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# Malaysian and Thai smokers' beliefs about the harmfulness of 'light' and menthol cigarettes

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## ABSTRACT

**Objective** This study explored the extent to which Malaysian and Thai smokers believe "light" and menthol cigarettes are less harmful than "regular" cigarettes and the correlates of these beliefs.

**Methods** The study used data from wave 1 of the International Tobacco Control Southeast Asia Survey. 2006 adult smokers (95.3% male) from Malaysia and 2000 adult smokers (94.5% male) from Thailand were interviewed face to face in 2005.

**Results** 29% of Malaysian respondents reported currently smoking light cigarettes and 14% menthols, with 19% agreeing that lights are less harmful and 16% agreeing that menthols are less harmful. 38% of Thai respondents reported currently smoking light cigarettes and 19% menthols, with 46% agreeing that lights are less harmful and 35% agreeing that menthols are less harmful. Malaysian smokers reporting current use of light or menthol cigarettes were more likely to believe that they are less harmful. Reported use of lights did not relate to beliefs for Thai respondents. The belief that light and/or menthol cigarettes are less harmful was strongly related to the belief that they have smoother smoke.

**Conclusions** The experience of smoother smoke is likely to produce some level of belief in reduced harm, regardless of how brands are labelled and whether or not Federal Trade Commission FTC/International Organisation for Standardisation tar, nicotine and carbon monoxide yield figures are used.

"Light" (or "mild" or "low tar") and "menthol" cigarettes are two classes of factory-made cigarette that are commonly distinguished from "regular" or "full flavour" cigarettes. Major brand families frequently include light and menthol varieties, marketed alongside a regular one. Some brand varieties may also be marketed as both light and menthol. Colour coding of packs is also used to distinguish light and menthol varieties from regular ones.

The tobacco industry generally claims that light and menthol brands exist merely to cater to individual taste preferences. However, some smokers believe that they will experience reduced harm by smoking light or menthol cigarettes instead of regular ones<sup>1-3</sup>. Potential sources of belief include direct sensory impressions, marketing imagery associating light or menthol brands with healthiness and folk beliefs about the medicinal properties of menthol and quantitative information about tar, nicotine and carbon monoxide yields.

Both light and menthol cigarettes have mechanisms for reducing sensory perceptions that

smoking is harmful.<sup>1-3</sup> In the case of cigarettes that are frequently labelled light, mild or low tar, the smoke usually tastes weaker and produces less irritation to the throat and chest than smoke from regular cigarettes because it is inhaled in larger, more dilute puffs.<sup>2</sup> This is achieved principally through a combination of a higher level of filtration of the mainstream smoke by longer and denser filters and dilution of mainstream smoke with fresh air by filter ventilation. In the case of menthol cigarettes, vapourised menthol carried in the mainstream smoke masks sensations of harshness, partly through anaesthetising irritation receptors in the upper respiratory tract and partly through stimulating cold receptors.<sup>4 5</sup> Menthol also masks the stale after taste of tobacco smoke by providing a lingering pleasant taste.

In many countries, factory-made cigarettes carry information about Federal Trade Commission/International Organisation for Standardisation (ISO) machine measurements of tar, nicotine and carbon monoxide, implying that cigarettes with lower yields reduce smokers' exposures to hazardous smoke constituents. The practice of yield labelling began, while expert opinion held that smoking lower yield cigarettes would indeed reduce exposures.<sup>6 7</sup> However, that earlier expert consensus has broken down over the last two decades as evidence mounted that:

1. Smokers compensate for reduced nicotine yields.<sup>8 9</sup>
2. Lower yield cigarettes have been designed to facilitate compensation.<sup>2 10</sup>
3. Anticipated population-level reductions in disease did not eventuate.<sup>11</sup>

Nonetheless, the belief that low tar cigarettes are less harmful persists among consumers and even public health officials in many countries. Finally, the marketing of light or low tar brands has long used imagery suggesting healthiness,<sup>12 13</sup> and even the restricted ongoing marketing in most jurisdictions may be adequate to influence smokers' beliefs. The use of the term light has been a particular focus of concern insofar as it is widely used to label processed foods and beverages with reduced fat, sugar or alcohol contents and may thus produce more associations with "healthiness" than other terms used in cigarette brand names.

Menthol cigarettes, unlike lights, have never been believed by experts to have potential public health benefits (at least as far as we are aware). However, the other sources of persuasion appear to have been active. The experience of menthol cigarettes

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producing smoother smoke will occur irrespective of any claims made about them by either public health experts or the tobacco industry (notwithstanding the extent to which “smoothness” is suggestible). In recent years, the marketing of menthol brands has used imagery similar to that used in marketing light brands to imply healthiness.<sup>12 13</sup> However, in the more distant past, advertising for menthol brands explicitly referred to the medicinal properties of menthol,<sup>12 14</sup> and many smokers apparently smoked menthol cigarettes when coughs and colds prevented them smoking their regular brands.<sup>15</sup> Currently held folk beliefs about the medicinal properties of menthol may also promote beliefs that menthol cigarettes are less harmful, at least within specific cultural settings.<sup>16</sup>

Existing research on smokers’ beliefs about light cigarettes has concentrated on Western countries with comparable histories concerning tobacco control policies and tobacco industry conduct.<sup>1 3 17 18</sup> There has been little research on smokers’ beliefs about menthol cigarettes, and extant research is mostly qualitative.<sup>14–16</sup> There is also no research that we are aware of that has dealt with smokers’ beliefs about both light and menthol cigarettes simultaneously. In this paper, we attempt to address these deficiencies by exploring Malaysian and Thai smokers’ beliefs about the relative harmfulness of both light and menthol cigarettes.

Malaysian and Thai smokers’ beliefs about light and menthol cigarettes are likely to have somewhat different determinants to those of smokers in the predominantly English-speaking countries where research has previously concentrated. First, ISO measured tar, nicotine and carbon monoxide yields are not printed on packs in Thailand. In Malaysia, the maximum permissible tar and nicotine yields are printed on packs, implying that these levels are important but not suggesting differential harm between one brand and another. Second, we understand that there has never been widespread expert endorsement of light cigarettes as less harmful in either Malaysia or Thailand. This contrasts with countries, such as Australia, Canada, the UK and the USA, where, between the mid-1960s and mid-1990s, experts frequently claimed that light cigarettes reduce harm. Finally, there has been a relatively brief history of marketing of light brands in both Malaysia and Thailand. Light varieties (labelled in English only) began to be marketed in both Malaysia and Thailand around 1992. The Thailand Tobacco Monopoly began introducing light varieties of its major brands in 1994 (with light in English on one side of the pack and transcribed in Thai on the other). However, as far as we can tell, the Thailand Tobacco Monopoly has not aggressively marketed its light varieties. Thus, while many Malaysian and Thai smokers will presumably have encountered both public health and tobacco industry messages about tar, nicotine and carbon monoxide yields and less harmful cigarettes, it is unlikely that they have been as strongly influenced by these messages as, say, Australian, Canadian, UK and US smokers.

The present study uses responses from wave 1 of the International Tobacco Control Southeast Asia (ITC-SEA) Survey. We sought to determine the proportions of smokers who are current or past users of light and menthol cigarettes, to relate self-reported use of light and menthol cigarettes to beliefs about their relative harmfulness and to determine a range of other demographic and behavioural correlates of use.

**METHODS****Respondents**

The respondents were 2006 adult smokers (95.3% male) from Malaysia and 2000 adult smokers (94.5% male) from Thailand,

surveyed between January and March, 2005. Those reporting smoking exclusively hand-rolled cigarettes were excluded from the present study, leaving samples of 1670 for Malaysia and 1370 for Thailand.

**Sampling design**

Respondents were selected using stratified multistage sampling. In Malaysia, respondents were selected from one state within each of the six zones. In Thailand, respondents were drawn from Bangkok and two provinces from each of the four major regions. Within each state, Malaysian respondents were drawn from two rural and two urban districts, with probability proportional to population size. Subdistricts and communities were selected within urban and rural districts, with probability proportional to population size in both Thailand and Malaysia, for a total of 125 sampling clusters in each country. In Malaysia, the frame was provided by the Ministry of Health, and, where necessary, the cluster quotas were divided among several subclusters or enumeration blocks. Households were selected within each cluster using systematic sampling methods until the respondent quota in each cluster was filled. Once an eligible household was identified and contacted, interviewers enumerated all household members. In Thailand, a maximum of three respondents was selected from each household: one female adult smoker, one male adult smoker and one youth respondent. In Malaysia, one adult non-smoker per household was also surveyed, for a maximum of four respondents per household. In households with more than one eligible respondent per quota cell, respondents were randomly selected using a “Kish Grid”. Adult smokers were current smokers who smoked at least weekly and had smoked at least 100 cigarettes in their lifetime.

**Interview procedure**

Respondents were interviewed face to face for approximately 40 minutes, in Malay or English in Malaysia (according to respondent preference) and in Thai in Thailand. All survey questions and study procedures were standardised as far as possible across the two countries.

**Measures****Outcome variables****Use of light and menthol cigarettes**

Malaysian respondents were asked whether their usual brand was the kind called ‘ringan’ (or light), and Thai respondents were asked whether their brand was light or strong taste (‘rot orn’ or ‘rot choon’). Both Malaysian and Thai respondents were asked if their usual brand was menthol. Those indicating otherwise were asked whether they had ever tried these kinds of cigarettes.

**Beliefs about light and menthol cigarettes**

Respondents were asked to indicate on a 5-point scale on how much they agree or disagree with the following statements: “Light cigarettes make it easier to quit smoking”; “Light cigarettes are less harmful than regular cigarettes”; “Light cigarettes are smoother on your throat and chest than regular cigarettes”; “Menthol cigarettes are less harmful than regular cigarettes”; and “Menthol cigarettes are smoother on your throat and chest than regular cigarettes”.

**Predictor variables**

Respondents were asked to provide age, annual household income and highest level of education. Sex and region (urban or rural) were also coded. In addition, the number of cigarettes

smoked per day, time to first cigarette upon waking, types of cigarettes (factory-made or hand-rolled), intention to quit and self-efficacy to quit, whether they had ever quit before along with belief about smoking having damaged their health and how

worried they were that smoking would damage their health were assessed. They were also asked about their knowledge of the seven different health effects of smoking (ie, whether smoking causes stroke, impotence in male smokers, lung cancer

**Table 1** Overview of Malaysian and Thai cigarette markets and sample characteristics

	Malaysia	Thailand
Adult prevalence (within last month)		
Male	46.4%	42.2%
Female	1.6%	2.8%
% Smokers factory made only#	82.6	41.8
% Smokers RYO only#	7.6	32.9
% Mixed FM and RYO#	9.8	25.3
Tar, nicotine, CO labelling	Maximum only (20 mg tar, 1.5 mg nicotine) since 1994	Never
Lights branding	English only Since 1992	Imported: English (since 1992) TTM: English/Thai (since 1994) (banned Mar 2007)
Sample characteristics		
N	1670	1370
Age groups (%)*		
18–24	18.4	9.8
25–39	34.5	31.4
40–54	31.5	42.5
55+	15.6	16.3
Sex		
Female (%)*	3.9	3.9
Locality		
Urban (%)*	63.7	31.5
Education levels (%)		
No schooling/elementary	22.7	65.3
Secondary	64.5	24.0
Post-secondary	12.8	10.7
Income (%)		
Low	32.8	30.5
Medium	32.4	32.4
High	34.8	37.2
Cig per day (%)*		
5 or less	15.0	15.1
6–10	28.9	34.9
11–20	50.5	41.4
21+	5.6	8.6
Time to first cig (%)*		
Immediately	10.7	24.6
Before breakfast	10.3	43.1
With/after breakfast	70.8	28.5
Later in the day	8.3	3.9
Plan to quit		
Yes (%)*	54.5	42.6
Made quit attempt before (%)*	59.7	80.3
Awareness of smoking harm		
Mean (SD)	5.30 (0.13)	5.71 (0.07)
Quit self-efficacy (%)		
Not at all sure	38.5	35.7
Somewhat sure	41.7	36.9
Very sure	14.5	17.8
Extremely sure	5.2	9.6
Belief smoking has damage health (%)*		
Not at all	27.8	6.1
Somewhat	54.1	28.2
Very much	18.1	65.7
Worried smoking will damage health (%)*		
Not at all	18.6	7.2
Somewhat	55.7	36.9
Very much	25.7	55.9

TTM, Thailand Tobacco Monopoly; RYO roll your own.

\*Country differences at  $p < 0.05$ .

#Estimates from Young *et al.*<sup>19</sup>

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in smokers, decay in the lungs of smokers, stained teeth in smokers and premature ageing and lung cancer in non-smokers from secondhand smoke), and these were combined into a scale.

### Data analysis

All analyses were conducted using complex survey commands in Stata/SE version 8.2 to adjust for clustering, stratification and sampling weights. Conventional  $\chi^2$  tests were employed to examine by-country differences in use of and beliefs about lights and menthol cigarettes. Logistic regression models were conducted to determine correlates of current use of light and menthol cigarettes and linear regression models to examine correlates of beliefs about the health benefits of light and menthol cigarettes. Country differences were also examined using a two-way interaction term between countries, and each of the predictors was included in the model.

## RESULTS

### Sample characteristics

Table 1 provides some background to cigarette markets in Malaysia and Thailand along with sample characteristics. Compared to the Malaysian sample, the Thai respondents were older, mainly from rural region and of lower education background, but there was no difference in gender distribution. Other differences include Thai respondents being heavier smokers and more addicted than their Malaysian counterparts. However, Thai respondents were more knowledgeable about the health effects of smoking and also more likely to have tried to quit in the past than the Malaysian respondents. The Thai respondents were also more likely to believe that smoking has damaged their health and also were more worried about future damage from smoking.

### Prevalence of use and association with beliefs

Table 2 shows the percentages of respondents reporting current, past or never use of light and menthol cigarettes. Overall, Thai respondents were significantly more likely than Malaysian respondents to report being a current or ever user of light cigarettes (current users: odds ratio (OR)=6.47, 95% confidence interval (95% CI) 3.72 to 11.26,  $p<0.001$ ; ever users: OR=18.93, 95% CI 9.64 to 37.17,  $p<0.001$ ). Similar results were found for use of menthol cigarettes (current users: OR=5.08, 95% CI 3.15 to 8.18,  $p<0.001$ ; ever users: OR=13.90, 95% CI 7.96 to 24.27,  $p<0.001$ ).

Data coding did not permit verification of whether smokers' usual brand was labelled as light. For Thai respondents, 34% of those smoking non-menthol cigarettes and 96% of those smoking menthol cigarettes reported that their usual brand was light. For Malaysian respondents, 39% reported that their usual brand was light, regardless of whether it was menthol or non-menthol.

Table 2 also shows the percentages of respondents agreeing with interview items that light cigarettes are (a) less harmful, (b) make quitting easier and (c) are smoother and that menthol cigarettes are (a) less harmful and (b) smoother.

### Correlates of current use of lights and menthols

Table 3 presents correlates of current use of light and menthol cigarettes. In general, patterns of association with use of both light and menthol cigarettes were very similar for sociodemographic variables, such as sex, locality, region and education across the two countries. Current light cigarette users were significantly more likely to be female and of higher education

**Table 2** Percentages of survey respondents' self-reported lights and menthol use and relationships between use and beliefs

	Malaysia (MY) N = 1670	Thailand (TH) N = 1370	Total N = 3040
% Using lights			
Current	28.9	37.9	32.8
Past	13.2	50.4	29.4
Never	57.9	11.7	37.8
% Using menthol			
Current	14.1	19.8	16.6
Past	15.8	60.8	35.3
Never	70.0	19.3	48.1
% Agreeing that...			
Lights less harmful			
Current user	31.1	42.7	37.0
Past user	20.3	47.4	40.5
Never user	12.3	48.2	17.3
Overall	18.9	45.7	30.3
Lights make quitting easier			
Current user	30.6	52.8	41.9
Past user	29.2	52.8	46.8
Never user	14.7	54.4	20.1
Overall	21.0	52.9	34.6
Lights are smoother			
Current user	43.5	58.8	51.3
Past user	43.1	57.4	53.8
Never user	22.1	55.2	26.6
Overall	31.1	57.7	42.4
Menthols less harmful			
Current user	43.4	38.9	41.1
Past user	14.8	33.8	29.1
Never user	10.7	33.6	14.8
Overall	16.0	34.8	24.0
Menthols smoother			
Current user	59.2	61.7	60.5
Past user	40.4	46.6	45.0
Never user	27.1	37.5	28.9
Overall	33.6	47.8	39.6

background in both Malaysia and Thailand. Smokers of exclusively factory-made cigarettes from both countries were also more likely to report being current users of light and menthol cigarettes. The belief measures showed less consistent association across the two countries, with the exception of the belief that menthol cigarettes are smoother, where these beliefs were positively associated with current menthol use in both countries. Current light cigarette use was positively associated with the belief that lights are less harmful in Malaysia but not in Thailand. Current menthol use was also associated with the belief that they are less harmful in Malaysia but not Thailand.

### Predictors of beliefs about lights and menthols

Tables 4 and 5 present linear regression models predicting beliefs that light cigarettes are easier to quit and less harmful and that menthol cigarettes are less harmful in Malaysia and Thailand. Only those independent variables that were significantly related to the dependent variables are presented. The variables that were controlled for in all of the models included age, sex, locality (urban vs rural), locality (Selangor/Bangkok vs other), income, education level, time to first cigarette of the day, types of cigarettes smoked (factory made vs mixed factory made and roll your own), quit self-efficacy, awareness of smoking harm, belief that smoking has damaged health, concern that smoking will damage health, light or menthol cigarette use (current vs never

**Table 3** Correlates of current use of light and menthol cigarettes

Correlates	Current light use		Current menthol use	
	Malaysia N = 1302 OR (95% CI)	Thailand N = 1259 OR (95% CI)	Malaysia N = 1317 OR (95% CI)	Thailand N = 1259 OR (95% CI)
Sex				
Female	2.93 (1.31 to 6.55)*	2.97 (2.01 to 4.39)***	2.20 (0.88 to 5.45)	1.84 (0.91 to 3.72)
Male	Ref	Ref	Ref	Ref
Locality				
Rural	Ref	Ref	Ref	Ref
Urban	1.38 (0.59 to 3.18)	1.19 (0.86 to 1.65)	1.11 (0.38 to 3.29)	1.63 (1.00 to 2.64)*
Region				
Selangor/Bangkok	0.55 (0.19 to 1.62)	0.64 (0.41 to 0.99)*	0.24 (0.09 to 0.62)**	0.60 (0.36 to 1.02)
Other	Ref	Ref	Ref	Ref
Education				
No schooling/elementary	Ref	Ref	Ref	Ref
Secondary	1.26 (0.89 to 1.78)	1.73 (1.34 to 2.23)***	1.27 (0.59 to 2.73)	1.34 (0.87 to 2.06)
Post-secondary	2.07 (1.23 to 3.48)**	2.17 (1.45 to 3.27)**	0.80 (0.29 to 2.21)	1.49 (0.85 to 2.61)
Time to first cig of day				
Immediately	Ref	Ref	Ref	Ref
Before breakfast	0.48 (0.21 to 1.11)	1.10 (0.73 to 1.66)	0.79 (0.27 to 2.31)	1.17 (0.75 to 1.82)
With/after breakfast	0.92 (0.49 to 1.73)	1.92 (1.13 to 3.25)*	0.54 (0.25 to 1.15)	1.74 (0.80 to 3.79)
Later in the day	0.77 (0.22 to 2.69)	3.04 (1.21 to 7.64)*	0.55 (0.22 to 1.39)	1.96 (0.85 to 4.49)
Types of cigarettes				
Factory-made (FM) only	2.07 (0.65 to 6.57)	6.79 (3.99 to 11.54)***	1.40 (0.49 to 4.05)	6.84 (2.61 to 17.93)***
Mixed of FM and RYO	Ref	Ref	Ref	Ref
Quit self-efficacy				
Not at all sure	Ref	Ref	Ref	Ref
Somewhat sure	0.94 (0.49 to 1.79)	1.04 (0.80 to 1.36)	0.94 (0.60 to 1.47)	0.82 (0.57 to 1.17)
Very sure	0.99 (0.51 to 1.94)	1.85 (1.39 to 2.47)***	1.12 (0.57 to 1.23)	1.69 (1.06 to 2.68)*
Extremely sure	0.81 (0.19 to 3.39)	1.04 (0.65 to 1.66)	1.42 (0.64 to 3.15)	1.16 (0.63 to 2.14)
Awareness of smoking harm	1.01 (0.92 to 1.12)	0.88 (0.78 to 0.99)*	0.92 (0.81 to 1.04)	0.97 (0.81 to 1.18)
Lights easier to quit				
Agreeing	1.58 (0.89 to 2.79)	1.21 (0.91 to 1.59)	—	—
Other	Ref	Ref	—	—
Lights less harmful				
Agreeing	2.03 (1.23 to 3.34)**	0.87 (0.59 to 1.27)	—	—
Other	Ref	Ref	—	—
Lights smoother				
Agreeing	1.36 (0.87 to 2.14)	0.99 (0.74 to 1.34)	—	—
Other	Ref	Ref	—	—
Menthol less harmful				
Agreeing	—	—	4.65 (2.42 to 8.93)***	0.99 (0.50 to 1.96)
Other	—	—	Ref	Ref
Menthol smoother				
Agreeing	—	—	2.24 (1.16 to 4.31)*	2.29 (1.32 to 3.98)**
Other	—	—	Ref	Ref

OR, odds ratio; 95% CI, 95% confidence interval; RYO, roll your own. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

The following non-significant variables were included in the regression models but not reported in the table above: age, income, cigarette per day, intention to quit, ever quit before, belief that smoking has damaged health and worried smoking will damage health.

and past vs never) and belief that light or menthol cigarettes are smoother. Belief that lights are smoother was the strongest predictor of beliefs that lights are less harmful and make quitting easier in both Malaysia and Thailand. Belief that menthol cigarettes are smoother was the strongest predictor of the belief that they are less harmful in Thailand, whereas current use was the strongest predictor in Malaysia.

## DISCUSSION

Thirty-eight per cent of Thai smokers and 29% of Malaysian smokers surveyed in wave 1 of the ITC-SEA Survey smoked cigarettes described respectively as “light taste” (rot orn) or light (ringan/light). These are somewhat lower levels of reported light cigarette use than in Australia, Canada or the USA, where more than half of smokers reported smoking light or mild brands in

2002 but similar to the level reported in the UK (where 40% reported smoking lights in 2002).<sup>17</sup> However, it is unlikely that smokers identified “the same” cigarettes as light in all six countries.

One challenge in comparing prevalence of use and beliefs about light cigarettes across countries relates to differences in the way light cigarettes are identified by smokers, especially where language differences are involved. Light cigarettes might be operationally defined as those with the word light printed on the pack (and possibly mild). However, many smokers may use the term light interchangeably with low tar, where yield information is available. They may also apply it to cigarettes that taste lighter, whether from higher levels of filtration and filter ventilation or from tobacco blending or flavour additives. In both of the latter two instances, “lightness” will exist relative to a regular or full flavour benchmark.

## Research paper

**Table 4** Correlates of beliefs that light cigarettes have some health benefits

Correlates	Believing Lights are easier to quit						Believing Lights are less harmful					
	Malaysia			Thailand			Malaysia			Thailand		
	N = 1308			N = 1260			N = 1303			N = 1260		
	Beta	t	p Value	Beta	t	p Value	Beta	t	p Value	Beta	t	p Value
Age (years)	0.00	0.18	0.860	<b>0.01</b>	<b>2.70</b>	<b>0.012</b>	-0.00	-0.21	0.839	<b>0.01</b>	<b>4.55</b>	<b>&lt;0.001</b>
Selangor/Bangkok (vs other)	-0.05	-0.49	0.628	<b>-0.31</b>	<b>-2.42</b>	<b>0.023</b>	-0.18	-1.02	0.323	<b>-0.26</b>	<b>-2.73</b>	<b>0.011</b>
Education	-0.08	-1.31	0.280	<b>-0.12</b>	<b>-2.06</b>	<b>0.049</b>	<b>-0.15</b>	<b>-3.02</b>	<b>0.008</b>	<b>-0.19</b>	<b>-3.81</b>	<b>0.001</b>
Factory-made vs mixed	-0.14	-0.93	0.365	-0.13	-1.69	0.103	0.09	1.00	0.333	<b>-0.23</b>	<b>-3.57</b>	<b>0.001</b>
Light cigarette use												
Current vs never	<b>0.25</b>	<b>2.74</b>	<b>0.014</b>	0.06	0.63	0.531	<b>0.30</b>	<b>2.57</b>	<b>0.021</b>	0.04	0.40	0.695
Past vs never	0.05	0.37	0.714	-0.04	-0.43	0.674	-0.13	-1.15	0.269	-0.02	-0.13	0.897
Believing light is smoother	<b>0.47</b>	<b>8.01</b>	<b>&lt;0.001</b>	<b>0.58</b>	<b>16.12</b>	<b>&lt;0.001</b>	<b>0.39</b>	<b>8.33</b>	<b>0.001</b>	<b>0.52</b>	<b>22.68</b>	<b>0.001</b>
R <sup>2</sup>	0.29			0.34			0.26			0.31		

Numbers in bold are statistically significant.

We were unable to determine how many Malaysian and Thai smokers actually smoked brands labelled light or a related term. However, according to the *World Market for Tobacco 2005*,<sup>20</sup> in 2004, 87% of Malaysian brands had ISO tar yields above 10 mg, 13% between 6 and 10 mg and 1% below 6 mg, whereas 67% of Thai brands had tar yields above 10 mg and 33% between 6 and 10 mg. There is no indication as to which of these brands were labelled as light or mild, but the higher proportion of the Thai market falling below 10 mg tar yield might partly explain why more Thai smokers reported smoking light taste brands.

However, it should be noted that 96% of Thai smokers responding that they usually smoked a menthol brand also responded that they usually smoked a light taste brand. It is implausible that these respondents were all smoking brands labelled both light and menthol. For Thai smokers, light taste clearly encompasses a greater variety of cigarettes than those with higher levels of filtration and filter ventilation that are frequently labelled as light. For Malaysian smokers, it is more plausible that those answering that their usual brand was ringan/light generally smoked a brand labelled light.

Asking Thai respondents whether their usual cigarette had a light taste possibly led them to de-emphasise other factors that could contribute to decisions about lightness, such as labelling. Asking Thai smokers both whether their usual brand had a light taste (rot orn) and whether it was light would have revealed whether one mode of questioning pushed respondents to consider direct experiences more. However, in cognitive interviews that explored the range of smokers' understandings of the survey items, 55% of Thai respondents agreed that taste and other sensations provided the important differences between light taste cigarettes and cigarettes "in general", with only 10%

responding that differences in tar and nicotine were important. This strongly suggests that the finding in the main survey of the importance of "smoothness" for Thai smokers was not simply an effect of how the item was phrased.

Multivariate analyses showed that believing lights and menthols are less harmful was significantly correlated with believing that the smoke is smoother, for both Malaysian and Thai smokers. It should be noted that the relationships were stronger for light cigarettes than menthol cigarettes. Nonetheless, these results are suggestive of the experience of smoother smoke being a sufficient cause of belief in reduced harmfulness, rather than merely reinforcing pre-existing beliefs.

Further investigations may resolve the question of the extent to which Malaysian and Thai smokers believe that the medicinal properties of menthol provide a good reason for believing menthol cigarettes are less harmful. Further investigations will also resolve the question of whether belief that menthol cigarettes are less harmful is as strong elsewhere. Previous survey research has focused strongly on beliefs about light cigarettes, probably mostly because they hold such substantial market share in industrialised countries but also partly because they have a history of expert endorsement as less harmful, whereas menthol cigarettes do not. However, expert endorsement and discourses may be less important in determining smokers' beliefs than what researchers and tobacco control advocates have generally assumed.

Respondents from Bangkok were less likely than those from the provinces to agree that light and menthol cigarettes are less harmful and that light cigarettes make quitting easier. Bangkok residents thus appear to be better educated about the current expert consensus on light and menthol cigarettes than Thais

**Table 5** Correlates of beliefs that menthol cigarettes are less harmful

Correlates	Believing menthols are less harmful					
	Malaysia			Thailand		
	N = 1317			N = 1260		
	Beta	T	p Value	Beta	t	p Value
Age (years)	-0.00	-1.23	0.237	<b>0.00</b>	<b>3.24</b>	<b>0.003</b>
Sex (female vs male)	<b>0.09</b>	<b>2.28</b>	<b>0.037</b>	-0.03	-0.39	0.702
Selangor/Bangkok (vs other)	-0.02	-0.51	0.614	<b>-0.13</b>	<b>-3.10</b>	<b>0.004</b>
Education	-0.03	-1.01	0.327	<b>-0.08</b>	<b>-4.56</b>	<b>&lt;0.001</b>
Menthol cig use						
Current vs never	<b>0.28</b>	<b>5.47</b>	<b>&lt;0.001</b>	-0.01	-0.18	0.862
Past vs never	0.01	0.23	0.819	-0.01	-0.18	0.856
Believing menthol is smoother	<b>0.11</b>	<b>3.73</b>	<b>0.002</b>	<b>0.19</b>	<b>11.18</b>	<b>&lt;0.001</b>
R <sup>2</sup>	0.21			0.26		

Numbers in bold are statistically significant.

### What is already known about this subject

Previous research has shown that both the provision of tar, nicotine and carbon monoxide yield information and direct experiences of the relative smoothness of smoke contribute to the belief that “light” and “ultralight” cigarettes are less harmful than “regular” cigarettes.

### What this study adds

This study investigates Malaysian and Thai smokers’ beliefs about the relative harmfulness of both light and menthol cigarettes. Previous research has focused on smokers’ beliefs about light (or “low tar”) cigarettes in English speaking countries, where low tar cigarettes had received long-term endorsement from public health experts, beginning in the 1960s, with endorsements gradually being withdrawn from the 1990s onwards.

from provincial areas and Malaysians. This may be a result of public education efforts having concentrated on Bangkok or may be a more indirect consequence of Bangkok being a highly “international” city, where there is ready access to English language media, facilitating dissemination of the new expert consensus.

Malaysia did not have a capital city effect of comparable strength to the “Bangkok effect”. However, residents of Selangor (the state containing Kuala Lumpur) were less likely than those from elsewhere to currently smoke menthol cigarettes. This may simply be a matter of fashion. Alternatively, it may reflect greater belief in the medicinal properties of menthol in rural settings, where there is likely to be greater reliance on folk remedies.

Since wave 1 of the ITC-SEA Survey was conducted, Thailand has banned the use of light and mild brand descriptors (effective as of March 23, 2007). Malaysia can be expected to follow, in accordance with Article 11 of the Framework Convention on Tobacco Control.<sup>21</sup> However, when the terms light and mild were prohibited in Australia, the Australian Competition and Consumer Commission explicitly approved of their replacement with terms such as “smooth” and “fine”, giving the tobacco industry ample room for manoeuvre.<sup>22</sup> The tobacco industry is likely to pursue the same approach elsewhere. Furthermore, freedom to produce cigarettes with different levels of smoothness by either filtration/filter ventilation or additives, such as menthol, may be as important to the tobacco industry’s ability to make smokers believe that cigarettes differ in harmfulness as freedom to label cigarettes as it chooses. Thailand never had labelling of tar, nicotine and carbon monoxide yields, and Malaysia has only ever had labelling of maximum permissible yields. Furthermore, Malaysian and Thai smokers have not been subject to sustained efforts by either the tobacco industry or tobacco control authorities to persuade them that light cigarettes are less harmful. Nonetheless, significant numbers of respondents agreed that light cigarettes are less harmful. The finding that comparable proportions of respondents agreed that menthol cigarettes are less harmful is strongly suggestive of the experience of relative smoothness being a sufficient cause of belief in reduced harmfulness. Accordingly, future debates within the tobacco control community should pay greater

attention to the possibility of regulating cigarettes to reduce or eliminate impressions of reduced harmfulness stemming from differences in smoothness.

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