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Authors

Leas, Eric C
Ayers, John W
Strong, David R
et al.

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INTRODUCTION

Although the Family Smoking Prevention and Tobacco Control Act of 2009 ('the Act') essentially banned the terms 'light' and 'mild' in cigarette marketing,¹ unregulated attributes may perpetuate the misconception that certain cigarettes are less harmful.²⁻⁵ To aid the discovery and regulation of attributes that lead to harm misconceptions, we used a nationally representative survey to first identify cigarette sub-brands that smokers believed were less harmful.

METHOD

This sample was composed of US adults who reported smoking at least 100 cigarettes in their lifetime, currently smoking at least 'some days', reported their usual or last-smoked cigarette sub-brand and compared its harmfulness to other sub-brands in the 2013–2014 wave (wave 1) of the Population Assessment of Tobacco and Health.⁶ Analysis was completed using the 'restricted use file' and was approved by the University of California, San Diego Institutional Review Board.

Respondents selected their usual or last-smoked cigarette sub-brand from a series of drop-down menus and then were asked if their sub-brand 'might be "less harmful", "no different" or "more harmful" than other brands of cigarettes'. The proportion of smokers of each sub-brand who thought their brand might be 'less harmful' was reported. Analysis was restricted to sub-brands (including all sizes, eg, kings, 100s, etc) with at least 50 respondents, resulting in an unweighted sample size of n=8525 respondents who smoked 36 different sub-brands that represented 74% of the sub-brands used by respondents. Weighted frequencies, means and 95% CIs were calculated using the balanced repeated replication (BRR) method with Fay's adjustment ($\rho=0.3$) using R V3.2.2.

RESULTS

Eight per cent (95% CI 7% to 9%) of the respondents, who represented more than 2.5 million US smokers, thought their cigarette sub-brand might be 'less harmful' than other cigarettes.

Of the 36 sub-brands analysed, 11 had $\geq 10\%$ of their smokers reporting that the sub-brand might be 'less harmful' (figure 1). All of these cigarettes had been marketed with the terms 'light' or 'mild' prior to 2010 or were currently marketed with the terms 'additive-free' (American Spirit and Winston) or 'natural' (American Spirit). In contrast, none of the sub-brands that had $\leq 5\%$ of their smokers reporting that the sub-brand might be 'less harmful' had ever been marketed with the terms 'light,' 'mild,' 'additive-free' or 'natural'.

American Spirit Mellow (67%; 95% CI 55% to 78%) and American Spirit Full-Bodied (55%; 95% CI 41% to 67%) had an exceptionally high proportion of smokers who thought their brand might be 'less harmful'.

DISCUSSION

Over 2.5 million smokers in the USA believe they are smoking cigarettes that might be less harmful, even though tobacco manufacturers are legally restricted by the Act from promoting any cigarette as safer without first completing a permitting process which has not yet been completed by any brand.

The attributes that lead to harm misconceptions need to be discovered, particularly among the 11 brands that our results suggest result in unacceptably common harm misconceptions. Already our results strongly support the US Food and Drug Administration's warning letters to the makers of American Spirit⁷ and Winston⁸ cigarettes that claim that the use of the terms 'additive-free' and 'natural' conveys that these cigarettes are 'modified risk tobacco products'. That the majority of American Spirit's users believed these cigarettes were less harmful in spite of disclaimers that state 'No additives does NOT mean a safer cigarette' confirms the findings of focus groups that suggest that these disclaimers are not sufficient to eliminate harm misconceptions.⁹ Moreover, our results reinforce the notion that tobacco manufacturers' removal of the terms 'light,' 'mild' and 'low-tar' in 2010 has not eliminated the misconception that these now 'light-coloured' cigarettes might be less harmful.¹⁰ Other elements of cigarette marketing—beyond descriptive terms and the currently required disclaimers—need to be considered to counteract harm misconceptions and adhere to the terms outlined in the Act.

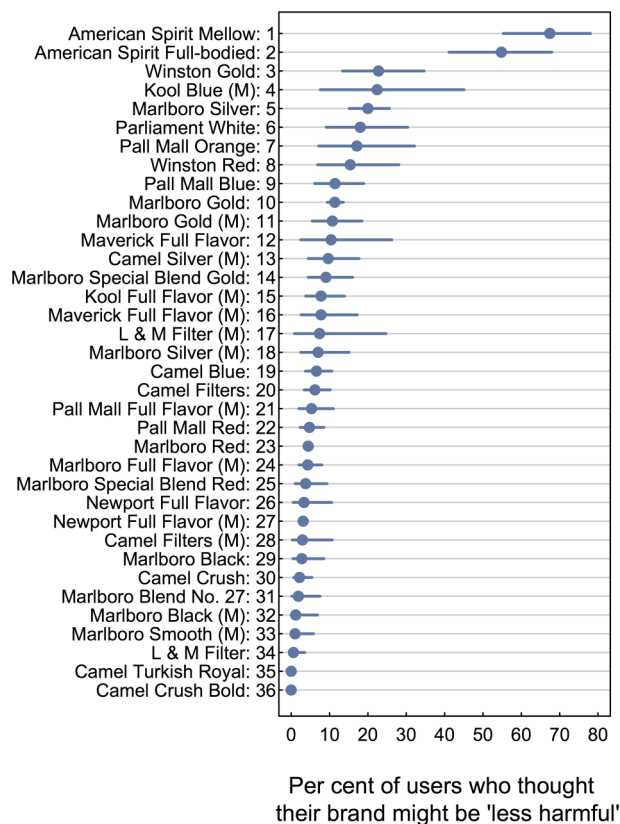


Figure 1 The per cent of users of each cigarette sub-brand who thought their brand might be 'less harmful' than other cigarette brands (unweighted n=8525). Note: The notation '(M)' indicates brands that contain menthol and the number on the y-axis corresponds to the ranking of each sub-brand mean relative to the means of the other 35 sub-brands.

Research letter

Eric C Leas,^{1,2} John W Ayers,³ David R Strong,^{1,4} John P Pierce^{1,4}

¹Department of Family Medicine and Public Health, University of California, San Diego, California, USA

²Joint Doctoral Program in Public Health, San Diego State University and University of California San Diego, San Diego, California, USA

³Graduate School of Public Health, San Diego State University, San Diego, California, USA

⁴UC San Diego Moores Cancer Center, University of California, San Diego, California, USA

Correspondence to Eric C Leas, Moores Cancer Center, 3855 Health Sciences Drive, La Jolla, CA 92093-0901, USA; eleas@ucsd.edu

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Competing interests None declared.

Ethics approval Westat's Institutional Review Board approved the PATH study design and protocol, the

Office of Management and Budget approved the data collection and the University of California: San Diego's Institutional Review Board approved of the data analysis.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement Access to the 'Restricted Use File' of the Population Assessment of Tobacco Use and Health can be obtained by completing the registration process: goo.gl/yL2Et6.

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