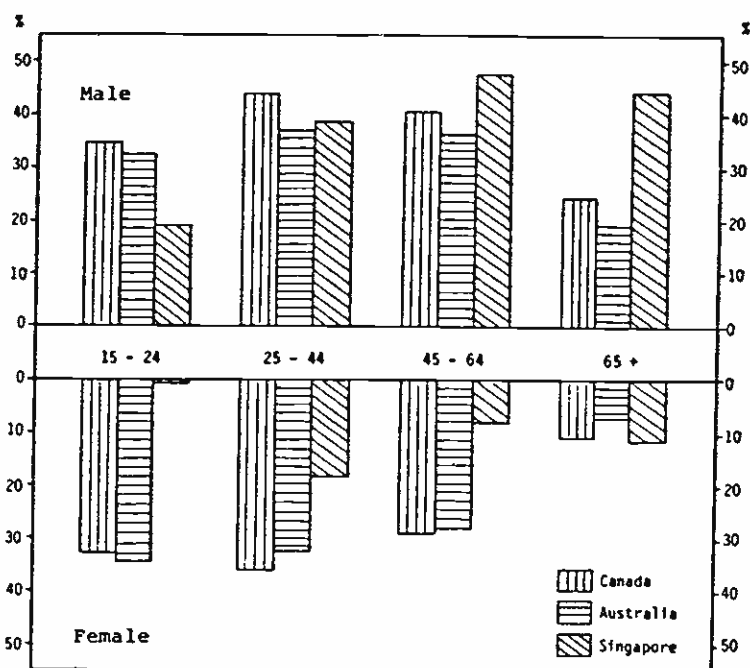


**TABLE 2**  
**CHANGE IN SMOKING RATE, BY AGE GROUP, 1977 AND 1984**

Age Group (Year)	Percentage of Smokers		Percentage Change	Significance of difference
	1977 <sup>a</sup>	1984 <sup>b</sup>		
15 - 19	6.8	5.1	- 25.0	P << 0.001
20 - 24	18.6	14.3	- 23.1	P << 0.001
25 - 29	20.4	18.3	- 10.3	P << 0.001
30 - 34	24.4	19.2	- 21.3	P << 0.001
35 - 39	25.3	21.0	- 17.0	P << 0.001
40 - 44	30.5	23.1	- 24.3	P << 0.001
45 - 49	35.4	24.6	- 30.5	P << 0.001
50 - 54	36.1	29.0	- 19.7	P << 0.001
55 - 59	42.6	30.3	- 28.9	P << 0.001
60 - 64	39.6	28.9	- 27.0	P << 0.001
65 - 69	39.7	28.3	- 28.7	P << 0.001
70 & above	27.6	24.2	- 12.3	P << 0.001
Total	23.0	19.0	- 17.3	P << 0.001

a First National Survey on Morbidity in Singapore, 1976/1977  
b Labour Force Survey, 1984

**Fig. 4** Current Smokers By Age and Sex  
Singapore, Canada And Australia



Source : (1) Smoking habits of Canadians. 1965-1979 -  
Canada : Health Services and Promotion  
Branch, Health and Welfare, 1980

(2) Provisional Statistics Series, N-Z Census  
of Population and Dwellings, 1981 -  
Wellington : Dept of Statistics, 1981

## 2.2 Ethnic and Educational Level

The picture seen today is that smokers tend to belong more to the lower educational groups (Table 3). Men who never attended school had the highest current smoking rate of 53%. The proportion of current smokers then fell steadily from 49% among those who did not complete primary school to 39% among those who had completed primary school. The lowest level of current smokers, at 16%, was seen among men who had post-secondary education. This rate should be related to the overall current smoking rate among males, which was computed to be 35%. It can be seen therefore that education appears to be an important factor related to a man's likelihood to smoke.

Smoking levels among women of different educational groups, although overall very much lower than that for men, showed a similar pattern. The relatively high smoking levels seen among women who never attended school is probably due to the high smoking rates among the older immigrant Chinese females in the population. What is a notable finding from the survey is that tertiary educated women had a one and

a half times current smoking rate (4.3%) compared with women who had post-secondary level education (2.8%). With the rising levels of education in the Republic and the adverse experience of the developed countries with regards to smoking among educated women, this trend in Singapore should be followed up with some concern.

The pattern in the smoking behaviour of persons of different educational levels in Singapore as a proxy indicator of their socio-economic group, is similar to findings seen elsewhere in the world, among the more developed countries.

Throughout the years it has been shown that smoking rates in Great Britain, for example, are clearly related to social class, being higher among the lowest socio-economic groups (Figure 5).

The 1984 results further reinforced the earlier findings of ethnic differentials in the smoking rates seen in this country. Malays, with a smoking rate of 24.4%, continued to have the highest level of smoking followed by the Chinese and Indians who currently register a smoking rate of around 18%.

This picture illustrates once again a declining trend, as the smoking rate among Malays in 1977 was recorded at 27% while that among Chinese and Indians was around 22%. (See Table 4)

**TABLE 3**  
**SMOKERS BY EDUCATIONAL LEVEL AND SEX, 1984**

Educational Level	Smoking Rate Per 100 Popn. aged 15 Years And Above		
	Male	Female	Total
Never Attended School	52.8	8.6	21.2
Did Not Complete Primary School	48.8	3.7	27.8
Did Not Complete Secondary School	38.6	1.4	22.0
Completed Secondary School	26.2	1.0	13.8
Completed Post-Secondary/Technical School	16.5	1.7	9.9
Completed Tertiary Education	19.7	2.8	13.8
Total	34.9	3.4	19.0

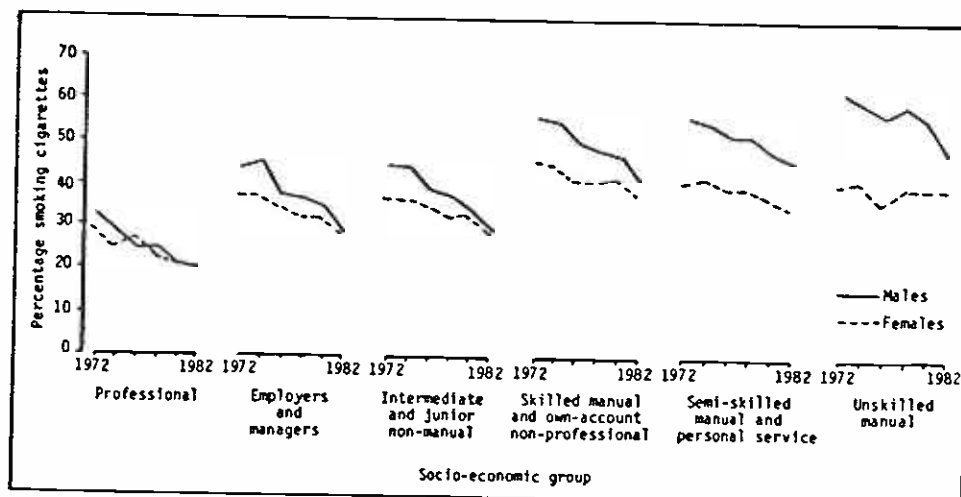
## 3. Amount of Cigarettes Smoked

Information on the amount of cigarettes smoked among smokers in the Republic is only available from the earlier surveys. This showed male smokers to be smoking an average of 16.1 cigarettes per day while females smoked 10.7.

## DISCUSSION

This paper has addressed itself to presenting the current levels of smoking in the country, as the last most recent information available was sought 7 years ago. The 1984 survey results have shown that the prevalence of smoking in Singapore is definitely on the decline, falling from a level of 23% to 19% in the past years. This could be due to the effects of the health education and prohibitive measures against smoking introduced in the country since the early 1970's. Our findings are in line with those seen in the more developed countries such as Britain, Europe and North

**Fig. 5** Cigarette Smoking Prevalence By Sex And Socio-Economic Group, 1972-82, Great Britain



Source : Population and Trends No. 37 - Autumn 1984

**TABLE 4**  
**SMOKING RATE BY ETHNIC GROUP 1977 AND 1984**

Per 100 Popn Aged 15 Yrs And Above

Ethnic Group	1984			1977	Significance of difference
	Male	Female	Total		
Chinese	32.9	3.6	18.1	22.1	P < < 0.001
Malay	46.3	2.1	24.4	26.6	P < < 0.001
Indian	31.8	0.8	17.6	21.3	P < < 0.001
Others	42.1	8.3	23.9	38.6	P < < 0.001
Total	34.9	3.4	19.0	23.0	P < < 0.001

America which have well-documented the accelerated fall in the smoking prevalence that they have experienced. Data from Britain's 1982 General Household Survey shows that smokers are now a minority in all social groups<sup>3</sup>.

Our limited data, however, does not tell us whether the current decline seen in smoking in Singapore has been due to less people taking up the smoking habit or more smokers giving up the habit. There is more detailed research warranted into this area in order to plan anti-smoking programmes against specific target groups in the future. With the notion of the "safe cigarette" being dispelled as a fallacy, the ultimate aim in our national anti-smoking programme should therefore be to work towards creating a "non-smoking" population. To achieve this, relentless health education efforts are required to entice smokers to give up smoking by repeatedly convincing them of the benefits, both general and healthwise, of not smoking. More important, intensive programmes geared to children and youths are necessary to prevent them from taking up the smoking habit. Passive smokers should be coaxed to be more assertive of their rights to a clean

non-smoking environment if they do not wish to be equally exposed to the morbidity and mortality associated with smoking.

#### ACKNOWLEDGEMENT

We wish to record our grateful acknowledgement to the Research and Statistics Department, Ministry of Labour, for kindly permitting us to utilise the Labour Force Survey to capture the information on cigarette smoking in Singapore.

We also wish to thank the typists in the Ministry of Health who helped to type this manuscript and Statistical Assistant, Miss Ho Moy Hong for drawing the statistical charts presented in this paper.

#### REFERENCES

1. WHO Technical Report Series No. 636.
2. Singapore Cancer Registry.
3. Population and Trends Vol. 37, August 1974.