Title
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Permalink
https://escholarship.org/uc/item/1br917zp

Journal
Tobacco control, 26(4)

ISSN
0964-4563

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Publication Date
2017-07-01

DOI
10.1136/tobaccocontrol-2016-053006

Peer reviewed
US adult smokers’ perceptions of Australia’s cigarette warning labels: variance by warning content and consistency across sociodemographic sub-segments

The implementation of Australia’s aggressive plain-packing policy in 2012, mandating the removal of all tobacco industry branding and replacement with photographic warnings on 80% of packaging, was associated with a significant decline in smoking prevalence.1 Could Australia’s plain-packing model have a similar effect on US-adult cigarette users who have not yet been exposed to graphic warning labels on their cigarette packs?

To generate evidence for this, we obtained a license from the Commonwealth of Australia to use up to eight of their current warning images (figure 1). Our randomised trial, entitled California smokers in Australia (CASA), will enrol 450 cigarette users who are not ready to quit and randomise them to purchase cigarette packets that have been repackaged into either plain packs, current Australian packs or to a no-change control, for a period of 3 months.2 Warning labels on cigarette packs can cue cognitions on health consequences each time the consumer reaches for a cigarette, until he or she becomes desensitised. Accordingly, rotating multiple warnings is needed to increase the time before any particular warning ‘wears out’.3, 4 Because of cost concerns of manufacturing new cigarette packs in our trial, we decided to rotate only three of the graphic images in our study. In this letter, we report results from a stated preference methodology that allowed US-adult cigarette users to identify which of the eight licensed Australian warnings they believed would be most effective.

Method
We recruited a non-representative sample of US-adult cigarette users (18–50 years), via Amazon Mechanical Turk (http://www.mturk.com), to take a brief survey (N=403).5 The majority of our sample was younger than 40 years (82%), male (61%), white (77%), did not live with children <5 years (83%), smoked on a daily basis (58%), had completed at least some college (85%) and scored lower than six on a seven-point scale assessing intention to quit smoking (81%). Each respondent ranked the eight current Australian warnings according to “how effectively they communicate the health risk of smoking” with the highest rank indicating the ‘most effective’. We estimated the statistical significance of the observed distribution of choices for the ‘most effective’ warning and the distribution across age, gender, race/ethnicity, education, whether a child lived in the house, smoking intensity and intention to quit, using bootstrapped χ² tests. Finally, we commented on the similarity of the rankings from our sample with the results from research in Australia undertaken prior to the introduction of the current policy.6

RESULTS
Six of the licensed Australian warnings (figure 1) provided messages of personal health consequence that could result from smoking cigarettes: ‘peripheral vascular disease (gangrene)’, ‘teeth damage’, ‘blindness’, ‘throat cancer’, ‘emphysema’, or ‘stroke’), one warned of harm to unborn babies, and one encouraged the consumer to quit smoking.

In figure 2 we display the distribution of respondents’ choices for the images perceived to be most effective in the entire sample and across sociodemographic subsegments. In our sample, three images accounted for 71% of the choices for the most effective image. These were: gangrene (32%), harm to babies (23%) and throat cancer (16%). Only 1% chose the image of a woman who was supposed to have had a stroke.

Although the observed distribution of choices for all eight images varied significantly by age and race (p’s≤0.002), the top three choices were very similar. The per cent of each subsegment choosing either ‘gangrene’, ‘harm to babies’, or ‘throat cancer’ as the most effective ranged from a low of 65% among respondents who scored a 4 or 5 on a seven-point scale measuring intentions to quit to a high of 82% among non-white respondents.

DISCUSSION
Using a stated preference methodology, we identified that the rankings of the eight Australian graphic images did not vary substantially across subsegments of US adults. The finding that the gangrene image was chosen as the most effective is consistent with findings from preimplementation focus groups in Australia.6 These Australian data indicated that many individuals found this image effective even though they did not rate it very highly on a ‘believability’ scale, suggesting the warning might be viewed as an advocacy-based message.

Our results are specific to cigarette users and may not generalise to other population groups. Yet, the consistency of our results across subsegments and with Australia’s earlier more expensive studies gives confidence in the ranking of perceived effectiveness. Our methodology provided low-cost, actionable design insights in near real-time (the data were returned in <6 hours). Such approaches may aid future efforts to design cigarette warning labels or other health education material.
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Correction notice This article has been corrected since it was published Online First. The title has been amended for grammar.

Acknowledgements The Commonwealth of Australia awarded a license to the Regents of the University of California to use their cigarette package designs in a randomised trial on the effect of cigarette packaging on smoking perceptions and behaviour in the USA. The authors would like to thank Dr Melanie Wakefield for her advice and comments.

Contributors JPP and DRS directed study design, data acquisition and data interpretation, and obtained funding. ECL and DRS were responsible for data management and analysis. ECL, DRS, JPP, AV and CVD contributed to study design and manuscript preparation. All the authors were involved in the revision process, and read and approved the final manuscript.

Funding This work was supported by grant 1R01CA190347-01 from the National Cancer Institute at the National Institutes of Health.

Competing interests None declared.

Ethics approval UC, San Diego Institutional Review Board.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement This study recruited adult cigarette smokers (18–50 years), via Amazon Mechanical Turk (www.mturk.com), to take a brief survey for a compensation of US$0.50 (N=403).

REFERENCES
1 Australian Government: Department of Health. Post-Implementation Review: Tobacco Plain Packaging. 2016. https://ris.govspace.gov.au/files/2016/02/Tobacco-Plain-Packaging-PIR.pdf
2 Strong D, Pierce J. Effect of packaging on smoking perceptions and behavior: a randomized trial (1R01CA190347-01). National Institute of Health (NIH): National Cancer Institute, 2015.
3 Hammond D. Health warning messages on tobacco products: a review. Tob Control 2011;20:327–37.
4 Borland R, Wilson N, Fong GT, et al. Impact of graphic and text warnings on cigarette packs: findings from four countries over five years. Tob Control 2009;18:358–64.
5 Buhmester M, Kwang T, Gosling SD. Amazon’s mechanical Turk: a new source of inexpensive, yet high-quality, data? Perspect Psychol Sci 2011;6:3–5.
6 Parv V, Ell P, Gaggi K. Market Testing of New Health Warnings and Information Messages for Tobacco Product Packaging: Qualitative Formative Research Report. 2011. http://www.health.gov.au/internet/main/publishing.nsf/Content/CSE9015811300DC6CA257D120011725C1 (accessed 4 Nov 2015).

To cite Leas EC, Pierce JP, Dimofte CV, et al. Tob Control 2017;26:485–486. doi:10.1136/tobaccocontrol-2016-053006