Smoking Low-cost Cigarettes: Disparities Evident

Dear Editor:

The availability of low-cost cigarettes undermines tobacco control's most effective measure to reduce smoking prevalence: keeping cigarette prices high by raising tobacco taxes.¹ The discount cigarette market share has grown considerably since 2003,² with discount cigarettes selling for \$10-\$15 less per carton than premium brands. Contraband cigarettes – cigarettes sold illegally – are even cheaper than discounts.³ There is an urgent need to understand who is smoking these reduced-price cigarettes. We compiled baseline data from the Ontario Tobacco Survey, a population-based telephone survey of Ontario adults.⁴

Smokers' usual brand of cigarettes was categorized as premium, discount or contraband according to a list of discount cigarette brands⁵ and known contraband cigarettes in Ontario. Differences in the characteristics of premium, discount and contraband cigarette smokers were examined using Chi-square tests and multinomial regression models. Analyses were adjusted for the complex survey design.

The proportions of users smoking premium, discount and contraband cigarettes were 60%, 30% and 10%, respectively. Discount cigarette smokers were more likely to be older, female, have made more lifetime quit attempts, and were more addicted to cigarettes compared to premium cigarette smokers ($p < 0.0001$; Table 1); only perceived addiction was not significant in the adjusted model (Table 2).

Contraband cigarette smokers were more likely to reside in rural areas, be older, female, have less than high school education, have made more lifetime quit attempts, were more addicted to cigarettes, and had no intention to quit compared to premium smokers (Table 1). Age and perceived addiction were not significant in the adjusted model (Table 2). Compared to discount smokers, contraband cigarette smokers were more likely to reside in rural areas, be more addicted and less likely to intend to quit (Table 2).

In Ontario, 40% of smokers are smoking low-cost cigarettes, with 1 in 10 seeking illegal sources of cigarettes. This is significant and reduces the impact of tobacco control interventions in Ontario.

While young adults are more sensitive to cigarette price, they are also more susceptible to advertising and branding,⁶ which may explain why they were less likely to smoke discount brands than older adults. Women were more likely to smoke both discount and contraband cigarettes, consistent with previous research indicating they are more price sensitive than men.⁷ It was also expected that smokers with greater nicotine addiction smoked cheaper sources of cigarettes, consistent with findings of number of cigarettes smoked from previous studies.^{7,8} While an earlier study reported that those purchasing low or untaxed sources had higher levels of education,⁹ we found contraband brand use associated with lower levels of education.

There is substantial use of low-cost cigarettes, presenting a challenge for tobacco control in Ontario. Socio-economic disparities are evident among discount and contraband cigarette smokers. Minimum price laws and tax increases can counter the growing discount market; licensing, tax agreements with First Nations com-

Table 1. Characteristics of Premium, Discount and Contraband Cigarette Smokers*

Characteristic	All Respondents		Premium		Discount		Contraband		Chi-square Test for Association, p-value
PREVALENCE	n†	%‡	n†	%‡	n†	%‡	n†	%‡	<0.0001
OTS Sample	3696	100	2047	100	1183	100	466	100	
Age (years, grouped)									
18-29	773	27.4	504	32.1	191	20.1	78	21.1	<0.0001
30-44	1175	34.3	655	34.1	379	35.0	141	33.2	
45-59	1233	27.2	630	24.2	432	31.7	171	31.7	
60+	496	11.1	247	9.6	175	13.2	74	14.0	
Sex									
Women	2047	47.1	1026	41.8	734	55.1	287	55.4	<0.0001
Men	1649	52.9	1021	58.2	449	44.9	179	44.6	
Education									
Less than high school	637	15.2	316	13.1	204	16.8	117	22.9	0.0016
High school and some college	1603	43.5	924	43.8	501	44.2	178	40.0	
Completed college	1450	41.3	804	43.1	476	39.0	170	37.1	
Rurality									
Urban	2684	82.6	1497	84.2	873	83.6	314	70.2	<0.0001
Rural	936	17.4	505	15.8	285	16.4	146	29.8	
Heaviness of Smoking Index (HSI)									
Low (0-2)	1179	37.5	784	44.8	334	30.4	61	15.2	<0.0001
Moderate (3-4)	1395	36.1	725	33.1	496	41.2	174	38.6	
High (5-6)	1076	26.4	508	22.1	344	28.4	224	46.2	
Quit intention									
No, Don't know	2176	60.2	1208	59.6	638	57.3	330	72.8	0.0002
Yes	1519	39.8	839	40.4	545	42.7	135	27.2	
Lifetime number of quit attempts									
None	577	18.0	371	21.6	137	12.3	69	13.5	<0.0001
One	839	23.5	491	24.2	241	21.8	107	24.5	
Two or more	2274	58.5	1181	54.2	804	65.9	289	61.9	
Perceived addiction									
Not at all addicted	218	7.6	160	9.8	46	4.4	12	3.7	<0.0001
Somewhat addicted	1034	31.4	643	35.1	303	27.8	88	19.9	
Very addicted	2429	61.1	1237	55.2	828	67.8	364	76.5	

* OTS Baseline data, Cohorts 1-6

† Unweighted sample size. Numbers may not sum to full sample due to missing values.

‡ Weighted estimates. Estimates may not sum to 100% due to rounding.

Table 2. Factors Associated With Smoking Discount and Contraband Cigarettes Among Ontario Adult Smokers:* Relative risks and confidence intervals from simultaneously adjusted, multinomial regression models

Characteristic	Discount vs. Premium Cigarettes RR (95% CI)	Contraband vs. Premium Cigarettes RR (95% CI)	Contraband vs. Discount Cigarettes RR (95% CI)
Age (continuous, per year)	1.01 (1.01 – 1.02)	1.00 (0.99 – 1.01)	0.99 (0.98 – 1.00)
Sex			
Women	Reference	Reference	Reference
Men	0.60 (0.49 – 0.74)	0.53 (0.39 – 0.71)	0.88 (0.64 – 1.19)
Education			
Less than high school	Reference	Reference	Reference
High school and some college	0.89 (0.65 – 1.22)	0.69 (0.48 – 0.99)	0.77 (0.52 – 1.14)
Completed college	0.81 (0.60 – 1.11)	0.77 (0.52 – 1.14)	0.95 (0.63 – 1.44)
Rurality			
Urban	Reference	Reference	Reference
Rural	0.85 (0.68 – 1.05)	1.75 (1.28 – 2.40)	2.07 (1.50 – 2.86)
Heaviness of Smoking Index (continuous)	1.13 (1.05 – 1.22)	1.47 (1.33 – 1.63)	1.30 (1.17 – 1.46)
Quit intention			
No, Don't know	Reference	Reference	Reference
Yes	1.15 (0.93 – 1.42)	0.63 (0.45 – 0.86)	0.55 (0.39 – 0.76)
Lifetime number of quit attempts			
None	Reference	Reference	Reference
One	1.48 (1.05 – 2.10)	1.62 (1.02 – 2.60)	1.10 (0.66 – 1.83)
Two or more	1.87 (1.38 – 2.54)	1.78 (1.18 – 2.69)	0.95 (0.61 – 1.49)
Perceived addiction			
Not at all addicted	Reference	Reference	Reference
Somewhat addicted	1.40 (0.82 – 2.37)	0.97 (0.36 – 2.61)	0.69 (0.23 – 2.08)
Very addicted	1.48 (0.84 – 2.64)	0.98 (0.37 – 2.57)	0.66 (0.22 – 1.97)

* Weighted models adjusted for the complex sampling of the OTS and year of data collection; bold text indicates significance

munities and enhanced enforcement are some evidence-based policies to manage contraband tobacco.¹⁰ To optimize the public health benefits of tobacco control initiatives and help reduce health disparities, these and other innovative solutions that address the issue of low-cost cigarettes are needed.

Lori M. Diemert, BSc*

Joanna E. Cohen, PhD*,†,‡

Susan J. Bondy, PhD*,†

Russell C. Callaghan, PhD†,‡

Roberta Ferrence, PhD*,†,‡

John Garcia, PhD*,§

Robert Schwartz, PhD*,†

Peter Selby, MD*,‡

* Ontario Tobacco Research Unit, Toronto, ON

† Dalla Lana School of Public Health, University of Toronto, Toronto, ON

‡ Centre for Addiction and Mental Health, Toronto, ON

§ Department of Health Studies and Gerontology, University of Waterloo, Waterloo, ON

Correspondence: Dr. Joanna E. Cohen, Ontario Tobacco Research Unit, 33 Russell Street, Toronto, ON M5S 2S1, E-mail: joanna_cohen@camh.net

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