

Amos Amanda (Orcid ID: 0000-0003-1066-5551)

***“It's like sludge green”*: Young people's perceptions of standardised tobacco packaging in the UK**

Andy MacGregor<sup>1</sup>, Hannah Delaney<sup>2</sup>, Amanda Amos<sup>3</sup>, Martine Stead<sup>4</sup>, Douglas Eadie<sup>4</sup>, Jamie Pearce<sup>5</sup>, Gozde Ozakinci<sup>6</sup>, Sally Haw<sup>7</sup>

1. ScotCen Social Research, Edinburgh, UK
2. School of Nursing and Midwifery, National University of Ireland, Galway and Trinity College Dublin, Ireland
3. Usher Institute, University of Edinburgh, Edinburgh, UK
4. Institute for Social Marketing, University of Stirling, Stirling, UK
5. School of GeoSciences, University of Edinburgh, Edinburgh, UK
6. School of Medicine, University of St Andrews, St Andrews, UK
7. Faculty of Health Sciences and Sport, University of Stirling, Stirling, UK

Running head: young people and standardised tobacco packs

Key words: Adolescents, qualitative, cigarette, packaging, health warnings

Word count: main text = 4519

Corresponding author: Amanda Amos

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/add.14999

Declaration of interests: None

## ABSTRACT

**Background and Aims** Standardised tobacco packaging was introduced in the United Kingdom (UK) in May 2016, together with larger graphic warnings. This study explored young Scottish people's awareness of and perceptions about standardised tobacco packaging in the UK

**Design** Qualitative study using 16 focus groups conducted February-March 2017.

**Setting** Four schools in Scotland based in areas of differing socioeconomic status (high vs medium/low) and two levels of urbanity (large urban vs small town/other urban).

**Participants** Eighty-two S2 (13-14 years) and S4 (15-16 years) students who were smokers or at-risk non-smokers.

**Measurements** Focus groups explored perceptions of standardised packaging and health warnings. The qualitative data underwent thematic analysis.

**Findings** Views about standardised packaging were generally negative. Packs were described as being unattractive, drab and less appealing than non-standardised versions. The new health warnings generated negative affective, often aversive, responses. These varied depending on the image's perceived 'gruesomeness' and authenticity. Most participants thought that the impact would be greatest on young non/occasional smokers. There were divergent views about whether established smokers would be affected.

**Conclusions** The introduction of standardised tobacco packaging and new larger graphic health warnings in the United Kingdom seems have reduced the perceived attractiveness of cigarette packs among young people in the UK who smoke or are at elevated risk of becoming smokers, disrupting positive brand imagery (the brand heuristic), increasing the salience of health warnings, and contributing to denormalising smoking.

## **INTRODUCTION**

Reducing young people's exposure to tobacco advertising and marketing is a major element of comprehensive national smoking prevention programmes (1, 2). A wealth of research has revealed how tobacco companies have used branding, including brand names, insignia, colours, and symbols, to promote positive images of smoking to young people and to increase the allure of their products (2-4). As more countries ban or restrict tobacco marketing, tobacco companies have focussed their attention and promotional budgets on retail point-of-sale displays, and cigarette branding and packaging (5-7). These marketing strategies have created cigarette brand images that young smokers use as a form of symbolic consumption whereby the cigarette brand, and its perceived positive attributes (the brand heuristic), is used to construct and project a desirable identity to peers and others in their social worlds (8-12). Systematic reviews of research with young people, including qualitative studies and experimental study designs involving 'mocked up' cigarette packs with different features, have concluded that implementing standardised packaging which remove pack design elements would: reduce the appeal of cigarette packs and cigarettes; increase the prominence and salience of health warnings; and reduce the pack's ability to mislead about product harm (13-15). Five countries have implemented standardised (also known as plain) packaging (16), and evidence is beginning to emerge of the impact on young people in relation to these predicted effects.

Australia was the first country to mandate standardised packs in 2012. Four cross-sectional survey studies have explored the impact on young people. Three studies involving national surveys of 12-17 year olds found that standardised packs reduced the appeal of cigarette packs and brands, and increased uncertainty about brand differences (12, 17). These effects were sustained 5 years after implementation (18). However, increasing the size of health warnings had no impact on adolescents' attention to and processing of them (12, 18). A study of 12-24 year olds found greater than anticipated responses to standardised packs, with 28% of smokers reporting some form of social denormalisation behaviour (i.e. hiding their pack from view, using a case to cover their pack and/or feeling embarrassed) (19). Positive impacts also occurred in France, where plain packaging and larger health warnings were introduced in 2017. A two-wave national survey of 12-17 year olds' found that 8-11 months after implementation, smokers were less attached to the brand they smoked and less likely to think that their brand was less harmful than other brands (20).

The UK implemented standardised packaging and larger graphic warnings in May 2016 (16, 21). Packs must contain at least 20 cigarettes and be a standard colour (drab green/brown), with branding restricted to brand name and descriptor in standard black font. Graphic warnings are required to make up 65% of the front and back of packs (Figure 1). Retailers had until May 2017 to sell old stock of the original branded packs. Two studies have explored the impact on young people. A survey of 11-15 year olds in England (21), two months before full implementation, found that 20% had noticed the new packs, with awareness highest among ever-smokers (49%). A qualitative study of 16-17 year olds in Scotland undertaken 6-18 months after full implementation found high awareness of the packs, which were perceived to be unappealing and off-putting (22). An understanding of the 'real world' impact of standardised packaging on adolescents is therefore starting to emerge. However, it is limited in

several important respects, such as exploring how national legislative differences (16) may have different effects. For example, larger health warnings appear to have had little impact in Australia but some impact in France. Furthermore, only one study has explored, using qualitative methods, young people's appraisal and interpretation of standardised packs (22). Qualitative studies enable a more in-depth exploration of young people's engagement with standardised packs, generating potentially important insights into how and why any effects are, or are not, being produced. For example, the study by Mitchell et al (22) reveals how permutations in pack shape and structure which are permitted in the UK (but not in Australia), may have moderated the impact of standardised packs on British adolescents.

In the study reported here we used focus groups to explore young people's awareness of and exposure to standardised packs in the UK, their perceptions of these packs as to their appeal, and likely impact on attitudes to smoking and smoking behaviour among young people. This study differs from that of Mitchell et al's (22) in three important respects. It was undertaken earlier (February-March 2017) 2-3 months before branded packs were banned completely, when they were still more commonly available than standardised packs (23); participants were younger (13-16) and therefore more likely to be considering or trying smoking; and the salience of several health warnings was explored. This work formed part of the DISPLAY study, a five-year longitudinal study evaluating the impact of the Scottish ban on point-of-sale displays on young people's smoking behaviour, brand awareness and perceived acceptability of smoking in four communities with differing socioeconomic profiles (24, 25).

## **METHODS**

### *Sample and procedure*

The four schools, located in the central belt of Scotland, were purposively selected to represent two levels of urbanisation (large urban vs. small town/other urban) and two levels of socioeconomic deprivation (high vs. medium/low) (Table 1). The social deprivation level for each school and its surrounding catchment was estimated using uptake of free school meals and the Scottish Index of Multiple Deprivation (SIMD) based on postcode information.

Sixteen single-sex focus groups were conducted by an experienced female facilitator (IM) who had undertaken all the previous DISPLAY focus groups. There were four groups in each school, two with S2 (13-14 years old) and two with S4 (15-16 year old) students. The groups had 3 to 8 participants, 82 in total, and took on average 40 minutes. Participants were purposively recruited with the help of teachers to include students who were smokers or had regular contact with smoking (eg family members or friends smoked). The aim was to include adolescents most at risk of becoming adult smokers. These recruitment methods have been successfully used in previous qualitative studies on young people and smoking (6, 26, 27). Twenty-eight participants were current smokers, 16 had tried smoking and 38 were never-smokers (Table 2). Parental opt-out consent was used. Potential participants could also opt-out on the day of the focus groups. Participants were assured of anonymity and ground-rules established around disclosure. Ethics approval was granted by NatCen Research Ethics Committee.

The focus groups were digitally audio recorded with participants' permission. The topic guide included a general discussion about the community, local smoking behaviours and cultures, and the introduction of standardised packaging. The facilitator explored participants' awareness, knowledge and views of standardised packaging if this was raised spontaneously when talking about smoking. In the second part of the focus groups participants were shown

four examples of standardised cigarette packs (Figure 1), and their reactions and views about these were explored. Field notes were written after each group.

### *Data analysis*

Focus group discussions were fully transcribed and the data entered into the qualitative computer package NVivo, version 10. The data were coded and inductive thematic analysis undertaken according to Braun and Clarke's iterative approach to thematic analysis (28). The initial analysis involved familiarisation; transcripts were read and re-read by three authors (AA, HD, AM) and emergent themes discussed. Codes were systematically compared to identify crosscutting themes and common experiences, as well as differing views. The coding framework was further refined into key themes. This paper reports on the themes relating to standardised packaging. The primary research question and analysis plan were not pre-registered on a publicly available platform. The results should therefore be considered exploratory. The source of each quotation (school, year, gender) and facilitator (F) or participant (P) are stated.

## **RESULTS**

The first section considers participants' unprompted awareness and perceptions of standardised packaging. The subsequent sections explore participants' responses to examples of the packs.

### **Awareness**

Students in all but one of the focus groups had seen or were aware of the standardised packs. Several who smoked had purchased, or been given, cigarettes in or from standardised packs. For non-smokers, exposure to packs was mostly via family members or friends who smoked or seeing discarded plain packs in litter on the ground.

While participants debated what the actual colour of the packs was, variously described as brownish or '*sludge green*', most descriptions were negative, with packs being described in several groups as having become '*dark*' or even having '*no colour*'.

*F: So thinking about the packets then, are they...what colours are they?*

*P: They've got no colour.*

*P: Black and white.*

*P: That brownish colour (C2, S2 Boys)*

*P: It's like sludge green*

*P: Is it army green or sludge green? (C4, S4 Girls)*

This in turn appeared to be weakening branding and brand identification

*P: Coz they don't have brands on them. They're just black packets wi' pictures...*

*P: I think ...Have they not like changed colour though? Have they not like gone dark? (C4, S2 Girls)*

Awareness of the new graphic health warnings ranged from general descriptions such as a '*wee picture of like lungs*' and the '*smoking kills*' message, to more detailed descriptions of the different images.

*They're not black but they're like dark, dark green, or dark, dark blue, and then they just have like a wee smoking kills thing and a wee picture of like lungs or something.*

*(C1, S4 Girls)*



*There's one that says don't smoke around children and it has like a woman smoking around a child and it can kill them. And then there's like another one on which a guy was getting surgery on his lungs because he was smoking too much. (C2, S2 Boys)*

There was also a perception that these changes were disrupting brand distinction and image by focusing attention on the drab colour and more prominent graphic health warnings.

*It's like a greeny-browny colour. It's not, like, got loads of writing on it. It's got like more dangers, and there's a little picture on it, and it's got the brand name. (C2, S4 Girls)*

As highlighted in the quote below, this appeared to increase the potential potency and salience of health warnings. Furthermore, the removal of key elements of branding for some resulted in packs that 'all look similar', thereby greatly reducing the ability of the pack to act as a brand heuristic.

*P: There's not so much colour on the other [standardised] packets, you're automatically drawn to the picture.*

*P: And then also you can't tell what kind it is, like from far away unless you were to actually read it. Like you can't tell what kind it is so somebody could be smoking like Benson & Hedges and they would give one to you, and then you wouldn't know unless you like read it on the cigarette because it's black, so you can't tell because they all look similar. (C1, S4 Girls)*

Indeed, some participants were unsure whether the brand name was still on the packs. These changes were perceived to have reduced the attractive 'cool' brand image and thus the pack

appeal.

*P: You only see a bad image. You don't see like fancy colours or bright colours that make you look .. well, "Oh, that looks cool".*

*P: But do like some people actually care about that?*

*P: People that smoke, I would say don't care about it because they just want to smoke, but for someone who's not tried it before ... it will not tempt them so much I'd say. It is helpful to stop young people getting in to it in the first place. (C2, S4 Boys)*

### **Pack appeal - colour and graphic warnings**

When presented with four examples of the new packs, participants' reactions echoed the unprompted comments, with the plain packs being described as unattractive, unappealing and indeed 'really ugly'. In part, this was attributed to the drab, 'dark', 'manky' colour.

*P: They're very depressing, you just want to sit there and slit your wrists*

*F: So what's depressing about them?*

*P: Cos they've got dark colours and all that. (C1, S2 Boys)*

Most negative views related to the new large health warnings, with images variously described as being 'disgusting', 'minging', 'nasty' and 'horrible'. The images on packs 1 and 2 (Figure 1) provoked the most negative reactions, with most groups agreeing that these were 'the most horrible ones'. The pack featuring the tracheotomy (Pack 1 Figure 1) triggered the most extreme, often visceral aversive responses, with some participants refusing to look at the image or moving the pack out of sight.

*P: Eww...like that's so disgusting! I don't really want to see that.*

*P: Is it on the other side? Can we turn it over?! It is on the other side.*

*P: Oh, That is so bad.*

*P: Makes me feel sick. (C2, S4 Girls)*

*P: That's horrible! I wouldn't look at that but I'd just like...if I was going to get cigarettes I'd probably take them out of the packet and put them somewhere else instead of looking at the packet. (C1, S4 Boys)*

Some felt that the images were so shocking that younger children should be protected from them.

*See my niece? She'd cry if she saw that. That's not something you should expose children to. (C4, S4 Boys)*

Participants generally accepted these two graphic warnings as being 'real', though some participants had to explain to others that the hole in the throat was due to cancer.

*P: You actually get a hole in your neck?*

*P: Yeah*

*P: That one's the worst, now that I know what it is. (C4, S2 Girls)*

However, two groups where all the participants were smokers, questioned these images' authenticity, based on their own lived experience of smokers, and the effects of smoking.

*P: That is disgusting... the hole in the throat. I know so many people that smoke, and have smoked for like 60 years, and none of them have it. (C4, S4 Girls)*

*P: They're fake. I've never seen that happen to somebody in my life.*

*F: What do you think about them?*

*P: They're definitely faking it. Since when ..*

*F: I see you nodding your head there. You think?*

*P: Since when do you do this mate? (pretending to throw up, imitating the girl throwing up blood). (C1, S2 Boys)*

Packs 3 and 4 (Figure 1) provoked more muted or no comments. This appeared to reflect the view these images were less 'gruesome' than the other two, and portrayed illnesses regarded as being commonplace and not necessarily associated with smoking. They were therefore perceived to be not as memorable, and less likely to affect young people.

*P: That's what happens to people anyway...Yeah like folk get heart attacks and strokes an' that, and just .. That's what happens.*

*P: It should be like more like...not gruesome, but like more like terrifying almost...coz I'll remember that. (C4, S2, Boys)*

### **Brands and branding**

Participants struggled to identify the brands of the packs shown in the groups due to the changes in key brand identifiers – brand insignia, large brand names and brand colour. Participants who were less familiar with plain packs had to ask the facilitator or other participants how you could tell which brand they were, or indeed where the brand name was.

*P: You can't even tell the make now.*

*P: Yeah, you can't even see the brand. (C2, S4 Girls)*

*P: Because they're just pure plain, you cannae see what...you've got to actually read the wee thing at the bottom, that's where the name of it is. (C3, S4 Boys)*

In comparison the old coloured packs were not only 'nicer' but you 'knew what they were' (C1, S2 Girls). Now the brand had become just 'a name', stripped of its wider manifestations and perceived distinctiveness.

*Coz you can tell the difference between the brands by the colour normally, but now it's just a name. (C4, S4 Boys)*

Others talked about how pack design and colours had been used not only to identify brands and brand variants, but that these conveyed positive brand imagery and attributes (the brand heuristic) about both the product – 'what it is like' and its 'coolness', which users could draw on to 'look sort of different', contributing to a positive and sought-after smoker identity:

*The Marlboro Golds looked kinda clean, the white and the gold. They looked sort of fresh. And then sometimes they have like nice patterns. Like I know there used to be the, is it JPS Blues? And they came in this like royal blue packet, which looked quite cool.*

And later:

*P: The old boxes like sort of, like, you'd look sort of different with a flashy coloured box or something. That you sort of just, it's just sort of like 'Ah!' I don't really know how to describe it.*

*P: You can like straight away tell what it is like, coz of the colour of the box. (C2, S4 Boys)*

While not stated explicitly the removal of 'clean' and 'fresh' colours may also indicate emerging changes in perceived harmfulness of certain brands.

The removal of attractive pack colours and the addition of new graphic health warnings meant that now packs were not something that you would want to be seen with or be proud of. As a result, the ability of a brand to promote or project a specific image or 'smoker identity' had been considerably reduced.

*Not the sort of thing you'd want to have in your pocket, to be honest. (C2, S4 Boys)*

*It wouldn't be attractive to have that in your hand, or like be proud to walk about with it. Like you know like the old Sterling packages were like bright silver? That'd be nice to have in your hand, but that wouldn't be. (C3, S4 Girls)*

Only one group viewed the colour change positively. However, this was only in relation to the Golden Virginia rolling tobacco brand, whose traditional brand colours of yellow and green were perceived as projecting a negative stigmatised image of both brand and user.

*Golden Virginia – the old green packets – I used to hate the look of them, and then when they changed it to black I was like... Coz people kinda, not 'judge' you on what*

*you smoke, but like if you smoke Golden Virginia there's an odd chance that looks sad! (C4, S4 Girls)*

### **Perceived impact**

Views diverged about the likely behavioural impact of plain packaging. The most commonly expressed view was that the packs would affect never or occasional smokers, but that established smokers, including some participants, would continue to smoke regardless. Reasons cited for this were that: the health effects of smoking were already widely known, changing the packaging would not discourage addicted smokers; and smokers could hide packs inside a pocket or bag and ignore the imagery.

*But a heavy smoker's not gonna stop because o' that I don't think... but a light smoker will. Like see someone who's like a social smoker or something like that, I'm pretty sure if they're looked at the packet, they would be like quite terrified. (C4, S2 Boys)*

*They'll not like change anything because you look at the packet for two seconds, and then it's back in your pocket. It doesn't matter at all. (C4, S4 Boys)*

*P: Yeah. But just coz like they've changed the boxes and stuff, like we're gonna smoke, we're still gonna smoke it!*

*P: Like so they've changed it, but anyone that smokes is gonna smoke regardless of what the box looks like.*

*P: They're not gonna give up just because of a fag packet. (C4, S4 Girls)*

Never or occasional smokers were thought to be more susceptible to the negative imagery, health warnings and unattractive appearance, and therefore less likely to want to try smoking or become an established smoker. However, several participants raised the point that as tobacco products in shops were now hidden behind shutters, this could dilute the potential impact of plain packaging as the imagery and warnings were only visible after purchase.

*They're already hid behind shutters, so like the only people that are gonna see them are smokers.* (C4, S4 Boys)

## DISCUSSION

This study is only the second to explore, using qualitative methods, young people's awareness of and responses to standardised packaging in a country where this is implemented. Our findings suggest that, at least among young people who are smokers or at risk of becoming smokers, the introduction of standardised packs combined with larger graphic health warnings in the UK, is likely to have reduced the perceived attractiveness of cigarette packs and reinforced and/or increased negative perceptions of smoking. Awareness of standardised packs was high, consistent with surveys undertaken at around the same time of students in these four schools for the DISPLAY study (25) and adolescents in England (21). This was despite the evidence that tobacco companies delayed the appearance of standardised packs and removal of fully branded packaging for as long as possible (23). The main sources of exposure to the new packs were family and friends who were smokers, and seeing them in litter on the streets.



Standardised packs were uniformly described as being less attractive and appealing than the non-standardised packs, which is consistent with the findings of pre-post implementation surveys of young people in Australia and France (8, 18, 20) and a qualitative study in Scotland (22). Participants were aware of the changes in the colour packs to a uniform drab 'sludge green' or dark colour, and the larger graphic health warnings. As predicted by previous experimental studies (9, 29, 30), both were perceived to have made cigarette packs unattractive, with young people remarking spontaneously that the drab pack colour made the graphic and textual warnings more pronounced than previously, potentially increasing their potency in the process. In contrast, brand names had become much less visible. Responses to being shown examples of the packs confirmed participants' universally negative view of the packs and health warnings, but also revealed two additional important findings – that responses to health warnings might differ depending on the image and message, and that the combined effect of standardised packaging and graphic health warnings might be contributing to the social denormalisation of smoking.

Experimental studies have found that graphic warnings can provoke negative affective reactions such as disgust and aversion, and increase the perceived likelihood of harm from smoking (30). Furthermore, increasing the size of graphic health warnings reduces adolescents' ratings of positive pack characteristics (29). As expected, participants often responded with shock and disgust when recalling or responding to graphic health warnings. But responses varied in relation to not only the relative graphic nature of the images but also their novelty, relevance and perceived credibility. McCool et al (10) have argued that graphic warnings' impact might be moderated if perceived by young people to be inauthentic or exaggerated. Our study suggests that the more hard-hitting 'gruesome' images among those used in the UK may be more memorable and evoke stronger negative affective and aversive responses among adolescent smokers and non-smokers. However, there was some indication that smokers might

resolve their cognitive dissonance by dismissing such images and messages as being inauthentic or fake.

Several participants demonstrated aversive reactions to the health warnings including asking for them to be covered, stating that they would put the cigarettes in another container so that they wouldn't see the health warning, or not wanting to have the packet in their hand or pocket. Covering or hiding cigarette packs from others or feeling uncomfortable have been identified as markers of social denormalisation (8). In Australia, eight months after standardised packs were introduced, one in four young smokers reported one of these responses that indicated feelings of social denormalisation (8). Our study suggests that similar processes were taking place among smokers and at risk non-smokers in the UK. The removal of brand logos, colours and other insignia appeared to have created difficulties in identifying brands and this had further reduced positive 'cool' brand imagery and attributes, which are important influences on youth smoking uptake. When packs '*all look similar*', and the brand is reduced to '*just a name*', the brand's ability to act as a heuristic is greatly diminished.

There was a general consensus that plain packs' reduced attractiveness and appeal would be off-putting for young non-smokers or occasional smokers. However, several participants, particularly smokers, doubted whether plain packs and the new health warnings would have any impact on smokers, whatever their age, because the need to smoke (ie addiction) trumped any negative feelings about the pack and health warnings, which could also be easily hidden. In addition, some participants echoed the views of young people when the point-of-sale ban was introduced, that adolescents would no longer be exposed to the health warnings on packs, as they were no longer openly displayed in shops (6). However, the findings from this study and those in Australia (18) indicate that young people continue to be exposed to the warnings,

even if people in their social worlds do not smoke, mainly through discarded packs in litter and that (as predicted) they are now more noticeable.

As far as we are aware, this is the first qualitative study to explore 13-16 year old's responses to the 'real-life' implementation of standardised packaging. Additional study strengths are the participation of young people from diverse socio-economic backgrounds, and the inclusion of unprompted recall and views as well as more in-depth exploration of responses to examples of standardised packs and health warnings. However, the study has several limitations. Participants were not recruited to be representative of young people in the UK and so our findings may not be generalisable. Fully briefed teachers within the schools helped recruit participants, but it is possible that they selected students they perceived to be more articulate or likely to engage with the discussion. Participants were smokers and susceptible non-smokers, as they are of most concern, and as such may also be more exposed to and aware of standardised packs and health warnings. The study was undertaken 2-3 months before full implementation, thus our findings may under- or over-estimate the full impact of standardised packaging. For example, the negative feelings reported here might become more entrenched or abate as standardised packs become the norm. Also, any impact on the perceived quality of cigarettes or changed perceptions of smokers, both of which have been identified as possible consequences of standardised packs (14, 15), were not explored in this study. However, there was some indication that the removal of what were perceived to be '*fresh*' and '*clean*' colours might be starting to affect perceptions of brand harmfulness, as has been suggested in France (20).

In conclusion, the findings from this qualitative study indicate that among young people who were smokers or at risk of becoming smokers, the introduction of standardised packs combined

with graphic health warnings in the UK, is likely to have reduced the perceived attractiveness of cigarette packs, reinforced and/or increased negative perceptions of smoking and its harm, and disrupted positive brand imagery. Further research is needed to investigate the longer-term impacts. This would include investigating whether subsequent increased familiarity with the health warnings reduces the 'shock' aversive and social denormalisation effects, and the perceptions of younger cohorts who have had little exposure to the old packaging and branding.

## **ACKNOWLEDGEMENTS**

We would like to thank the schools and students who participated in the focus groups. We would also like to thank Irene Miller who facilitated all the focus groups. Finally, we would like to thank Roni Butcher and Karen Stewart for carrying out the transcription, and Lesley Birse for research support and administration.

## **FUNDING**

This project was funded by the UK National Institute for Health Research (NIHR) PHR project 10/3000/07. The study sponsor had no influence on study design and the collection, analysis, and interpretation of data and the writing of the article and the decision to submit it for publication.

## REFERENCES

1. World Health Organisation. MPOWER: Six policies to reverse the tobacco epidemic. WHO report on the global tobacco epidemic, 2008. Available at: <https://www.who.int/tobacco/mpower/2008/en/> (accessed 24 October 2019).
2. U.S. Department of Health and Human Services. Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General. 2012. Atlanta, GA, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.
3. Wakefield M, Morley C, Horan JK, et al. The cigarette pack as image: new evidence from tobacco industry documents. *Tob Control* 2002; **11**(Suppl I): i73–80.
4. Pollay RW. Targeting youth and concerned smokers: evidence from Canadian tobacco industry documents. *Tob Control* 2000; **9**:136–47.
5. Pollay R. More than meets the eye: on the importance of retail tobacco merchandising. *Tob Control* 2007; **16**: 270–274.
6. van der Sluijs W, Haseen F, Miller M, MacGregor A, Sharp C, Amos A, et al. ‘It looks like an adult sweetie shop’: point-of-sale tobacco display exposure and brand awareness in Scottish secondary school students. *Nicotine Tob Res* 2016; **18**: 1981–88.
7. Moodie C, Hastings G. Making the pack the hero, tobacco industry response to marketing restrictions in the UK: Findings from a long-term audit. *Int J Ment Health Addic* 2011; **9**: 24–38.

8. Dunlop S, Perez D, Dessaix A, Currow D. Australia's plain tobacco packs: anticipated and actual responses among adolescents and young adults 2010–2013. *Tob Control* 2017; **26**: 617-626.
9. Hoek J, Gendall P, Gifford H, Pirikahu G, McCool J, Pene G, et al. Tobacco branding, plain packaging, pictorial warnings, and symbolic consumption. *Qual Health Res* 2012; **22**: 630-639.
10. McCool J, Webb L, Cameron LD, Hoek J. Graphic warning labels on plain cigarette packs: Will they make a difference to adolescents? *Soc Sci Med*, 2012; **74**: 1269-1273.
11. Moodie C, Bauld L, Ford A, Mackintosh AM. Young women smokers' response to using plain cigarette packaging: qualitative findings from a naturalistic study. *BMC Public Health* 2014; 14; 812-819.
12. White V, Williams T, Faulkner A, Wakefield M. Do larger graphic health warnings on standardised cigarette packs increase adolescents' cognitive processing of consumer health information and beliefs about smoking-related harms? *Tob Control* 2015; **24**: ii50-ii57.
13. Stead M, Moodie C, Angus K, Bauld L, McNeill A, Thomas J, et al. Is consumer response to plain/standardised tobacco packaging consistent with Framework Convention on Tobacco Control guidelines? A systematic review of quantitative studies. *PLoS ONE* 2016; **8**: e75919.
14. Moodie C, Stead M, Bauld L, McNeill A, Angus K, Hinds K, et al. Plain tobacco packaging: a systematic review. Stirling, University of Stirling. 2012. Available at: [http://phrc.lshtm.ac.uk/papers/PHRC\\_006\\_Final\\_Report.pdf](http://phrc.lshtm.ac.uk/papers/PHRC_006_Final_Report.pdf) (accessed 23 October 2019)
15. Hammond D, Daniel S, White CM. The effect of cigarette branding and plain packaging on female youth in the United Kingdom. *J Adolesc Health* 2012; **52**: 151-7.

16. Moodie C, Hoek J, Scheffels J, Gallopel-Morvan K, Lindorff K. Plain packaging: legislative differences in Australia, France, the UK, New Zealand and Norway, and options for strengthening regulations. *Tob Control* 2019; **28**: 485-492.
17. White V, Williams T, Wakefield M. Has the introduction of plain packaging with larger graphic health warnings changed adolescents' perceptions of cigarette packs and brands? *Tob Control* 2015; **24**: ii42-ii49.
18. White VM, Guerin N, Williams T, Wakefield MA. Long-term impact of plain packaging of cigarettes with larger graphic health warnings: findings from cross-sectional surveys of Australian adolescents between 2011 and 2017. *Tob Control* 2019; **28**: e77-e84.
19. Dunlop SM, Dobbins T, Young JM, et al. Impact of Australia's introduction of tobacco plain packs on adult smokers' pack-related perceptions and responses: results from a continuous tracking survey. *BMJ Open* 2014; **4**: e005836.
20. El-Khoury Lesueur F, Bolze C, Gomajee R, White V, Melchior M. Plain tobacco packaging, increased graphic health warnings and adolescents' perceptions and initiation of smoking: DePICT, a French nationwide study. *Tob Control* 2019; **28**: e31-e36.
21. Bogdanovica I, Opazo Breton M, Langley T, Britton J. Awareness of standardised tobacco packaging among adults and young people during the final phase of policy implementation in Great Britain. *Int. J Environ Res Pub Health* 2017; **14**: 858.
22. Mitchell D, Moodie C, Critchlow N, Bauld L. Adolescents' perceptions of standardised cigarette packaging design and brand variant name post-implementation: a focus group study in Scotland. *BMC Public Health* 2019; **19**:1227-1235.

23. Critchlow N, Stead M, Moodie C, Eadie D, MacKintosh AM. Introduction of standardized tobacco packaging during a 12-month transition period: findings from small retailers in the United Kingdom. *Nicotine Tob Res* 2019; **21**: 871–878.
24. Haw S, Amos A, Eadie D, Frank J, MacDonald L, MacKintosh AM, et al. Determining the impact of smoking point of sale legislation among youth (DISPLAY) study: a protocol for an evaluation of public health policy. *BMC Public Health* 2014; **14**: 251.
25. Haw S, Currie D, Eadie D, Pearce J, MacGregor A, Stead M, Amos A, Best C, Wilson M, Purves R, Cherrie M, Ozakinci G, MacKintosh AM. PHR Project: 10/3000/07 – Determining the Impact of Smoking Point of Sale Legislation Among Youth (DISPLAY) Study: a mixed methods before and after evaluation. NIHR (in press).
26. Robinson J, Amos A. A qualitative study of young people's sources of cigarettes and attempts to circumvent underage sales laws. *Addiction* 2010;**105**:1835-43.
27. Nuyts PAW, Hower RMF, Kuipers MAG, Lorant V, Grard A, SILNE-R consortium, et al. Youth access to cigarettes across seven European countries: a mixed-methods study. *Nicotine Tob Res*. ntr180, <https://doi.org/10.1093/ntr/ntr180>
28. Braun V, Clarke V, Hayfield N, Terry G. Thematic analysis. *Handbook of Research Methods in Health Social Sciences*. 2019. p. 843-60.
29. Germain D, Wakefield MA, Durkin SJ. Adolescents' perceptions of cigarette brand image: does plain packaging make a difference? *J Ado Health* 2010; **46**: 385-392.
30. Noar SM, Hall MG, Francis DB, Ribisl KM, Pepper JK, Brewer NT. Pictorial cigarette pack warnings: a meta-analysis of experimental studies. *Tob Control* 2016; **25**:341-354.



**Table 1 School location and deprivation**

	<b>High Deprivation</b>	<b>Medium/Low Deprivation</b>
Large urban	C1	C2
Small town/other urban	C3	C4

**Table 2 Focus group sample by school, school year and smoking status**

School	Smoking status		
	Current	Tried	Never
<b>C1</b>			
S2 male	3	0	0
S2 female	4	0	0
S4 male	4	0	0
S4 female	3	0	0
<b>C2</b>			
S2 male	1	0	5
S2 female	0	0	5
S4 male	2	2	0
S4 female	0	4	1
<b>C3</b>			
S2 male	0	0	6
S2 female	1	0	5
S4 male	0	4	2
S4 female	0	3	3
<b>C4</b>			
S2 male	0	3	3
S2 female	0	0	5
S4 male	2	0	3
S4 female	8	0	0
<b>TOTAL</b>	28	16	38

**Figure 1** Images of the standardised cigarette packs used in the focus groups



*Pack 1*

*Pack 2*

*Pack 3*

*Pack 4*