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The impact of standardised tobacco packaging and warnings on relapse prevention: a longitudinal online survey in the UK

Crawford Moodie ,¹ Daniel Jones ,² Catherine Best ¹

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¹Faculty of Health Sciences and Sport, University of Stirling Institute for Social Marketing and Health, Stirling, UK
²University of Stirling Institute for Social Marketing and Health, Stirling, UK

Correspondence to
Dr Crawford Moodie;
c.s.moodie@stir.ac.uk

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ABSTRACT

Introduction The aim of standardised tobacco packaging is to discourage uptake, encourage cessation, help people who previously smoked avoid relapse and reduce exposure to secondhand tobacco smoke. Despite the growing body of evaluative research on standardised packaging, no study has explored the impact, if any, on relapse. In the UK, standardised packaging was phased in between May 2016 and May 2017.

Methods The Adult Tobacco Policy Survey is a longitudinal online survey with people who smoke and previously smoked in the UK, with one wave conducted pre-standardised packaging (2016) and three waves post-standardised packaging (2017, 2019, 2022). We explored whether the look of standardised packs, and the warnings on standardised packs, were considered to help prevent relapse.

Results Across the three post-standardised packaging waves, around one-third (33.5%–35.9%) of people who previously smoked agreed that the look of packs helped them to stay quit at least a little ('a little' 14.8%–15.0%; 'somewhat' 9.8%–10.9%; 'a lot' 8.9%–10.0%), while almost a half (47.5%–49.3%) agreed that warning labels helped them stay quit at least a little ('a little' 17.0%–18.1%; 'somewhat' 13.1%–14.7%; 'a lot' 15.3%–17.6%). There were no significant changes across the post-standardised packaging waves. Women, participants below 40 years of age and those from non-white ethnic backgrounds were more likely to report that the packaging and the warnings helped them stay quit across the post-standardised packaging waves.

Conclusions The findings provide support for a foundational, yet overlooked, role of standardised packaging, which is to help people who previously smoked to stay quit.

INTRODUCTION

Standardised (or plain) packaging has been fully implemented in at least 20 countries.^{1,2} For the first five countries to introduce this policy (Australia, France, the UK, New Zealand, Norway), there are legislative similarities (eg, same exterior pack colour, standardisation of brand and variant name, ban on promotional inserts) and differences (eg, length of the transition period, products included within the legislation, warning design).² A key similarity is that the aims of standardised packaging are to discourage uptake, encourage cessation, help people who previously smoked avoid relapse and reduce exposure to secondhand tobacco smoke.³ With respect to helping people who previously smoked avoid relapse, this becomes increasingly

WHAT IS ALREADY KNOWN ON THIS SUBJECT

⇒ Despite being a key aim of standardised packaging, no research has evaluated the impact of standardised packaging and warnings on helping people who previously smoked to stay quit.

WHAT IMPORTANT GAPS IN KNOWLEDGE EXIST ON THIS TOPIC

⇒ Following the introduction of standardised packaging in the UK, around one-third of people who previously smoked agreed that the look of the pack helped them to stay quit, while almost half agreed that the warnings helped them to stay quit.

WHAT THIS STUDY ADDS

⇒ If standardised packaging and warnings can help people who previously smoked to stay quit, this provides reassurance to policymakers that have implemented this policy, and further evidence for policymakers considering doing so.

important as more people quit smoking, a trend evident in each of these five countries.^{4–8} The potential role of standardised packaging in helping people who previously smoked avoid relapse has, however, been overlooked in evaluative research.⁹

Tobacco control efforts appear to have been more successful at encouraging people who smoke to attempt to quit than helping people who formerly smoked to maintain abstinence.¹⁰ While nicotine addiction is typified by a high relapse rate,^{11–14} other reasons for smoking relapse have been identified, including social interaction needs;¹⁵ smoking environment at home and at work;¹⁶ contact with people who smoke;^{10, 17} withdrawal symptoms;^{15, 18, 19} a lack of willpower;^{17, 20} stress and belief that smoking relieves stress;^{16, 20} and poor subjective health.²⁰ While people who used to smoke are a somewhat neglected population in the tobacco literature, there is some support for the impact of tobacco control policies (eg, smokefree laws, price increases) on helping reduce relapse.^{21, 22} Similarly, research suggests that on-pack warnings can help people who previously smoked remain smokefree.^{21, 23} One reason may be that on-pack warnings are usually present during a relapse crisis and may act as a deterrent.²³ This may also be the case with standardised packaging, although this has yet to be explored.



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The UK is considered in the vanguard of tobacco control, with a raft of tobacco policies introduced this century.²⁴ Concomitantly, the proportion of adults who smoke has declined (11.6%) to a record low as the proportion who formerly smoked has increased (25.1%).²⁵ One recent policy is standardised packaging. Standardised packaging for cigarettes and rolling tobacco was phased in between 20 May 2016 and 20 May 2017, alongside pictorial warnings which cover at least 65% of the main display areas of packs; previously text warnings covered 43% of the pack front and pictorial warnings 53% of the pack reverse.⁹ As no study in the UK, or elsewhere, has considered the impact of standardised packaging on people who previously smoked, we explored whether standardised packaging, and the warnings on packs, may help prevent relapse.

METHODS

Design and sample

The 'Adult Tobacco Policy Survey' (ATPS) is a longitudinal online survey administered by market research company YouGov. Participants were recruited from a panel of respondents, who were invited by email to participate in an online survey. At wave (W) 1, conducted between 20 April and 16 May 2016 (pre-standardised packaging), participants had to be a current (past 3 months) cigarette smoker to be eligible for inclusion. The W1 sample comprised 6233 participants who indicated they smoked cigarettes. All participants were eligible for inclusion at subsequent waves, irrespective of whether they continued to smoke. From this sample, 4293 (607 previously smoked, 14 missing data) responded at W2 (September–November 2017), 3175 (700 previously smoked, 13 missing data) at W3 (May–July 2019) and 3047 (1043 previously smoked, 15 missing data) at W4 (October–November 2022). The study received ethical approval from the General University Ethical Panel at the University of Stirling (GUEP 8359).

Measures

Demographics and smoking status

Information was captured regarding age, sex, ethnicity, social grade,²⁶ household income, highest level of education, employment status and work type (see online supplemental table 1). Participants who selected 'I have stopped smoking completely in the last year' or 'I stopped smoking completely more than a year ago' were categorised as having previously smoked.

Relapse prevention

Participants who previously smoked were asked 'To what extent, if at all, does the look of packs of cigarettes or rolling tobacco help you to stay quit?' and 'To what extent, if at all, do the warnings labels on packs make you more likely to stay quit'.²³ Response options for both were 'not at all', 'a little', 'somewhat' and 'a lot' or 'don't know'. These were recoded to 'not at all' versus other responses, with 'don't know' recoded to missing for the longitudinal analysis.

Analysis

Analysis included only those who had previously smoked cigarettes at that survey wave. Generalised estimating equations (GEE) were conducted to analyse changes in frequency of responses between waves, accounting for the non-independence of repeated observations on individuals. The working correlation structure was exchangeable. Two models were tested, one with a binary dependent variable for whether the look of the pack helped them stay quit, and the second for whether warnings

helped them stay quit. Wave was the independent variable, with W2 the reference category as all participants smoked at W1. The adjusted longitudinal models included sex, education level, age group, income level and social grade as covariates. To further examine the effects of sociodemographic characteristics, these were added to the longitudinal models one at a time to explore the relationship between these characteristics and perceptions of the impact of tobacco packaging on relapse prevention adjusted only for survey wave. Results are presented as the adjusted odds ratio (aOR) and its 95% CI. All analyses were conducted in Stata V.17.

RESULTS

Characteristics of those who previously smoked at waves 2, 3 and 4 are shown in online supplemental table 2. Across W2, W3 and W4, the transition probability from being someone who previously smoked at one wave to someone who currently smokes at the next wave was on average 23.3%. The frequencies for patterns of smoking and not smoking across waves 2–4 are shown in online supplemental table 3.

Table 1 shows the proportion of participants who previously smoked reporting that the look of packs or the warnings helped them to stay quit post-standardised packaging (ie, waves 2 to 4). Between waves 2 to 4 the look of packs helped participants to stay quit 'a little' (14.8% to 15.0%), 'somewhat' (9.8% to 10.9%) or 'a lot' (8.9% to 10.0%), with the warnings helping 'a little' (17.0% to 18.1%), 'somewhat' (13.1% to 14.7%) or 'a lot' (15.3% to 17.6%).

There were no differences across waves in the likelihood of participants who previously smoked indicating that packs helped them stay quit 'a little', 'somewhat' or 'a lot' relative to 'not at all' (W3 vs W2, aOR=1.01, 95% CI 0.83 to 1.22; W4 vs W2, aOR=1.08, 95% CI 0.89 to 1.31, n=1470, obs=2110). Similarly, there were no differences in the likelihood of participants indicating that warnings helped them stay quit 'a little', 'somewhat' or 'a lot' relative to 'not at all' (W3 vs W2, aOR=1.06, 95% CI 0.88 to 1.27; W4 vs W2, aOR=1.10, 95% CI 0.92 to 1.31, n=1496, obs=2176). These results were unchanged after sensitivity analyses that recoded 'don't know' to 'not at all'

Table 1 Proportion of participants who previously smoked reporting that the look of packs or warning labels helped them stay quit at post-standardised packaging waves

	Wave 2		Wave 3		Wave 4	
	N	%	N	%	N	%
Look of packs help stay quit						
Not at all	346	57.0	393	56.1	562	53.9
A little	91	15.0	105	15.0	154	14.8
Somewhat	66	10.9	69	9.9	102	9.8
A lot	54	8.9	70	10.0	98	9.4
Don't know	50	8.2	63	9.0	127	12.2
Total	607	100.0	700	100.0	1043	100.0
Warning labels on packs help stay quit						
Not at all	281	46.3	317	45.3	446	42.8
A little	110	18.1	127	18.1	177	17.0
Somewhat	89	14.7	95	13.6	137	13.1
A lot	93	15.3	123	17.6	181	17.4
Don't know	34	5.6	38	5.4	102	9.8
Total	607	100.0	700	100.0	1043	100.0

rather than missing, and adjustment for number of survey waves completed (see online supplemental table 4).

On average, across all waves, women were more likely to report that the look of packs helped them stay quit (aOR=1.36, 95% CI 1.11 to 1.67), as were participants aged under 40 (aOR=1.53, 95% CI 1.25 to 1.88) and participants not from a white ethnic background (aOR=1.77, 95% CI 1.06 to 2.95). The same pattern was observed for warnings and gender (aOR=1.31, 95% CI 1.08 to 1.59), age group (aOR=1.36, 95% CI 1.11 to 1.66) and ethnic group (aOR=1.96, 95% CI 1.13 to 3.38). There was no relationship for income level, education or social grade.

DISCUSSION

This study provides evaluative evidence that standardised packaging and on-pack warnings may help people who previously smoked maintain abstinence. This is a fundamental goal of standardised packaging and increasingly important given the growing proportion of people who previously smoked in the UK and elsewhere.^{11 25} Both standardised packaging and the on-pack warnings were most likely to help younger adults (≤ 40 years), women and those with non-white ethnicity to stay quit. The findings with respect to standardised packaging have not been previously reported, but with respect to age, they align with a systematic review which found that younger people (irrespective of whether they smoked or not) were more likely to perceive standardised packs as likely to encourage cessation.²⁷ The review did not find any consistent sociodemographic differences in response to standardised packaging by gender or ethnicity.²⁷

We found that among people who previously smoked, approximately one in three thought that the look of the pack, and almost one in two thought that warnings on packs, helped them stay quit (a little, somewhat or a lot). While the proportion indicating that the look of the pack (8.9%–10.0%) and warnings (15.3%–17.6%) help them stay quit a lot is lower, both sets of figures point to the potential value of standardised packaging and on-pack warnings in helping protect against relapse. The consistently high support among people in Australia who previously smoked for standardised packaging (69.9%–70.6%) and new larger pictorial warnings (70.9%–73.9%), before and after this policy was introduced,²⁸ may reflect the perceived value of both measures in reducing the likelihood of relapse.

In terms of limitations, associations between socio-demographic characteristics and responses to the look of packs and warnings must be considered in light of small subsample sizes, with generalisability further restricted by the non-probability sampling design [26] and overrepresentation of participants in a higher social grade (ABC1). While ethnicity was explored, the sample was predominantly white, with insufficient data from non-white participants for more granular analysis. There was high attrition at wave 4, particularly among young people. We also relied on self-reported data about smoking status and the impact of different policies, which is susceptible to socially desirable responding. Qualitative research, examining in-depth views of how consumers who previously smoked perceive and engage with tobacco packaging as a relapse prevention tool is warranted.

X Daniel Jones @Dr_Daniel_Jones and Catherine Best @cathbest

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ORCID iDs

Crawford Moodie <http://orcid.org/0000-0002-1805-2509>

Daniel Jones <http://orcid.org/0000-0002-2491-8735>

Catherine Best <http://orcid.org/0000-0002-3652-2498>

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