Smoking patterns in the coloured population of the Cape Peninsula (CRISIC study)

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Summary

A cross-sectional study of tobacco-smoking habits in a random sample of 976 coloured subjects aged 15 - 64 years revealed that smoking was common, 57% of men and 41% of women being current smokers and 10.4% of men and 9.6% of women having stopped smoking. Heavy smoking prevailed, indicating by mean daily consumption of 14.2 and 13.1 cigarettes among male and female smokers respectively; only 33.5% of male and 39.6% of female smokers used less than 10 cigarettes per day.

Coloured smokers smoked more heavily during the weekend. Both men and women smoked mostly filter cigarettes. Forty-four per cent of male and 49.5% of female smokers stated that they had attempted to stop smoking, mainly for health reasons. More than one-third of the participants had a positive attitude to combating smoking, particularly those with an educational level higher than Standard 7.

Former smokers and heavy smokers had a significantly higher prevalence of ischaemic heart disease than the other participants. Smoking was associated with a low body mass index, low high-density lipoprotein cholesterol levels, low socio-economic standing, high alcohol consumption and type A coronary-prone behaviour in men. In 1982 the economically active coloured population of the Cape Peninsula spent an estimated R36.2 million on cigarettes.

In 1978 the Institute for Sociological, Demographic and Criminological Research of the Human Sciences Research Council reported that the prevalence of smoking was higher among coloured men (79%) and women (52%) aged 20 - 59 years than in any of the other three ethnic groups of South Africa. White men and women included more former smokers (21% and 12% respectively) than the other three ethnic groups and also smoked more heavily than did any of the other three groups. As age increased, so did the proportion of heavy smokers in the white, coloured and Indian populations. These figures differ from those reported in 1978 by Coetzee, who found that 24% of black and 43% of coloured subjects over the age of 16 years smoked. In Bloemfontein Olivier et al. found that 16% of Standard 9 and 10 white schoolchildren smoked. In Cape Town Benata reported that 2.5% of white and 15.2% of coloured children aged 11 - 15 years smoked. In a later study by Prout and Benata, 21% of white Cape Town schoolchildren aged 12 - 19 years admitted to smoking.

Although the prevalence of smoking has decreased in the Western world, in the developing countries the growing smoking epidemic is seen as the greatest future health threat to these populations as it will exacerbate the already grim problems attributable to malnutrition and communicable diseases. The profile of the smoking society has changed over time, and more people from the lower socio-economic classes than from the higher socio-economic classes are currently smoking.

The benefit that society, and particularly South African society, will glean from developing a healthy non-smoking population greatly outweighs the economic benefit of a thriving tobacco industry.

The high prevalence of smoking previously reported in the coloured population, particularly among young coloured schoolchildren, and the lack of knowledge on the smoking patterns and factors related to the habit in this population motivated the study of smoking in the coloured population of the Cape Peninsula. This investigation formed part of a study to evaluate coronary heart disease risk in this population. Knowledge of this will enable realistic smoking intervention programmes to be formulated.

Subjects and methods

The study population was a stratified random sample of 976 coloured participants (approximately 100 in each age and sex category studied). The survey techniques and the interpretation of prevalence of coronary risk factor data have been described previously. Participants were asked to specify whether they were current smokers or had previously smoked, what they smoked, for how long and how much they smoked, as well as whether they had tried to stop smoking during the past year and for what reason. Their attitudes to combating the smoking habit were also evaluated and have been reported elsewhere. The crude prevalence rate was age-adjusted against the coloured population of South Africa as reported in the 5% subsample of the 1980 census. Light cigarette smoking was defined as smoking less than 10
Results

Selected aspects of the smoking pattern for each age/sex group are given in Table I.

Fifty-seven per cent of the men and 41% of the women were current tobacco smokers. For men as well as females the percentage of current smokers was highest in the oldest age category 25 - 34 years and lowest in the category 15 - 24 years. Among men there was a big difference between the percentage of current smokers in the youngest age group (40,4%) and that in the 25 - 34-year group (71,9%). Among women the difference between these two age categories was not as big (34%) and was 30% respectively. In all age groups the percentage of males currently smoking was much higher than that of females, this difference being smallest in the youngest age group. A small number of participants, mostly men in the older age groups, smoked tobacco in a form other than cigarettes.

For male and female cigarette smokers the mean daily consumption was 14,2 and 13,1 cigarettes respectively; 66,5% of male and 60,4% of female smokers smoked 10 or more cigarettes per day. Smoking patterns during the week differed from those over weekends. During the week there were approximately equal numbers of light, moderate and heavy smokers. Over the weekend the number of light smokers increased and the number of light smokers decreased, so that 42,3% of male and 38,4% of female smokers smoked heavily over weekends.

Table I shows that among both men and women the mean age of onset of smoking increased for each increasing age decile. The difference in mean age of onset of smoking between the oldest and youngest age group was 7 years for men and 13 years for women.

Women smoked filter cigarettes almost exclusively, while 91,5% of male smokers smoked filter cigarettes and 5,8% non-filter cigarettes; 8,2% rolled their own cigarettes and 5,8% smoked a pipe. Some men smoked more than one form of tobacco.

A remarkable number of smokers (44,4% of men and 49,5% of women) had attempted to stop smoking or to reduce their use of tobacco during the previous year. While more younger male smokers than older ones had attempted to cut down, the opposite was found for female smokers. Of those who had attempted to stop smoking, 75,4% of the men and 85,9% of the women had done so for health reasons. Only 32,6% of the men had never smoked and 10,4% had stopped smoking. For the males the age group 55 - 64 years contained the highest percentage of former smokers (17,8%). Of the men aged 15 - 24 years 54,3% had never smoked, while only 14,6% of those in the next age group, 25 - 34 years, had never done so. Of the women 49,3% had never smoked and 9,6% had stopped smoking. Among females the age group 35 - 44 years contained the highest percentage of former smokers (15,2%).

On comparing the ischaemic heart disease (IHD)-related medical history of smokers and subjects who had never smoked, no significant difference was found when angina or myocardial infarction were asked about directly; however, former smokers had significantly (P < 0,0001; t-test) more IHD than the other participants.

In contrast, however, when comparing IHD events identified by the London School of Hygiene questionnaire for chest pain, significant differences were found between smokers (60 < 0,0001) and heavy smokers (>= 20 cigarettes per day) than non-smokers and light smokers (<= 20 cigarettes per day) had had ischaemic events. The body mass index of smokers (24,5) was significantly lower (P < 0,0001) than that of non-smokers (26,1). The high-density lipoprotein (HDL) cholesterol level of smokers (56,2 mg/dl) was significantly lower (P < 0,005) than that of non-smokers (59,3 mg/dl). The effect of smoking on HDL cholesterol seems to be dose-dependent, since a significant but weak negative correlation was found between the number of cigarettes smoked per day and the HDL cholesterol level. Significantly more smokers than non-smokers consumed alcohol. The number of cigarettes smoked daily showed a significant but weak correlation with the amount of alcohol consumed.

The socio-economic status of smokers was lower than that of non-smokers. This was shown by the facts that, compared with non-smokers, smokers had higher CASS occupational categories, a lower level of education and a higher occupancy rate. A significant but weak correlation was found between the number of cigarettes smoked per day and energy expenditure at work, as well as an inverse relationship with energy expenditure on leisure activities. These could also be seen as indirect pointers to socio-economic status. Finally, the number of cigarettes smoked per day had a significant but weak correlation with non-fasting serum triglyceride and uric acid levels.

Discussion

Not only do many coloured people smoke, but they also smoke heavily. The prevalence of smoking in this study is lower than that reported by Van der Burgh, but higher than that reported by Coetzee. Many more coloured women than white women smoked and a similar pattern was seen for men. The number of former smokers found in this study was higher than that reported by Van der Burgh in 1977, and we hope that this indicates that more coloureds have stopped smoking since 1977.

Although more men than women smoked in the youngest age group, 15 - 24 years (40,4% vs. 34%), this is a difference of only 6%, much smaller than the difference between the sexes in the older groups; it possibly indicates that more young coloured women are now smoking, or that fewer young men are now smoking.

Men and women smoke an almost equal number of cigarettes per day and over 60% of both male and female smokers smoke more than 10 cigarettes per day, the level above which the IHD risk attributable to smoking increases.21

The increase in the number of heavy smokers over weekends could be explained by the fact that a large proportion of the study population is paid on Fridays and then has more time and money for smoking than during the week.

It is worrying that among both men and women the mean age of onset of smoking was lowest in the youngest age groups. This could mean that coloured people are starting to smoke at a younger age than before, probably while most are still at school, and that they are therefore likely to have a longer exposure to smoking than their elders had. This is occurring in a population which already has a high prevalence of atherosclerosis-associated disease.

One can take heart from the information that so many subjects had attempted to stop or decrease their smoking during the previous year, and that the majority of them had done so for health reasons. Results of a study reported elsewhere showed that 41 - 46% of men and 30 - 39% of women of different age groups had a positive attitude to combating smoking. More people with an educational level above Standard 7 had a positive attitude to combating smoking than those with less education, and as many as 48% of smokers in some age and sex categories had a positive attitude. As elsewhere in the world, there were more smokers in the lower than in the higher socio-economic groups of the coloured population.

In this population, which has a composite coronary risk profile greater than that found for a white rural population, the only redeeming feature in terms of coronary risk was the high protective HDL cholesterol levels found, but even this was being eroded by the effect of smoking on these levels. Another risk factor, type A coronary-prone behaviour, was associated with the number of cigarettes smoked by men but not by women.
TABLE I. SMOKING IN THE COLOURED POPULATION OF THE CAPE PENINSULA BY AGE AND SEX

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th></th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15 - 24</td>
<td>25 - 34</td>
<td>35 - 44</td>
<td>45 - 54</td>
<td>55 - 64</td>
</tr>
<tr>
<td>No. of respondents</td>
<td>94</td>
<td>96</td>
<td>103</td>
<td>95</td>
<td>90</td>
</tr>
<tr>
<td>Users of tobacco†</td>
<td>40.7</td>
<td>71.9</td>
<td>67.0</td>
<td>60.0</td>
<td>66.7</td>
</tr>
<tr>
<td>Cigarette smokers†</td>
<td>40.4</td>
<td>71.9</td>
<td>66.0</td>
<td>58.9</td>
<td>61.1</td>
</tr>
<tr>
<td>Current non-smokers†</td>
<td>59.6</td>
<td>28.1</td>
<td>33.0</td>
<td>40.0</td>
<td>33.4</td>
</tr>
<tr>
<td>Past smokers†</td>
<td>5.3</td>
<td>13.5</td>
<td>11.6</td>
<td>14.7</td>
<td>17.8</td>
</tr>
<tr>
<td>Never smoked†</td>
<td>54.3</td>
<td>14.6</td>
<td>21.4</td>
<td>25.3</td>
<td>15.6</td>
</tr>
<tr>
<td>Cigarette consumption per day‡</td>
<td>11.2 ± 7.6</td>
<td>13.6 ± 8.0</td>
<td>14.8 ± 8.8</td>
<td>14.7 ± 8.8</td>
<td>15.6 ± 10.3</td>
</tr>
<tr>
<td>No. of cigarettes per day§</td>
<td>50.0</td>
<td>36.4</td>
<td>29.8</td>
<td>32.7</td>
<td>23.6</td>
</tr>
<tr>
<td>&lt; 10 (light)</td>
<td>26.3</td>
<td>28.8</td>
<td>41.8</td>
<td>27.3</td>
<td>38.2</td>
</tr>
<tr>
<td>≥ 10, &lt; 20 (moderate)</td>
<td>23.7</td>
<td>34.8</td>
<td>28.5</td>
<td>40.0</td>
<td>38.2</td>
</tr>
<tr>
<td>≥ 20 (heavy)</td>
<td>16.1 ± 2.5</td>
<td>17.3 ± 3.7</td>
<td>19.0 ± 5.0</td>
<td>21.2 ± 7.5</td>
<td>23.1 ± 8.3</td>
</tr>
<tr>
<td>Age of onset of smoking (yrs):</td>
<td>57.9</td>
<td>49.3</td>
<td>36.2</td>
<td>33.3</td>
<td>50.0</td>
</tr>
<tr>
<td>Attempts to decrease smoking§</td>
<td>59.1</td>
<td>41.1</td>
<td>64.0</td>
<td>78.9</td>
<td>76.7</td>
</tr>
</tbody>
</table>

* For all age groups combined, rates are given as crude and age-adjusted (in brackets) against the South African coloured population as found in the 5% subsample of the 1980 census.
† % of total number in age group.
‡ Mean ± SD.
§ % of smokers only.
¶ % of smokers who attempted to decrease their smoking.
In 1982, when this study was conducted, a packet of 20 cigarettes cost 60c. From this it can be calculated that the economically active coloured population aged 15 - 64 years of the Cape Peninsula spent R36,16 million on cigarettes in 1982. Most of this was spent by people of lower socio-economic status who can ill afford it, only to enable them to develop smoking-associated diseases that cost the labour market dearly in loss of productivity, and probably cost the State-assisted and other medical services even more. The result of heavy smoking by the coloured population is reflected by the rise in lung cancer mortality between 1970 and 1980 in this population group, which now has the highest mortality rate for any of the four population groups in South Africa. The time has come to implement intervention programmes, in keeping with the smoking patterns identified in this study, particularly in order to prevent the onset of smoking and to decrease the prevalence of current smoking in the coloured population.

The authors wish to record their indebtedness to the Bureau for Research Support Services of the HSRC and in particular to Mr P. Crause, Assistant Director of the Western Cape Regional Office, and Mr O. Valley, Mr D. A. Louw and Mr S. A. Persent, field work organisers for this region.

The able and dedicated service of the school nursing sisters of the Regional Office of the Department of Health and Welfare (1982) contributed greatly to this study. The laboratory assistants of the National Research Institute for Nutritional Diseases executed the analysis most ably, and for this we thank them. Sr Jean Fourie trained and standardised the field workers with great precision and, with Miss M. E. J. Louw and L. J. Levy, supervised the school nursing sisters' field work. This was of great value to the study. The authors also record their indebtedness to Mr D. Chalton for assistance with statistical analysis of data.

REFERENCES

News and Comment/Nuus en Kommentaar

Misuse of mammography
A timely warning is sounded in the Medical Journal of Australia about the dangers of misusing mammography in symptomatic as opposed to asymptomatic women (Walker and Langlands, Med J Aurb 1986; 145: 185). Mammography first emerged as an important diagnostic aid for carcinoma of the breast after the Health Insurance Plan (HIP) study during the 1960s and, when used as an annual screening test in conjunction with physical examination, led to a 30% reduction in mortality from breast cancer when compared with a control group. However, in the Australian study, 218 women out of a total of 735 underwent mammography after a breast tumour had been discovered. In 95 of these, the mammogram failed to define the carcinoma, and in almost 50% of patients with a negative result, definitive treatment was delayed by the procedure. This was particularly likely to occur in young premenopausal women with small tumours. When these women finally presented with overt breast cancer, the tumours were larger and more advanced. The authors conclude that to use mammography as a diagnostic tool in patients with lumps in the breast is dangerous because of a significant false-negative rate which may lead to biopsies being postponed.

The continent colostomy
Although a great deal can be done to make the life of the colostomy patient easier, wearing a colostomy bag with all its attendant problems is a heavy burden for many. One way of avoiding this is to undertake bowel irrigation so that the bag need not be worn continuously. However, incontinence of gas and leakage of faeces can still occur.

A method has now been developed whereby the colostomy can be plugged, which allows the passage of flatus, but not faeces (Burchartz et al., Lancet 1986; ii: 1062). The device consists of an adhesive base plate and a colostomy plug made of open-cell polyurethane foam also containing a carbon filter which renders flatus odour-free. The device was tested on 53 patients, and faecal continence, plus the passage of odour-free flatus was achieved in 90%. Bowel movement could be regulated either by bowel irrigation or intermittent use of a colostomy bag. In most patients, continence was obtained for 5 hours or more, and up to 24 hours in some cases. Further trials are planned which, it is hoped, will establish this device as a major advance in improving the lifestyle of colostomy patients.