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SMOKING IN TUTONG, BRUNEI: A CHANGING HABIT

ASHLEY A. WOODCOCK

INTRODUCTION

IT IS WIDELY BELIEVED that sun-cured tobaccos, with a lower tar and nitrate content than flue-cured tobaccos are less carcinogenic to man. Brunei is a previously relatively isolated state on the northern coast of Borneo. Cigarette smoking is a common habit, especially among older age groups, who make their own cigarettes from locally produced sun-cured tobaccos. Whilst there are large numbers of patients with chronic obstructive lung disease secondary to smoking, carcinoma of the lung is a rare disease.

With control of cigarette advertising in Western Countries, cigarette manufacturers are turning their attention to the lucrative markets in the developing countries of South-east Asia. Tobacco consumption in developing countries has not yet been influenced by health considerations.

It is important to define the size of the smoking problem and the smoking habits of the population so that a rational approach can be taken towards warning the population of the hazards of cigarette smoking.

METHODS

The State of Brunei is a previously isolated Sultanate on the north-east coast of Brunei. The smoking survey was carried out in Tutong town (the third largest town in Brunei) in conjunction with tuberculosis mass miniature X-ray campaign. The whole of the population aged over 14 answered a questionnaire verbally, to a senior member of the nursing team. All subjects were asked their age, sex, race and whether they were smokers or non-smokers. Smokers were asked the number of cigarettes smoked, the type or brand of cigarettes preferred, and the number of years they had been smoking. In addition, the blood pressure was taken (the results of the hypertension survey will be published later).

RESULTS

765 subjects (395 male, 370 female) answered the questionaire. The racial distribution (Malay 61.3%, Chinese 36.4 %, indigenous races (Dusun, Iban etc) 2.3% parallelled closely the Brunei population. More males (39.9%) than females (14.3%]smoked, and the frequency of smoking increased with age from 15.3% in the under-30 age group to 68.5% in the over-50 age group (Table I). Smoking of locally-produced sun-cured tobacco was common in the over-50 age group (52%) whereas almost all the smokers in the under-30 age group (93.9%) smoked cigarettes containing flue-cured tobacco. The 30-50 age group shared results intermediate between the older and younger groups, with 36.9% of this group smoking, of whom 70.9% smoked flue-cured tobaccos. Of the 208 who smoked, 69 (33.2%) smoked from 1-5 cigarettes, 46 (22.1%) smoked 6-10 cigarettes, 63 (30.3%) smoked 11-20 cigarettes and 30 (14.4%) smoked more than 20 cigarettes per day.

ASHLEY A. WOODCOCK
BSc, MB, ChB, MRCP
Specialist Physician, General Hospital, Bandar Seri Begawan, Brunei.

DISCUSSION

The multiple health hazards of tobacco-smoking are already widely described. As well as carcinoma of lung, ischaemic heart disease and chronic bronchitis, new hazards are discovered with regularity. Tobacco has for centuries been used all over the world, as a way of increasing the enjoyment of life or as an aid to coping with its pressures. A new development in the twentieth century has been the increasing use of cigarettes manufactured from flue-cured tobaccos (Fletcher & Horn 1970). Flue-cured tobaccos have a higher tar content and use nitrites in the curing process. The epidemic of lung carcinoma which is affecting all developed nations may be partly explained by the increased carcinogenic effects of flue-cured tobaccos in comparison with sun-cured tobaccos. With increasing control measures in the developed countries, tobacco companies have turned their attention to lucrative markets in the developing countries. The World Health Organisation has recently expressed concern that the tobacco companies are switching sales of high-tar cigarettes to the 'Third World' countries (WHO, 1978).

The results of the Brunei survey show that the incidence of smoking in the under-30 age group is very similar to rates found in surveys

TABLE I

SMOKING RELATED TO AGE AND TYPE OF CIGARETTES

Age in years	Total Sample	No. of Smokers	Percentage In Each Age Group Who Smoke	No. Smoking Mainly Flue-cured Tobacco	Percentage Smoking Mainly Flue-cured Tobacco
14 — 30	451	69	15.3%	65	93.9%
30 — 50	241	89	36.9%	63	70.9%
Over 50	73	50	68.5%	24	48.0%
Total	765	208	27.2%	155	74.5%

of Malaysian (Pathmanathan, 1975) and Scottish (Mckay *et al.,* 1973) students. The sex distribution with males smoking three times as frequently as females is similar to the Malaysian survey but differed from the Scottish results where almost as many females smoked as males. The great majority (93.9%) of the under-30 age group smoked cigarettes containing flue-cured tobacco. This was in contrast to the high proportion of smokers over 50 years old, who smoked locally-produced sun-cured tobaccos. Smoking of local sun-cured tobaccos is not popular amongst the young people of Brunei. A possible interpretation of the results is that as smokers get older, they switch to locally-produced tobaccos. It is much more likely that young people are attracted to commercially-produced cigarettes containing flue-cured tobaccos. That there is a trend towards cigarettes containing flue-cured tobacco is confirmed by the statistics for cigarette imports to Brunei. Imports of cigarettes containing flue-cured tobaccos have almost doubled over the past thirteen years (from 420,122 lbs in 1965 to 723,378 lbs in 1978). The trend towards flue-cured tobaccos must be confirmed by future surveys.

Of the diseases related to smoking, chronic bronchitis and cor pulmonale are common conditions, whereas carcinoma of the lung is very uncommon. In 1978, there were only eight histologically-proven male cases of carcinoma of lung in Brunei (Dr. R. Kay personal communication).

An additional four probable cases were picked up radiologically which did not come to biopsy or cytology (Dr A. Jones personal communication). This mortality rate of 10 per 100,000 is approximately one tenth of the United Kingdom rate for males of 106 per 100,000. The frequency of carcinoma of lung on mass miniature radiography in 1978 was only 1 in 8,000 in males over 45 years. This compares to a rate of 1.3 per 1000 in London men over 45 years (Nash, Morgan & Tonkins, 1961), 2.8 per 1000 in Philadelphia men over 45 (Boncot *et al.,* 1955) and 2.34 per 1000 in males over 60 in Edinburgh (Croftan and Douglas, 1975). The rarity of carcinoma of lung is surprising in view of the high incidence of cigarette smoking, and may be related to the popularity of smoking sun-cured tobacco in the older age group, though other factors such as absence of atmospheric pollution may be contributory. Carcinoma of the lung could become more common over the next few decades.

Having defined the extent of the problem and the smoking habits of the population, smoking controls can be attempted on several fronts.

Cigarette advertising should be more closely controlled. There is already a voluntary ban on cigarette advertising on television and in cinemas, but this should be extended to magazines and newspapers. Tar and nicotine contents of cigarettes should be specific on the packet and packs should carry health warnings in Malay and Chinese. Taxation should be increased, especially on high tar cigarettes. All hospitals and health institutions should become strict non-smoking areas. No smoking should be allowed in public areas eg. cinemas. All health workers should set an example by not smoking themselves and encouraging patients and their families to stop. An effective long-term health educa-

tion campaign should be mounted to warn the population of the hazards of cigarette smoking. Health workers should visit schools and colleges in an attempt to prevent young people starting smoking. The health authorities should co-operate with the armed forces, government departments, religious associations and sports clubs in order to stress the health hazards of smoking.

Atkinson and Townsend (1977) have calculated that an increase in the price of cigarettes by 50%, in addition to restrictions on advertising and health education campaigns could cut cigarette consumption in the United Kingdom by 40%. Similar measures would prevent epidemics of carcinoma of the lung and other smoking related diseases in the developing countries. There is a unique opportunity for health protection and promotion in Brunei.

SUMMARY

Of 765 people aged over 14 years, living in Tutong, in the State of Brunei, 208 (27.2%) were regular cigarette smokers. In the over-50 age group, 68.5% were smokers, of whom just over half smoked locally produced cigarettes containing sun-cured tobacco. In the under-30 age group, only 15.3% were smokers, but almost all of them (93.9%) smoked commercially- produced flue-cured cigarettes. The relationships of smoking habits and frequency of disease are studied and the possible effects on future health of increased sales of flue-cured tobaccos in South-east Asia are discussed.

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