

## LETTERS TO THE EDITOR

Letters intended for publication should be a maximum of 400 words and 10 references and should be sent to Simon Chapman, deputy editor, at the address given on the inside front cover. Those responding to articles or correspondence published in the journal should be received within six weeks of publication.

### An estimate of tobacco taxes paid by children in Japan

*To the Editor* - In Japan smoking by children under 20 years of age has been prohibited by the Law for Prohibition of Minors from Smoking, which was enacted in 1900. However, this Law has not been observed well by either minors or tobacco sellers as was demonstrated recently in a study by Minowa and Satomi.<sup>1</sup> Smoking rates among Japanese children have not been monitored systematically as in adults, but it has been estimated that the smoking rate is relatively high in the mid- to late-teenage years, and these teens have been paying tobacco taxes for their illegal deeds.

Prevention of smoking in children is an important measure in smoking control. It may be reasonable to allocate some revenues from tobacco taxes paid by children to health education for children.<sup>2</sup> Thus, the amount of tobacco taxes paid by children in Japan was estimated using relevant data included in the so-called "Tobacco White Paper" edited by the Ministry of Health and Welfare (revised version)<sup>3</sup> and some assumptions (table).

The prevalence of smokers 20 years of age and older in 1990 (A) and the average number of cigarettes smoked by smokers of that age (D) were obtained from a nationwide survey conducted by Japan Tobacco Inc. The total population aged 20 years and older in 1990 (B) was obtained from the national census data for 1990. The total amount of tobacco sales in 1990 (H) was obtained from a survey conducted by the Japan Tobacco Association. The amount of tobacco taxes collected in 1990 (I) was obtained from the Finance Ministry.

The total number of cigarettes smoked by children (G) was estimated by subtracting the estimated number of cigarettes smoked by adults (E) from the total number of cigarettes sold in Japan (F). The amount of taxes paid by children (J) was estimated by multiplying the percentage of all cigarettes sold in Japan that were smoked by children (G: 11.7%) by the total tobacco tax paid in 1990 (I). The estimated amount of tobacco taxes paid by children in Japan in 1990 was 223.4 billion yen (equivalent to about 2.3 billion US dollars).

Hatziandreu *et al.*<sup>4</sup> have reported an underestimate of about 30% of tobacco consumption in self-reported surveys in the US, possibly because of the social stigma associated with smoking in the US. In Japan the social stigma associated with smoking does not yet seem as strong as in the US. Thus, if we assume that the amount of tobacco consumption in self-reported surveys is underestimated by 10% in Japan, the number of cigarettes smoked by smokers 20 years of age and older (E) would be 316019 million instead of 284417 million; this would reduce the estimated number of cigarettes smoked by children (G) from 37583 million to 5981 million and the estimated tobacco taxes paid by children (J) from 223.4 billion yen to 35.6 billion yen. If even 30% of the estimated 35.6 billion yen in tobacco taxes paid by children is allocated to health education for children, this amount would be equal to the total funding for research grants allocated to a large national health project: the 10-Year Comprehensive Cancer Control Strategy Programmes!

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- 1 Minowa M, Satomi H. Japan: sale of tobacco to minors. *Lancet* 1992; 339: 1163.
- 2 DiFranza JR, Tye JB. Who profits from tobacco sales to children? *JAMA* 1990; 263: 2784-7.
- 3 Ministry of Health and Welfare (ed). *Smoking and health - a report of smoking and health problems* (2nd edn). Tokyo, Japan: Hoken-Doujin-Sha, 1993 (in Japanese).
- 4 Hatziandreu E, Pierce JP, Fiore M, *et al.* Trends in estimates of cigarette consumptions in the United States from tax data and from self-reported survey data. *Am J Publ Health* 1989; 79: 1020-3.

### Analysis of coca paste cigarettes

*To the Editor* - Coca paste (CCP) is the most common form of cocaine used in Peru. It is delivered in small packages. The composition of CCP includes coca leaves, kerosene, sulphuric acid, ammonia, carbonates, and various impurities. It is a mildly alkaline material. When smoked, the initial onset of psychoactivity is 8-10 seconds, and the duration of its high is 5-10 minutes. The average acute dose is 60-250 mg cocaine, which produces peak plasma levels of 300-800 ng/ml, indicating bioavailability of 6-32%. CCP is commonly smoked in tobacco cigarettes. There is no information about how much CCP and nicotine are contained in a typical CCP cigarette (CCPC).

To analyse the amount of CCP contained in a typical CCPC, we collected packages as sold in the street, and assayed them in Dr M Nizama's Laboratory, at Clinic Americana, in Lima, Peru. From more than 100 collected, we selected 15 packages at random and weighed them. The total mean weight of CCP was 76 mg (SD: 70.6 mg). Typically, a CCPC contains a mean of 298 mg of tobacco and 152 mg of CCP. Each package has between 30.4 mg to 64.6 mg of cocaine sulphate, mean 47.5 mg. A commercial tobacco cigarette contains 8-10 mg of nicotine and delivers about 1-2 mg to the smoker.<sup>1</sup> A CCPC contains approximately 95 mg of cocaine plus 4 mg of nicotine. The absorption of cocaine by alveolar membranes ranges from 5.7 mg (6%) to 30.4 mg (32%). The intake of nicotine is quite variable, both on the basis of daily intake (range: 10 to 80 mg) and on a per cigarette basis (range: 0.4 to 1.6 mg).

Typically, addicts smoke a mean of 20 CCPCs per episode (range: 6 to 50); that is, 1900 mg of cocaine, plus sufficient nicotine (mean: 10 mg; range: 1.2 mg to 40 mg) to produce and sustain nicotine dependence even if they do not otherwise use tobacco products. Absorption through alveolar membranes could range from 114 mg (6%) to 608 mg (32%) of cocaine in a typical CCP binge. In the maximum concentration of cocaine (85%), the user could obtain 2584 mg of cocaine.

It has been suggested that recognising persons dependent on nicotine and another drug as being co-dependent or polyaddicted may provide a clinically useful diagnosis.<sup>2</sup> Consistent with this recommendation, we conclude that dependence on coca paste, as used in Peru, should be considered as a double dependence on cocaine and nicotine.

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- 1 US Department of Health and Human Services. *The health consequences of smoking: nicotine addiction. A report of the Surgeon General, 1988.* Atlanta, Georgia: Centers for Disease Control, Office on Smoking and Health, 1988. (DHHS Publication No (CDC) 88-8406.)
- 2 Henningfield, JE. Pharmacologic basis and treatment of cigarette smoking. *J Clin Psychol* 1984; 45 (12, section 2): 24-34.

Table An estimate of tobacco taxes paid by children in Japan in 1990

	Male	Female	Total
A % of smokers	60.5	14.3	
B Population ≥ 20 years old	43 997 514	47 035 334	91 032 848
C No of smokers ≥ 20 years old	26 618 790	6 726 005	33 344 795
D Average no of cigarettes smoked/day/smoker ≥ 20 years old	24.7	18.1	
E No of cigarettes smoked by smokers (C × D × 365)	239 982 × 10 <sup>6</sup>	44 435 × 10 <sup>6</sup>	284 417 × 10 <sup>6</sup>
F Total no of cigarettes sold in Japan			322 000 × 10 <sup>6</sup>
G Estimated no of cigarettes smoked by children (< 20 years old) (F - E)			37 583 × 10 <sup>6</sup>
H Total amount of tobacco sales in 1990			(11.7% of total) 3591 × 10 <sup>8</sup> yen
I Tobacco tax in 1990			1914 × 10 <sup>8</sup> yen
National tax			957 × 10 <sup>8</sup> yen
Local tax			957 × 10 <sup>8</sup> yen
J Estimated tobacco taxes paid by children (< 20 years old) (I × 11.7%*)			223.4 × 10 <sup>8</sup> yen (= US\$2.35 × 10 <sup>9</sup> )

\* From G.