Original Investigation

Predictors of What Smokers Say They Will Do in Response to Future Price Increases. Findings From the International Tobacco Control (ITC) Four Country Survey

Hana Ross, Ph.D.,¹ Evan Blecher, M.A.,¹ Lili Yan, Ph.D.,¹ & K. Michael Cummings, Ph.D., M.P.H.²

¹ American Cancer Society, Intramural Research, Atlanta, GA

² Department of Health Behavior, Roswell Park Cancer Institute, Buffalo, NY

Lili Yan is now at Centers for Disease Control and Prevention, Atlanta, GA.

Corresponding Author: Hana Ross, Ph.D., American Cancer Society, 250 Williams St., Suite 600, Atlanta, GA 30303, USA.

Telephone: 404.329.7990; Fax 404.327.6450; E-mail: hana.ross@cancer.org

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Abstract

Introduction: Given the impact of higher tobacco prices on smoking cessation, we studied the role of future cigarette prices on forming expectation about smoking behavior.

Methods: Using a random sample of 9,058 adult cigarette smokers from the United States, Canada, Australia, and the United Kingdom collected in 2002, we examined predictors of what smokers say they will do in response to a hypothetical 50% increase in the price they paid for their last cigarette purchase. A series of regression analyses examined factors associated with intentions that have a positive impact on health, that is, intentions to quit and/or to consume fewer cigarettes.

Results: The quit and/or smoke less intentions were more pronounced among those who lived in areas with higher average cigarette prices and who paid higher prices for their brand of choice during the last purchase. The magnitude of the price increase is a more important predictor of an intention to quit/smoke less compared with the average cigarette price.

Conclusions: The availability of alternative (cheaper) cigarette sources may reduce but would not eliminate the impact of higher prices/taxes on smokers' expected behavior that has been linked to actual quit intentions and quitting in follow-up surveys.

Introduction

Using data from a cross-sectional survey of adult smokers participating in the International Tobacco Control (ITC) Four Country Policy Evaluation Survey (Thompson et al., 2006), we examine the role of future cigarette prices on forming expectation about smoking behavior that is related to better health.

Higher cigarette excise taxes are widely recommended as a means to encourage smoking cessation, reduce consumption among remaining smokers, and decrease smoking initiation among nonsmokers, especially youth. There is a large body of evidence demonstrating that higher cigarette prices are likely to decrease cigarette consumption (U.S. Department of Health and Human Services, 2000). However, few studies have analyzed the impact of cigarette prices on smoking cessation. Their findings suggest that cigarette prices are positively related to cessation attempts and to successful quitting (Douglas, 1998; Forster & Jones, 1999; Ross, Powell, Tauras, & Chaloupka, 2005; Tauras & Chaloupka, 2001).

Using cross-sectional US data with retrospective information, Douglas (1998) found that higher future cigarette prices significantly increase quit rates with the price elasticity ranging from 1.07 to 1.30, meaning that 10% increase in future cigarette prices will increase the probability of cessation up to 13%. Douglas did not find statistically significant effect of current and past cigarette prices on the probability of cessation. Tauras and Chaloupka (2001) employed U.S. longitudinal data and found that higher cigarette prices increase quitting among young men and women, with the price elasticity of quitting between 1.07 and 1.17 for young males and between 1.17 and 1.21 for young females. Tauras (2004) also used longitudinal data on U.S. young adults but found lower average price elasticity of cessation of 0.35 taking into account multiple quit attempts.

Only two studies have analyzed the expected response to an anticipated future cigarette price. A mid-1970s tobacco industry-commissioned study reported on a hypothetical reaction to higher prices among current adult smokers (Roper Organization, 1978). Ninety-three percent of smokers indicated that they would continue smoking after a 5 cent per pack tax increase (the price at the time of the study was approximately 55 cents per pack), while 62% and 41% would continue smoking after tax increases of 50 cents and \$1, respectively. Light and moderate smokers were more likely to indicate that they would quit than those smoking a pack or more per day.

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Ross et al. (2005) evaluated the expected response to a future hypothetical price increase among U.S. high-school students and estimated an expected price elasticity of smoking cessation between 0.90 and 0.93. Their results indicate that youths' expectation to quit smoking rises with the magnitude of proposed price increases, suggesting an almost constant marginal impact of a price increase on youth smoking cessation.

Intentions to quit are important determinants of smokers' readiness to make a quit attempt and to stay quit. DiClemente et al. (1991) modeled this impact in terms of stages of readiness for smoking cessation. Smokers may cycle through these stages many times before quitting for good.

A potential barrier to using tax as a tobacco control policy is the possibility for smokers to engage in compensating behavior, such as brand switching, opting for alternative sources of cigarettes, and participating in sale promotions. Loomis, Farrelly, and Mann (2006) found a positive relationship between the share of promotional cigarette sales in the United States and state cigarette tax increases between 1994 and 2004, suggesting that the tobacco industry is trying to reduce the impact of higher cigarette taxes. They estimated that cutting the value of the price promotions by half would result in at least a 3.7% decline in cigarette consumption in 2003.

The recent increase in cigarette price/tax variation across and within U.S. states provided an incentive for smokers to look for lower cost cigarette sources. Hyland, Bauer, et al. (2005) found that 34% of heavy adult smokers try to reduce their cost of smoking by getting cigarettes from cheaper sources. This is particularly true for those smokers who lived within 40 miles of a state border or an Indian reservation that sold cigarettes with a lower excise tax. Living in an area with higher average cigarette prices increases the probability of using discount and/or generic cigarettes (Hyland, Bauer, et al., 2005). The use of these cheaper cigarettes is primarily concentrated among high-intensity and low -ncome smokers (Cummings, Hyland, Lewit, & Shopland, 1997). One study found that an access to low-taxed cigarettes inhibited quit attempts and possibly quit rates (Hyland, Higbee, et al., 2005).

Hyland et al. (2006) studied the use of low/untaxed cigarettes in Australia, Canada, the United Kingdom, and the United States using the survey data employed in this paper. The differences across the countries were attributed to the affordability of cigarettes and the availability of cheaper cigarette sources. Using a low/untaxed source was positively related to age, income, level of education, and to being White and/or speaking English. The association between higher income and buying cigarettes from low/untaxed sources is consistent with a U.S. study (Hyland, Bauer, et al., 2005) that indicates that a minimum set of resources is needed to purchase low/untaxed cigarettes. Smoking intensity was not a significant predictor of purchasing low/untaxed cigarettes, but those who reported purchasing from a low/untaxed source at Wave 1 were less likely to make a quit attempt at Wave 2 of the survey (Hyland et al., 2006).

To summarize, the impact of cigarette prices on smoking cessation has been studied primarily in the United States, and only two studies have examined the impact of cigarette price choices on smoking cessation. Apart from one industry-sponsored study, there is no research evidence on the impact of hypothetical

price increase on adult smoking behavior. No study has linked smokers' expectation about their quit intentions to future quit intentions and quit behavior.

The ITC data from four countries with very different cigarette markets allows us to examine how a proposed future price increase might differentially impact contemplation to stop smoking. This is an important issue since the availability of cigarettes with a wide range of prices may inhibit cessation (Hyland, Higbee, et al., 2005; Hyland et al., 2006).

Data and Methods

This study uses data from the ITC surveys conducted in the United States, Canada, the United Kingdom, and Australia among a nationally representative cohort of adult smokers. We used the first wave of the surveys collected in the period from October to December 2002 (Subsequent waves do not include information on the responsiveness to future price increases.). More than 2,000 adult smokers were recruited in each country, resulting in a total of 9,058 complete interviews combined from all four countries. The details on sample sizes and the demographic characteristics of our sample are summarized in Table 1.

Within each country, the data were weighted to account for uneven representation in any given age/sex/region group as well as the attrition between recruitment and the main survey (Cummings et al., 1997). Another set of weights addresses the fact that countries have different population size and allows us to analyze data pooled across all four countries.

Table 1. Weighted demographics by country

	US	Canada	Australia	UK
Sample sizes				
Recruitment	2,493	2,507	2,562	2,728
Sample	2,138	2,214	2,305	2,401
Gender				
Male	53.6%	54.2%	55.5%	50.0%
Female	46.4%	45.9%	44.6%	50.0%
Age				
18-24	13.5%	14.3%	15.0%	14.1%
25-39	31.3%	33.5%	36.0%	32.3%
40-45	36.4%	34.8%	33.6%	29.3%
45+	18.8%	17.4%	15.4%	24.3%
Mean age	41.4	41.1	39.8	42.4
Race				
White	78.3%	89.8%	88.2%	95.8%
Non White	21.7%	10.2%	11.8%	4.2%
Income				
Low	32.4%	26.8%	24.6%	26.2%
Moderate	44.7%	43.0%	41.3%	36.8%
High	23.0%	30.2%	34.1%	37.0%
Education				
Low	38.5%	44.9%	66.9%	61.6%
Moderate	48.3%	42.1%	21.0%	25.6%
High	13.3%	13.1%	12.1%	12.9%

Notes. The sample characteristics are comparable to those from other national representative surveys of smokers.

Measure of Future Price Response

To study the impact of future cigarette prices on smoking behavior, the survey asked respondents how they would respond to a 50% increase in cigarette price over what they reported to pay for their last cigarette purchase. Six nonmutually exclusive responses were proposed: smoke fewer cigarettes, switch to a cheaper cigarette brand, look for a cheaper source for their current cigarette brand, buy a smaller number of cigarettes at a time, buy cigarettes in bulk, or try to quit smoking. We were primarily interested in those behavioral responses that would have positive impact on health and constructed three measures of quit intention based on “quitting smoking” and “smoking fewer cigarettes” answers.

1. A dichotomous indicator for smokers who responded “try to quit smoking” independently of other responses. Seventy percent of U.S. smokers expected to quit, which implies a price elasticity of (expected) cessation of 1.39. This estimate is compatible with what is found in studies measuring actual cessation among young adult U.S. smokers (Douglas, 1998; Tauras & Chaloupka, 2001). The corresponding share of smokers who expected to quit was 73%, 58%, and 70% in Canada, the United Kingdom, and Australia, resulting in quite narrow range of the price elasticities of (expected) cessation of 1.45, 1.18, and 1.40, respectively.
2. A dichotomous indicator for smokers with the intention to “smoke fewer cigarettes” and/or to “try to quit smoking” excluding other alternatives. There were 1,334 smokers from all four countries with value of 1 for this variable, about 14.9% of the whole sample.
3. An ordinal variable representing a quit intention scale. It assigns value 0 to smokers who do not expect any change in behavior, 1 to those who expect to respond to a price change but not by quitting, 2 to those who contemplate one or more behavior changes and also try to quit, and finally, 3 to those who only try to quit. There are 234, 1,709, 5,567, and 452 smokers in each category, respectively, of the total of 7,962 smokers.

Predictor Variables

Predictor variables examined included age, gender, race, marital status, education, household income, country, nicotine dependence, self-report of the price currently paid per pack of cigarettes, and a related price measure based on average price paid per pack.

We used two different measures of price. The first measure is a self-reported price for the most recent purchase of a pack of 20 cigarettes. To address its potential endogeneity, we created a second price measure, which is an average state/province cigarette price. We calculated this by averaging the self-reported price of the most popular country brand across state/province observations. Both price measures were converted into international dollars using the purchasing power parity. An extended discussion and justification of the price measures can be found in Ross, Blecher, Yan, and Hyland (in press).

Using the second price measure, we estimated the average price of the most popular brand in the last quarter of 2002 in the United States (\$3.33 for Marlboro), Australia (\$4.05 for Winfield), Canada (\$4.43 for Du Maurier), and the United Kingdom (\$5.87 for Lambert and Butler).

In addition to these two price measures, we also tested alternative exogenous price that was available in the United States and Canada only. In the United States, we used prices from AC Nielsen and from Orzechowski and Walker (2008), in Canada, we obtained province level prices from the Statistics Canada. The AC Nielsen prices reflect price promotions/discounts and were consistently lower than the self-reported prices from the survey. The prices in Orzechowski and Walker represent full retail prices and were consistently higher than the self-reported prices. For instance in the United States, the average AC Nielsen price was \$3.02 and the average price from Orzechowski and Walker was \$3.60.

There are three dichotomous indicators for the level of education/income, low, medium, and high to capture the differences across the four countries between their different education systems and income distribution. See (Thompson et al. (2006) for the details.

We controlled for nicotine dependence by the number of cigarettes consumed per week.

The extent of price promotions is measured by a cross country average of five dichotomous indicators for sales promotion activities: cigarette advertisements/promotions on shop/store windows or inside shops/stores, free samples of cigarettes, cigarette price offers, free gifts or special discount offers, and competitions linked to cigarettes. The U.S. smokers were most exposed to these promotions with the average smoker noticing 2.69 activities in the last six months before the survey. United Kingdom, Australian, and Canadian smokers were exposed to 1.75, 1.16 and 1.01 promotion activities, respectively. This variable is used for descriptive purposes only since the country dichotomous indicators capture the different level of the price promotion exposure in the models.

Analytic Methods

We applied the following Probit model to estimate expected quitting in response to a hypothetical 50% price increase:

$$EQ_{is} = \beta_0 + \beta_1 P_{is} + \beta_2 Y_{is} + \beta_3 X_{is} + \beta_4 CAN + \beta_5 UK + \beta_6 AUS + \varepsilon_{is}, \quad (1)$$

where EQ_{is} represents the expected probability of “try to quit smoking” (Model A) or that of “quitting and/or smoking less” (Model B) for an individual (i) living in state/province (s); P_{is} is the price for a pack of cigarettes; Y_{is} is the respondent’s income (i); X_{is} is a vector of sociodemographic characteristics; and UK, AUS, and CAN are dichotomous indicators of a country, which capture differences in each country’s cigarette markets including the impact of other tobacco control policies apart from tobacco tax and smoke-free policies as well as antismoking sentiment.

For the ordinal quit intention scale (Model C), we apply a generalized ordered logit model, which relaxes the assumption of the standard ordinal regression analysis that the explanatory variables have equal effects across the stages of quit intention:

$$S_{is} = \beta_0 + \beta_1 P_{is} + \beta_2 Y_{is} + \beta_3 X_{is} + \beta_4 CAN + \beta_5 UK + \beta_6 AUS + \varepsilon_{is}, \quad (2)$$

where S_{is} represents the scale of quit intention for an individual (i) living in state/province (s) and the other variables as previously defined.

All models were also estimated with a data subset from the United States and Canada because these countries have more regional price variation due to their state/province-base cigarette tax structure.

Results

Table 2 summarizes the results for Models A and B, testing the impact of both price measures separately. Since the magnitude of the hypothetical price increase is derived from the self-reported price, the positive coefficient of the self-reported price means that the larger the magnitude of the price increase, the higher the probability of expected quitting. The state/province average price reflects the prevailing price level in the geographic area where smokers live. The positive coefficient on the price measure means that the higher the general level of cigarette prices (and hence taxes), the higher the probability of expected quitting.

In both Models A and B, cigarette prices are positively associated with the likelihood of smoking fewer cigarettes and/or trying to quit smoking. The self-reported price is statistically significant in both models, while the average state/province price is only statistically significant in Model A. This suggests that the magnitude of the expected price increase is more important than the general level of cigarette prices/taxes when it comes to the intention to reduce cigarette consumption and that the expectation about future cigarette prices could reduce cigarette use even in markets with a range of cigarette price choices. These results hold even after controlling for the impact of smoke-free policies that also capture the antismoking sentiment (results not shown but available upon request).

Both models show that higher smoking intensity (a proxy for the level of addiction) would reduce the probability

of expected quitting and/or lower cigarette consumption. Australian and Canadian smokers are more likely to respond in a way that improves their health compared with American and United Kingdom smokers. The results for sociodemographic variables are mixed with the exception of marital status: Being married increases the probability of expected quitting and/or lower cigarette consumption.

Table 3 examines predictors of Model C. In generalized ordered logit models, variables can have differential impact across quit intention stages. The default generalized ordered logit model is similar to a series of binary logistic regressions. Each model contrasts the value of the dependent variable (and any lower value) with all values above. A positive coefficient means that a higher value of the explanatory variable is associated with a higher likelihood that a smoker is further up on the quit continuum scale. For variables that satisfy the parallel lines assumption and have the same coefficients across the stages of our dependent variable, we present their coefficients only in the first two columns. For variables that have different coefficients across the stages of the dependent variable, we report all their coefficients.

The self-reported price has a differential impact on the quit intention scale with its impact being the largest at the end of the scale leading to quitting (Table 3). The larger the price increase (in absolute terms) that an individual faces, given his/her current brand/price choice, the higher the likelihood that s/he leans toward quitting as opposed to no behavioral change or change in behavior that excludes quitting. The effect of the other price measure is also positive but similar across the stages of quitting: Higher state prices/taxes motivate smokers to move up along the quit intention scale toward quitting.

The level of addiction, as measured by number of cigarettes smoked per day, pushes a smoker away from quitting.

Table 2. Probit models for a response to a 50% hypothetical price increase

Dependent variable	Model A: "Try to quit" (independent of other responses)				Model B: "Try to quit" and/or "smoking fewer" (excluding other responses)			
	All countries		US & Canada		All countries		US & Canada	
Self-reported cigarette price	0.001***		0.002***		0.001***		0.001***	
ITC state/province average cigarette price		0.001***		0.001**		0.000		0.000
Male	0.009	0.008	-0.012	0.012	-0.013	0.002	-0.022	-0.004
Age	-0.004**	-0.004***	-0.002	-0.003*	0.012***	0.011***	0.010***	0.008***
Married	0.211***	0.1841***	0.195***	0.178***	0.087**	0.075*	0.079	0.071
White	0.109**	0.083	0.051	0.007	-0.081	-0.104*	-0.093	-0.137*
Moderate education	0.049	0.044	0.018	0.008	0.131***	0.134***	0.115*	0.105*
High education	-0.191***	-0.205***	-0.246***	-0.253***	-0.003	0.022	-0.002	-0.003
Moderate income	-0.054	-0.025	-0.022	-0.017	0.038	0.054	0.073	0.097
High income	-0.191***	-0.164***	-0.170**	-0.150**	0.061	0.077	0.089	0.122
Cigarettes per day (smoking intensity)	-0.016***	-0.016***	-0.014***	-0.016***	-0.021***	-0.020***	-0.020***	-0.021***
Canada	0.077	0.038	-0.073	0.049	0.303***	0.441***	0.242***	0.448***
UK	-0.135	-0.215*			-0.201**	0.011		
Australia	0.170**	0.112			0.325***	0.434***		
Constant	0.689***	0.605***	0.379**	0.670***	-1.696***	-1.418***	-1.74***	-1.282***
Observations	7,307	7,750	3,876	3,972	7,360	7,796	3,880	3,975

Note. Standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. This table represents the estimates of equation 1.

Table 3. Generalized Ordered Logit models for quit intention scale – all countries

Dependent variable	Category 0: no change in behavior		Category 1: at least one behavior change but no quitting		Category 2: at least one behavior change and quitting	
Self-reported cigarette price	0.001		0.001***		0.002***	
ITC state/province average cigarette price		0.002***		/		/
Male	0.051	0.049	/	/	/	/
Age	-0.011*	-0.016***	-0.005**	-0.006***	0.014***	0.013***
Married	-0.151	0.279***	0.328***	/	0.321***	/
White	0.138	0.060	0.164*	0.126	-0.551***	-0.534***
Moderate education	0.122*	0.116*	/	/	/	/
High education	-0.288***	-0.284***	/	/	/	/
Moderate income	-0.082	-0.039	/	/	/	/
High income	-0.271***	-0.702***	/	-0.285***	/	-0.032
Cigarettes per day(smoking intensity)	0.001	0.006	-0.027***	-0.027***	-0.027***	-0.026***
Canada	-0.661***	-0.645***	0.149	0.111	0.342**	0.254
UK	-0.300**	-0.374**	/	/	/	/
Australia	-0.413*	-0.458**	0.237**	0.167	0.474***	0.293
Constant	4.180***	3.743***	1.019***	0.925***	-3.657***	-3.560***
Observations	7,399	7,852	7,399	7,852	7,399	7,852

Note. Standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. This table represents the estimates of equation 2.

The sign “/” indicates that the variable satisfies the parallel lines assumption and have same coefficient across equations.

Compared with U.S. smokers, Canadian and Australian smokers are significantly more likely to respond with either no change in smoking behavior or with quitting (the two extreme responses), while U.K. smokers are significantly more likely to respond with no change in smoking behavior. Being married encourages smokers to move toward quitting, but high level of education and income seems to work in the opposite direction.

Table 4 presents results of Model C when the sample is reduced to U.S. and Canadian respondents only. The findings confirm that a larger cigarette price increase, and a higher price

level motivates a smoker to move up along the quit intention scale. The impact of both price measures is similar across stages, with the self-reported price having a larger impact. In all specifications, Canadian smokers tend to migrate toward both extremes of the cessation scale: either no change in smoking behavior or “trying to quit” only. Canadian smokers are therefore less likely to engage in compensatory behavior compared with U.S. smokers.

Results using the external price measures with U.S. and Canadian data produced estimates similar to those presented above and are available on request.

Table 4. Generalized Ordered Logit models for quit intention scale – US and Canada only

Dependent variable	Category 0: no change in behavior		Category 1: at least one behavior change but no quitting		Category 2: at least one behavior change and quitting	
Self-reported cigarette price	0.003***		/		/	
ITC state/province average cigarette price		0.002***		/		/
Male	0.010	0.052	/	/	/	/
Age	0.009	0.002	-0.004	-0.006**	0.010*	0.009
Married	-0.283	-0.232	0.316***	0.287***	0.320*	0.340**
White	-0.054	-0.189	0.051	-0.010	-0.602***	-0.605***
Moderate education	0.060	0.038	/	/	/	/
High education	-0.408***	-0.401***	/	/	/	/
Moderate income	-0.053	-0.043	/	/	/	/
High income	-0.262**	-0.237**	/	/	/	/
Cigarettes per day(smoking intensity)	-0.023***	0.002	/	-0.026***	/	-0.035***
Canada	-1.005***	-0.646***	-0.094	0.102	0.270	0.421**
Constant	3.418***	3.447***	0.627**	1.074***	-3.866***	-3.275***
Observations	3,890	3,988	3,890	3,988	3,890	3,988

Note. Standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. This table represents the estimates of equation 2.

The sign “/” indicates that the variable satisfies the parallel lines assumption and have same coefficient across equations.

All models we also estimated with an interaction term between sociodemographic variables (age, gender, income, and education) and price measures to investigate a difference in responsiveness among population subgroups. Generally, interactions were not found to be statistically significant. The exception was moderate income that increased the impact of price in all models. This means that smokers with moderate incomes were more responsive to price changes than those with low or high incomes. The inclusion of the interaction terms did not statistically alter the results of the regressions. These analyses are available on request.

Discussion

The ITC data confirmed that cigarette prices were lowest in the United States relative to Australia, Canada, and the United Kingdom even after adjusting for the purchasing power parity of various currencies. In addition, U.S. smokers were exposed to more price promotions than those in the other three countries. Consequently, a higher percentage of U.S. smokers reported that they would find a cheaper source of their favorite brand and a lower percentage of them expect to quit in response to a hypothetical increase in cigarette price compared with smokers in Australia, Canada, and the United Kingdom.

Nevertheless, anticipated higher cigarette prices increase the probability of adult smokers' contemplating quitting and/or lower cigarette use in all four countries, with stronger impact in Australia and Canada. The magnitude of a future price increase seems to be more important in promoting intention to quit and/or cutback on smoking than the general level of cigarette prices in the area where a smoker lives.

Comparing only U.S. and Canadian smokers confirmed that Canadian smokers are more likely to expect to quit and/or to smoke fewer cigarettes, that is, to expect behavior changes that lead to better health. Given that U.S. smokers are more exposed to various price promotions at the point of sale, it might be easier for them to avoid a price increase by obtaining cigarettes from cheaper sources. Since there is a greater diversity of cigarette prices in the United States compared with Canada and the U.S. multitiered pricing has been in place longer than in Canada, U.S. smokers may be also more willing to switch their brands to accommodate the higher cigarette prices.

This study makes several contributions to existing literature. It is the first academic study to employ a hypothetical increase in price to analyze expected cessation among adult smokers, though a similar study has been conducted among adolescents (Ross et al., 2005). Second, the positive impact of an anticipated higher price on the expected reduction in cigarette use appears to be fairly robust across adult smokers from four highly industrialized countries despite their differences in cigarette markets. Third, there is some evidence that the availability of alternative (cheaper) cigarette sources may reduce but not eliminate the impact of higher prices/taxes on smokers' expected behavior that has been linked to future cessation.

We found that the measures of quit intention motivated by a hypothetical price increase used in this study are positively correlated with the average readiness for smoking cessation in a longitudinal sample, a subset of the sample used here, followed

for 3 years. On the other hand, the expectation of no behavioral change or a change that does not include quitting is negatively correlated with being motivated to quit during the next three years. This holds for the whole sample as well as for smokers in each country and suggests that the question about a hypothetical response to a price increase can be used as predictor of future quit attempts and actual cessation.

The question remains whether people who self-report an intention to change their smoking behavior actually do so when confronted with a price increase. This question has been addressed in a separate study using the longitudinal sample (Ross et al., 2010). The results confirmed that smokers living in areas with higher cigarette prices are significantly more motivated to quit and have higher likelihood of quitting. There is also some evidence that price increases over time increase quit motivation.

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Declaration of Interests

None of the authors have a conflict of interests related to this manuscript. The study was written with full access to all relevant data. The sponsors of this research exerted not editorial influence over the written text. The manuscript is not under review—and will not be under review—by another publication while it is being considered by Nicotine & Tobacco Research. The Research has been approved by the Ethics Committees at the Cancer Council Victoria, Australia; Roswell Park Cancer Institute, USA; the University of Waterloo, Canada; the University of Strathclyde, UK; and the RTI International, USA.

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