

**UNIVERSITY of
STIRLING**



**Adolescents' perceptions of standardised cigarette packaging and other
cigarette packaging measures intended to be dissuasive: A mixed method
study in Britain**

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Thesis submitted in part fulfilment for the Degree of Doctor of Philosophy

December 2020

Abstract

Background: This thesis had two main aims. First, to understand how adolescents responded to standardised cigarette packaging. Second, to explore how adolescents perceived novel ways of using the packaging to attempt to deter smoking, specifically cigarette packs that played audio health messages when opened, cigarette packs where the brand variant name was replaced by a number ('numbered packs'), and cigarette sticks which were an unappealing colour or displayed a warning ('dissuasive cigarettes').

Methods: A mixed methods design was used, with three interlinked studies with adolescents. First, focus groups were employed with 16-17 year-olds ($n=41$) in Scotland to explore awareness of, and responses to, standardised packaging, and perceptions of cigarette packs that played audio health warning messages and dissuasive cigarettes. Second, a cross-sectional survey with 12-17 year-olds in Scotland ($n=594$) examined perceptions of, and responses to, standardised packaging and dissuasive cigarettes. Third, focus groups with 11-16 year-olds ($n=89$) across Britain assessed reactions to brand variant names and numbered packs.

Findings: The findings suggest that standardised packaging is viewed unfavourably by adolescents, with the warnings on packs prominent and off-putting and the appeal of the pack, the user and smoking greatly diminished. Standardised packs with different structures from the traditional straight-edged flip top pack were viewed less negatively however. While some adolescents viewed the packs playing audio health messages as a deterrent, and thought that the numbered packs, which caused some confusion, would make it more difficult to form attachments with brands, dissuasive cigarettes appear to have the greatest potential to discourage young people from smoking.

Conclusion: Standardised packaging appears to be protecting adolescents by making cigarette packaging and smoking less appealing, and the on-pack warnings more salient and effective. However, as adolescents are not necessarily exposed to packs at the point of consumption, dissuasive cigarettes may help to extend this protection.

Abbreviations

ASH	Action on Smoking and Health
CRUK	Cancer Research UK
EUTPD	European Tobacco Products directive
FCTC	Framework Convention on Tobacco Control
ISMH	Institute for Social Marketing and Health
TRPR	Tobacco and Related Products Regulation
WHO	World Health Organization

Acknowledgements

Making it to the end of this PhD was not achieved alone, there are many people that helped and supported me along the way. First, I would like to thank my wonderful supervisors, Crawford Moodie, Nathan Critchlow and Linda Bauld. Thank you for your constant support, guidance and reassurance throughout the last four years. Especially thank you to Nathan, for helping me through the extreme highs and lows and for offering endless encouragement and friendship.

I would also like to thank the ISMH team as whole. Since the start of my PhD, the team have consistently made me feel welcome and have offered ample guidance and expertise. It has been a pleasure to go through the PhD process with such passionate and kind colleagues, especially over the last nine months, your support has been invaluable.

Thank you to all schools and participants that took part in this research, without you all, this would not have been possible.

Thank you to my family, especially my parents. You have shown me never ending love and compassion throughout this journey, especially in the most difficult times. Thank you to my partner Ryan for your support and for planning trips and time away, especially in the last few years. Friends have been an important part of this process and have helped me keep perspective and given me a safe space throughout, a special thank you to you all, you know who you are.

I would like to end with lyrics that have had a huge impact on the final writing up stage of this thesis and words that I find fitting for how I would like to approach the future:

'while I'm alive, I'll make tiny changes to earth' (Head Rolls Off) – Scott Hutchison,

Frightened Rabbit

List of outputs

Peer reviewed publications from the PhD data

Mitchell, D., Moodie, C., Ford., A., MacKintosh, A.M., Critchlow, N. and Bauld, L. (2021) Youth perceptions of brand variant names on standardised cigarette packs, and responses to replacing these with numbers: A focus group study in Britain, *Drugs: Education, Prevention and Policy*. doi: 10.1080/09687637.2021.1902479

Mitchell, D., Moodie, C., Critchlow, N. and Bauld, L. (2019) Adolescents' perceptions of standardised cigarette packaging design and brand variant name post-implementation: a focus group study in Scotland. *BMC Public Health*, 19 (1), pp. 1-9. doi: 10.1186/s12889-019-7552-0.

Mitchell, D., Moodie, C., Critchlow, N. and Bauld, L. (2020) Adolescents' reactions to, and perceptions of, dissuasive cigarettes: a focus group study in Scotland. *Drugs: Education, Prevention and Policy*, pp. 1-8. doi: 10.1080/09687637.2020.1732300.

Mitchell, D., Critchlow, N., Moodie, C. and Bauld, L. (2020) Reactions to standardised cigarette packs with varying structural designs, and the association with smoking susceptibility: A post-implementation cross-sectional survey with never-smoking adolescents in Scotland. *Nicotine & Tobacco Research*, 22 (11), pp. 2041-2050. doi: 10.1093/ntr/ntaa109.

Mitchell, D., Critchlow, N., Moodie, C. and Bauld, L. (2020) Reactions to, and trial intentions for, three dissuasive cigarette designs: A cross-sectional survey of adolescents in Scotland. *Tobacco Control*. doi: 10.1136/tobaccocontrol-2020-055842.

Related papers that contributed to the thesis but using non-PhD data

Mitchell, D., Moodie, C. and Bauld, L. (2019) Smokers' perceptions of cigarette packaging with audio warning messages: A focus group study in Scotland. *Nicotine & Tobacco Research*, 22 (6), pp. 984-989. doi: 10.1093/ntr/ntz075.

Moodie, C., Angus, K., **Mitchell, D.** and Critchlow, N. (2018) How tobacco companies in the UK prepared for and responded to standardised packaging of cigarettes and rolling tobacco. *Tobacco control*, 27 (e1), pp. 85-89. doi: 10.1136/tobaccocontrol-2017-054011.

Conference Abstracts

Mitchell, D. (September, 2020) Reactions to, and trial intentions for, three dissuasive cigarette designs: A cross-sectional survey of adolescents in Scotland. Abstract presented at the Society for Nicotine and Tobacco Research online conference.

Mitchell, D. (September, 2020) Adolescent never-smokers' reactions to standardised cigarette packaging varying in structure, and the association with smoking susceptibility: A post-implementation cross-sectional survey in Scotland. Abstract presented at the Society for Nicotine and Tobacco Research online conference.

Mitchell, D. (January, 2019) Adolescents perceptions of, and responses to standardised tobacco packaging: a focus groups study. Initial PhD findings presented at Health and Behaviour Mini Conference, University of Stirling.

Mitchell, D. (September, 2018). Smokers' perceptions of cigarette packaging with audio warning messages: A focus group study in Scotland abstract presented at the Society for Nicotine and Tobacco Research Conference, Munich.

Mitchell, D. (March, 2017). How tobacco companies in the UK prepared for and responded to standardised packaging of cigarettes and rolling tobacco. Abstract presented at the World Conference on Tobacco or Health Conference, Cape Town.

Teaching and public engagement

Critchlow, N. and **Mitchell, D.** (2018) Plain packaging for tobacco: what other countries can learn from the UK's experience. Available: <http://theconversation.com/plain-packaging-for-tobacco-what-other-countries-can-learn-from-the-uks-experience-106094>

Mitchell, D. (June, 2019) Recruiting schools in public health research. Online lecture for the Masters in Public Health, University of Stirling.

Mitchell, D. (January, 2019) Adolescents perceptions of, and responses to standardised tobacco packaging: a focus groups study. Initial PhD findings presented at ASH Scotland STA PhD and early career researcher event, Edinburgh.

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Chapter One: General introduction

1.1 Introduction

This thesis addresses two current or potential tobacco control measures aimed at reducing smoking, particularly among young people. The first is standardised (or plain) packaging for cigarettes and rolling tobacco, a measure introduced in the UK in May 2017 and now mandated in 14 countries (World Health Organization [WHO] 2018; Tobacco Free Kids 2020). The second is novel ways of using cigarette packaging, specifically dissuasive cigarettes (cigarette sticks which feature warnings or are unattractively coloured), packs which play an audio warning message when opened and packs where the brand variant name is replaced with a number. Although there has been considerable research on standardised packaging, there remain important gaps in understanding. For example, most research post-standardised packaging has been conducted in Australia, standardised packaging differs in the UK (e.g. slim packs and packs with bevelled or rounded edges are permitted), and there are relatively few studies with young people in markets with standardised packaging. There are also few studies exploring how adolescents react to the novel ways of using packaging explored in this thesis, despite young people being a key target audience for such policies. For instance, there is some appetite for introducing dissuasive cigarettes among the devolved governments in the UK.

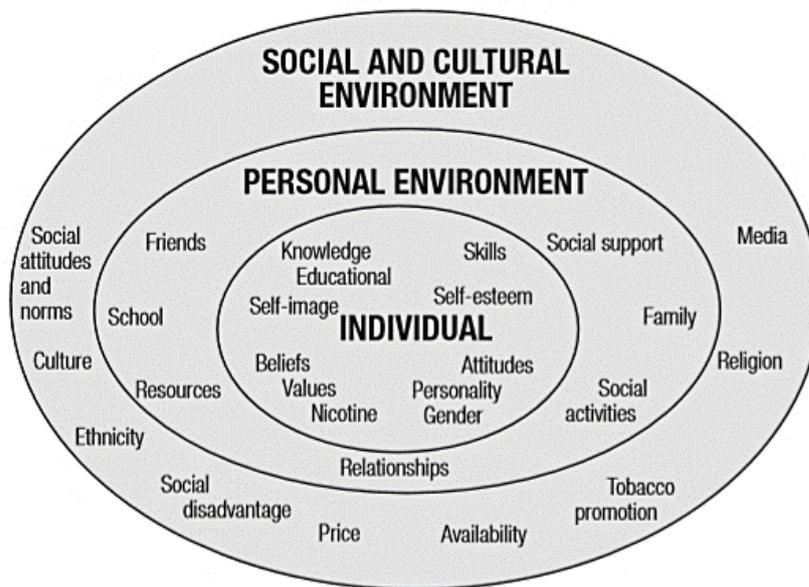
This thesis aims to address these gaps through a mixed-method investigation that involves three interlinked studies that use established consumer research methods in tobacco control. The studies employed in this thesis are focus groups with 16-17 year-olds in Scotland ('study one'); a cross-sectional survey with 12-17 year-olds in Scotland ('study two'); and focus groups with 11-16 year olds across Britain ('study three'). The remainder of this chapter outlines why it is important to examine opportunities to further reduce smoking among young people, the study aims and the outline of the thesis.

The United Nations Convention on the Rights of the Child (UNCRC) was brought into Scots law in March 2021 to give children the opportunity to be heard and recognised in debates and policies that may effect their future (Scottish Government 2021). In Scotland, the third sector provides several examples of young peoples' voices being used to inform policy debates. For example, Alcohol Focus Scotland have conducted engagement work with the Children's Parliament to examine how often they are exposed to alcohol marketing in their daily lives and what influence they feel this has on attitudes towards alcohol use (Alcohol Focus Scotland 2019). Similarly, for tobacco, Action on Smoking and Health (ASH) regularly conduct engagement activities with young people to inform new opportunities to reduce smoking uptake and monitor the effectiveness of existing policies (ASH Scotland 2021). The research in this thesis also aims to capture young people's experiences, attitudes, and voices in relation to recently implemented tobacco control policies (e.g. standardised packaging and more visible warnings) and prospective policies which may help to further protect them from taking up smoking (e.g. dissuasive cigarettes), while the dissemination activities aim to ensure that children's voices are relayed to policymakers (e.g. in peer reviewed papers and policy reports).

1.2 Context of study: smoking behaviour among young people

Smoking in the UK is often initiated before people reach the minimum legal purchase age of 18 (Department of Health 2017; Ng Fat 2016). Consequently, adolescents and young adults are a key target market for tobacco control policies aimed at reducing uptake and, for those who already smoke, stopping continued smoking. The factors that influence whether young people take up smoking are multifaceted, comprising individual, personal, and social and cultural levels (Figure 1.1). Within these three levels there are numerous potential influencing factors (Amos et al. 2009; Hastings and Angus 2008), with tobacco promotion an important social and cultural influence for young people.

Figure 1.1 Influencing factors on smoking behaviour in young people



(The Scottish Government 2013, adapted from Amos et al. 2009)

In the UK, there has been a shift in smoking attitudes and behaviour, with smoking becoming less common and perceived as more socially unacceptable (Department of Health 2017; NHS Health Scotland 2017). There has been a sustained reduction in smoking prevalence, with prevalence among adults having fallen from 27% in 1998 to only 15% in 2018 (Action on Smoking and Health [ASH] 2020a). This decline has also been observed among adolescents. For instance, between 1998 and 2018 smoking rates among 13 and 15 year olds have fallen significantly (from 29% to 6% among 15-year-old boys and 29% to 8% among 15-year-old girls, and from 8% to 2% among 13-year-old boys and 9% to 2% for 13-year-old girls) (The Scottish Government 2019a).

The 2015 Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) found that adolescent smoking rates were at their lowest level in Scotland (The Scottish Government 2016a), with 2% of 13 year-olds and 7% of 15 year-olds reporting that they smoke regularly (The Scottish Government 2016a). The latest 2018 SALSUS report, however, shows that these rates are unchanged from 2015 (The Scottish Government 2019a), highlighting the need

for further action. Adolescent smoking rates in England are similar, with 1% of 11-12 year olds and 7% of 15 year-olds reporting regular smoking (NHS Digital 2019a).

Adolescence represents the transition from childhood to adulthood and is a crucial stage of development. There are different perspectives on how adolescence should be defined. The World Health Organization (WHO), for example, define adolescence as the period between 10 and 19 years old (WHO 2021). Others have challenged this, suggesting that an extended range of 10-24 years old is more developmentally appropriate, as this accounts for the longer lasting impacts of convergent factors, such as, digital media and commercial determinants of health (Sawyer et al. 2018). In this thesis, the age range of 12-17 years is considered. This captures most of adolescence, as defined by the WHO, and is comparable to existing tobacco packaging research in the UK (Ford et al. 2013b; Moodie et al. 2011). An upper age band of 17 years old was selected as at 18 years old an individual is legally considered an adult in the UK (Office for National Statistics 2018) and legally able to purchase tobacco products. Reactions to standardised packaging and dissuasive cigarettes among adults, including younger adults captured under the revised definitions suggested of adolescence, are reported elsewhere (Moodie, Angus and Stead 2021; Moodie, Best, Critchlow et al. 2021; Moodie, Best, Lund et al. 2021; Moodie et al. 2020b).

1.3 Tobacco related harms

Smoking continues to be a leading contributor of health and social issues in the UK (Drope et al. 2018), with approximately 10,000 premature deaths each year in Scotland and 77,800 deaths in 2017 in England (The Scottish Government 2016b; NHS Digital 2019b). Smoking is a risk factor for 15 types of cancer, and is associated with most (80-90%) lung cancer cases (Cancer Research UK [CRUK] 2020a; Centre for Disease Control and Prevention [CDC] 2020). Smoking rates are also considerably higher among people living with mental health illnesses (Drope et al. 2018; Richardson et al. 2019).

In addition to the direct health impacts, smoking is also linked to health inequalities in Scotland. For instance, in 2017, 35% of people living in the most deprived areas in Scotland smoked compared to 10% in the least deprived areas (NHS Health Scotland 2019). These inequalities also affect adolescents in Scotland, with young people living in deprived areas being more likely to take up smoking (NHS Health Scotland 2019). Furthermore, smoking related deaths in the UK are up to three times higher among people living in deprivation, compared to those in more advantaged areas (WHO Europe 2014).

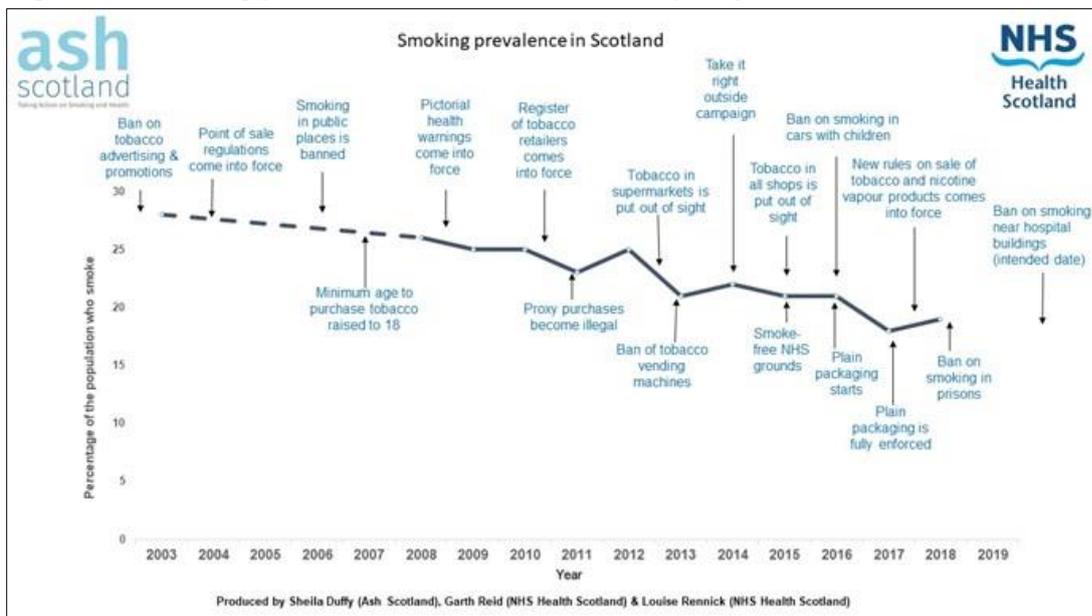
In addition to the impact on health and inequalities, smoking also has a considerable economic and environmental burden. For instance, smoking costs the UK economy £11 billion a year, with £2.5 billion of this on the NHS and £5.3 billion on employers because of smoking related illness, with the remaining £4.1 billion falling on society as a whole, as a result of economic inactivity and smoking related deaths (Department of Health 2017). Regarding the environmental costs, smoking related materials are the most prevalent of all types of litter. Furthermore, cigarette butts contain thousands of chemicals, take over 12 years to biodegrade, and result in approximately 5225 tonnes of waste each year, thus causing significant environmental damage (Public Health England 2016a).

1.4 Tobacco control in the UK

The UK is a global leader on tobacco control (Department of Health 2017; The Scottish Government 2013), being top of the Tobacco Control Scale, ahead of 35 other European countries (Joossens et al. 2020). Policy measures in the UK include: a ban on tobacco advertising, promotion and sponsorship; a ban on smoking in enclosed public spaces; raising the legal purchase age of tobacco from 16 to 18; a ban on the open display of tobacco products in retailers; a ban on smoking in cars with children; standardised packaging; and a ban on the sale of flavour cigarettes (ASH 2020b; The Scottish Government 2019b), see Figure 1.2 for

an overview of tobacco control measures in Scotland this century. A great deal of focus is also given to comprehensive campaigns to raise awareness of tobacco related issues, such as the ‘take it right outside campaign’, aiming to raise awareness of the harms of second hand smoke in the home, the ‘not favour’ campaign encouraging adults not to buy tobacco for adolescents and most recently a campaign in response the COVID-19 pandemic called ‘quit for covid’ (ASH Scotland 2019; Smokefree Action 2020).

Figure 1.2 Smoking prevalence and tobacco control policy in Scotland



(ASH Scotland 2020)

1.5 Context of study: standardised packaging

Packaging is an important marketing tool and is suggested to influence approximately 70% of purchase decisions in the retail environment (Rundh 2013). Packaging assumes a multi-dimensional role, as it communicates product information, prompts emotional reactions, and encourages action (e.g. purchase). Due to its physical nature, packaging is also a multi-sensory marketing tool that synthesises colour, shape, feel, texture and sound (i.e. when opened) to differentiate products and create a competitive advantage (Spence and Gallace 2011; Spence 2016). Packaging is therefore a vital component of the ‘Product’ in the marketing

mix (alongside Price, Place and Promotion) (Spence 2016; Underwood and Klein 2002; Wyrwa and Barska 2017), although it arguably spans all 4 P's.

Multi-sensory packaging techniques have also been applied to tobacco products as a means of increasing appeal, particularly as tobacco control efforts increase (Moodie and Bauld 2015) (Figure 1.3). It is recognised that young people also appreciate tobacco packaging that is unusual in design and shape, for example packs with bevelled and rounded-edges, with these pack designs perceived as more stylish and classy than 'traditional' straight-edged packs (Kotnowski and Hammond 2013). Cigarette pack opening method has also been used to create appeal, facilitate interest and encourage brand recognition, for example unique opening methods such as packs that slide to the side to open or open similar to zippo lighter (CRUK 2012; Moodie and Ford 2011; Moodie et al. 2012). Cigarette packs have also been found to make use of auditory cues where when closed a distinctive sound is made, such as a 'click' (Moodie et al. 2012). Colour has also been established as an important aspect of tobacco packaging which can be used to communicate certain 'product features' such as taste and strength, with lighter coloured packs often deemed weaker in taste and, as a result, the cigarettes less harmful (Hammond and Parkinson 2009).

In response to the use of packaging as a marketing tool, the UK Government introduced standardised packaging for cigarettes and rolling tobacco. The policy came into effect on 20th May 2016, with tobacco companies having a one-year transition period (UK Government 2015). The UK was the third country to implement standardised packaging, following Australia and France, with at least 14 countries now having implemented the policy (WHO 2018; Tobacco Free Kids 2020). Typically, standardised packaging prohibits the use of brand colours, logos and trademarks and is intended to reduce the appeal of tobacco products, increase perceptions of harm, and increase the visibility and effectiveness of the on-pack health warnings (WHO 2018). Early post-implementation evaluation research from Australia, France, and the UK suggests that standardised packaging is meeting its primary intended

aims, by reducing the appeal of packs among adults and adolescents, and increasing warning salience; findings regarding a reduction in harm perceptions are mixed (Aleyan et al. 2020; Brennan et al. 2018; Wakefield et al. 2013; Wakefield et al. 2015; Young et al. 2014; Zacher et al. 2015).

Additional research into standardised packaging is important. There is a lack of evidence post-implementation on how adolescents respond to the policy, even though they are a key target group for this policy (McNeill et al. 2017), and no study has explored whether the variations in pack design (e.g. novel opening methods and different pack structures) permitted in the UK affect smoking attitudes and behaviour.

Figure 1.3 Examples of fully-branded cigarette packs



(Ford et al. 2016; Woodhall 2014)

1.6 Context of study: new uses of packaging to dissuade smoking and encourage cessation

While standardised packaging continues to be adopted globally, smoking remains a significant public health concern. As such, investigating novel means of using the packaging to deter smoking is needed. Three possible ways of doing so, which are explored in this thesis, are; (1) dissuasive cigarettes (on-cigarette warnings or unappealing in colour), (2) use of audio warning messages which play when the cigarette pack lid is opened (Hoek et al. 2016; Lund and Scheffels 2018; Moodie 2016a; Moodie, MacKintosh, Gallopel-Morvan et al. 2017), and (3) packs with the brand variant number replaced by a number (Mucan and Moodie 2018).

Exploring dissuasive cigarettes is of particular importance in light of the Scottish Government's commitment to reviewing the evidence for this measure as part of their latest action plan (The Scottish Government 2018a). While reducing smoking rates to 5% or less by 2034 remains a primary goal of the action plan, the new strategy specifically focuses on a five-year plan concentrating on interventions and policy measures to reduce smoking rates, uptake and related harms (The Scottish Government 2018a). As part of the plan, the Scottish Government proposed that a similar approach for standardised packaging (i.e. unappealing colours and/or warnings) be applied to cigarette sticks as a means of reducing the appeal of smoking and initiation among young people (The Scottish Government 2018a).

There remains a lack of research with adolescents on how they respond to dissuasive cigarettes (Lund and Scheffels 2018; Moodie et al. 2017) with the majority having focused on young adults (Hoek et al. 2016; Moodie et al. 2016a; Moodie, Hiscock, Thrasher et al. 2018). There are few studies on response to packs with audio warnings with adolescents (Mitchell et al. 2019), and no research with adolescents on a concept proposed by the Turkish Government that would involve brand variant name on packs (considered to have the potential

to appeal to, and mislead consumers) being replaced with a number (Mucan and Moodie 2018).

1.7 Research aim and questions

The aim of this thesis is to explore how adolescents react to standardised packaging and novel ways of using the packaging to dissuade smoking. To address this aim, there are six research questions (RQ):

RQ1: To what extent (if at all) are adolescents aware of standardised packaging post full-implementation and what are their reactions to the standardised cigarette packs?

RQ2: To what extent (if at all) do reactions vary for standardised cigarette packaging with different structural features (e.g. slim packs, bevelled edges)?

RQ3: How do adolescents react to dissuasive cigarette designs and how do dissuasive features impact their trial intentions?

RQ4: How do adolescents react to, and perceive, cigarette packs that emit an audio health warning?

RQ5: What are adolescents' responses to brand variant name on standardised cigarette packs?

RQ6: How do adolescents react to cigarette packs with a number in lieu of brand variant name?

1.8 Thesis structure

Having presented the rationale for the research and the research aim and questions, the structure of the thesis will now be outlined. Chapter Two explores standardised packaging, and begins by reviewing key literature about the impacts on young people. It then explores how tobacco companies responded to the implementation of standardised packaging in the

UK and Australia, and outlines the key remaining gaps in understanding and key research questions this thesis aims to address.

Chapter Three outlines novel ways of using the packaging to communicate health messages and the concept of 'numbered packs'. This chapter begins with a discussion of how social marketing uses commercial marketing practices, including the packaging, to attempt to foster healthier choices. The chapter then examines research that has examined novel ways in which tobacco packaging could potentially be used to reduce the appeal of smoking and deter uptake. The packaging strategies covered in Chapter Three include dissuasive cigarettes, novel health warning messages, audio warning messages and the use of a number in lieu of brand variant name. The chapter concludes by highlighting some of the main unresolved issues in this field, particularly the need for more research with young people.

Chapter Four will outline the framework and overall design of the studies in this thesis. This chapter will initially focus on the Critical Social Marketing (CSM) framework used within this study and the study aim, research questions and hypotheses. The chapter will then describe the rationale for the mixed methods design used.

Chapter Five presents the findings from the focus groups with 16 and 17 year-olds in Scotland. The findings presented in this chapter include awareness of, and responses to, standardised cigarette packs, including packs with different structures (e.g. slim packs), and views on brand variant name. This chapter also presents findings on reactions to dissuasive cigarettes and audio warning messages.

Chapters Six and Seven present the findings from the cross-sectional survey, which aim to quantify the reactions to standardised cigarette packaging and dissuasive cigarettes with a larger more diverse sample of adolescents. Chapter Six focuses on adolescent's reactions to

standardised packaging, whereas Chapter Seven provides insight into reactions to, and trial intentions for, dissuasive cigarettes.

Chapter Eight concerns the findings from Study Three, the focus groups that formed part of a wider study funded by Cancer Research UK. This chapter first aims to extend the findings in Chapter Five on how adolescents view and perceive cigarette brand variant names and the connotations (if any) drawn from these on standardised packs. The findings also provide the first insight into how adolescents view cigarette packs with a number rather than brand variant name.

Finally, Chapter Nine will synthesise the data and give conclusions and future directions. First the chapter will summarise the findings from the three studies in relation to each of the research questions and how the findings add to, and extend, the evidence base. The chapter will then turn attention to the CSM framework used within this thesis and how each stage of the framework was addressed. Focus will then be given to the implications for future research with regards to both standardised packaging and novel dissuasive packaging measures. Focus will then be given to the implications for tobacco control policy in the context of the UK and Scotland, and the policy implications as a result of Brexit. The strengths and limitations of the thesis will be provided. Attention will then be paid to reflections on the research process. Finally, an overall conclusion drawing together the findings will be provided.

Chapter Two: A literature review exploring the evidence of standardised tobacco packaging

2.1 Introduction

Tobacco packaging is an established marketing tool that can influence product perceptions (e.g. taste and quality) and encourage smoking, with the techniques used by tobacco companies briefly outlined in Chapter One (e.g. multisensory packaging) (Hammond and Parkinson 2009; McNeil et al. 2017; Moodie et al. 2012). Consequently, the United Kingdom (UK) government fully-implemented The Standardised Packaging of Tobacco Products Regulation (2015) in May 2017, in conjunction with the latest EU Tobacco Products Directive (EUTPD), which came into effect in the UK under the Tobacco and Related Products Regulation (TRPR) (2016), and is discussed in more detail in section 2.3.

This chapter will critically review the evidence for standardised packaging and identify what impact, if any, it has on consumers. First, standardised packaging legislation in the UK will be discussed (section 2.2). The key differences in legislation that have been identified across the countries that have implemented the measure and the issues that may occur as a result, will then be outlined (2.3). The evidence to date on standardised packaging, specifically studies of young people will be critically reviewed (2.4). The chapter will then explore how tobacco companies prepared for, and responded to, the implementation of standardised packaging in Australia and the UK (2.5). Finally, a summary will be provided drawing together the literature presented in this chapter (2.6).

2.2 Rationale for standardised tobacco packaging

Article 13 of the World Health Organizations (WHO) Framework Convention on Tobacco Control (FCTC), a universal public health agreement created in response to the global tobacco epidemic, recommends that countries adhering to the treaty should implement standardised

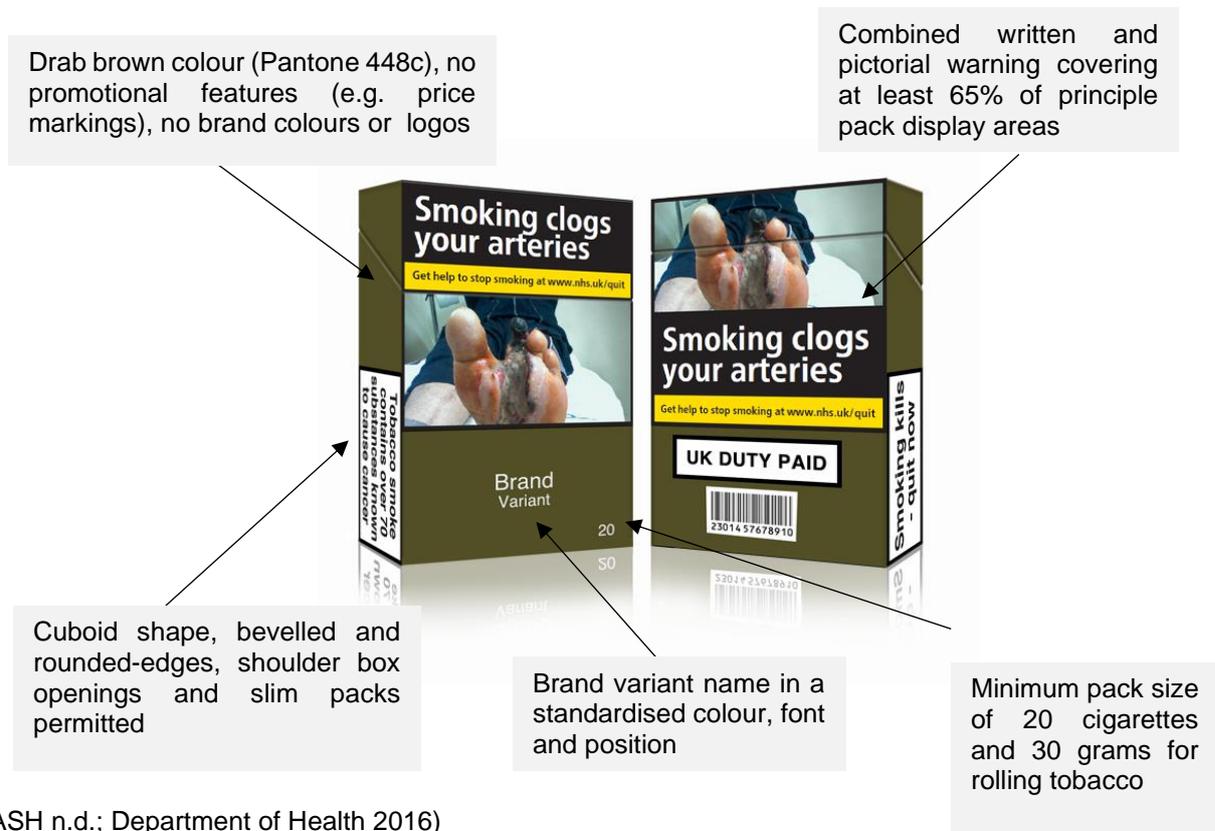
tobacco packaging to restrict the use of packaging as a marketing tool (WHO 2008b). Standardised packaging refers to the elimination of branded elements, including colours, promotional information, logos and brand imagery, with Article 13 also suggesting that standardised packaging should include the standardisation of pack size, shape and material used (WHO 2008a). There are three primary aims of standardised packaging: (1) to increase the noticeability of health warnings, (2) to reduce the ability of tobacco packaging to mislead consumers regarding the harms of different brands, and (3) to reduce the appeal of tobacco products (Australian Government 2011; Hammond 2014).

2.2.1 Standardised packaging legislation in the UK

In the UK, standardised packaging was implemented across a one-year transition period beginning in May 2016, with it becoming mandatory for all cigarettes and rolling tobacco to be in standardised packaging from May 20th 2017. The legislation mandates a 'drab brown' colour for cigarette packs and rolling tobacco pouches, cuboid shape for cigarette packs, standardised brand variant name (e.g. set position, font and size), no embellishing or embossing on the pack surface and packs can be made of carton or soft material (Department of Health 2016).

Standardised packaging in the UK was implemented alongside the Tobacco and Related Products Regulation (TRPR) (UK Government 2016). The TRPR mandates 14 sets of rotational health warnings to be used on tobacco packaging, setting a minimum 65% coverage of the principle display areas of the pack (e.g. the front and back of the pack), with a pictorial and the combined written warning, and a written warning covering 50% of the secondary pack surfaces (e.g. the sides of the pack). The TRPR also sets a minimum pack size for cigarettes and weight of rolling tobacco (e.g. 20 cigarettes and 30 grams), and eliminates the use of price markings or promotional offers on packs (e.g. stickers promoting the price of a product) (UK Government 2016) (Figure 2.1).

Figure 2.1 Standardised packaging requirements in the UK



2.3 Differences identified in legislations across countries

As more countries have adopted standardised packaging, it has become clear that there were differences in legislation. Moodie, Hoek, Scheffels et al (2019) recently examined the differences in legislation across the first five countries to initially fully-implement standardised packaging: Australia, France, the UK, New Zealand and Norway. Given that this thesis, in part, aims to examine adolescents' reactions to the permitted pack structures in the UK post implementation of standardised packaging, the findings provided by Moodie et al (2019a) will now be summarised. See figure 2.2 for an example of standardised cigarette packs from each country. The differences identified include, the transition period permitted, terms used for the legislation, products mandated under the legislation, and the packaging features mandated (Moodie et al. 2019a). Ireland became the sixth country to implement standardised packaging

(Government of Ireland 2015), details on the Irish legislation will also be included in this section.

Figure 2.2 Plain packs in the six countries to have fully implemented this policy (From left to right, Australia, France, UK, New Zealand, Norway, and Ireland)



Concerning the implementation period, there appears no clear or consistent rationale reported for the length of transition period permitted in each country. Australia gave tobacco companies only a two-month transition period, whereas New Zealand has given twelve weeks, France seven and a half months, and the UK, Norway and Ireland twelve months (Government of Ireland 2015; Critchlow et al. 2019; Moodie et al. 2019a).

Similarly, the terms related to the legislation vary by country, with two key terms used: standardised packaging and plain packaging. In Australia and France, the legislation is referred to as plain. While in New Zealand, the UK, Ireland and Norway the legislation is referred to as standardised (Government of Ireland 2015; Moodie et al. 2019a). Both standardised and plain packaging are often used interchangeably.

Regarding products that are mandated under standardised packaging legislation, Australia, New Zealand and Ireland include all tobacco products in standardised packaging (e.g. cigarettes, rolling tobacco, cigars, cigarillos), and in Norway Snus is mandated along with cigarettes and rolling tobacco (Government of Ireland 2015; Moodie et al. 2019; WHO 2018). However, In the UK and France only cigarettes and rolling tobacco are required to be in

standardised packaging (Moodie et al. 2019a), this leaving cigars and cigarillos in fully-branded packaging.

Concerning mandated pack features, all of the first six countries have assigned the same 'drab' brown colour, Pantone 448C. Brand and variant name are also required to be in a standardised font (e.g. text used and size of text), colour and position, and are only permitted one line each (Government of Ireland 2015; Moodie et al. 2019a; WHO 2018). Regarding pack structure, structural features vary by countries. In Australia and New Zealand, all cigarette packs must have straight edges and a flip top lid hinged at the back. In France, the UK and Ireland, however, bevelled and rounded-edges, shoulder box opening methods and slim packs are allowed (Government of Ireland 2015; Moodie et al. 2019a). Given that tobacco industry research has identified that bevelled and rounded-edges are considered more appealing, particularly among young people (Kotnowski and Hammond 2013), permitting these features whereby tobacco companies can still offer differentiation in pack shape, may interrupt the aim of standardised packaging in reducing the appeal of tobacco products, but any possible effect is currently unknown. These variations in pack structure may cause some confusion with regards to the terminology discussed previously, with packs in the UK for instance, essentially being plain, as there are no branded features (e.g. brand colours and logos), whereas in Australia the entire pack is standardised, including in structure (Moodie et al. 2019a).

The latest TRPR prohibits the use of price markings on packaging and product offers (e.g. 2-for-1), the use of tar, nicotine and carbon monoxide content on the pack, information signifying environmental benefits, or any indicators of taste, smells and flavour (European Commission 2016; UK Government 2016). With these restrictions aiming to reduce the ability of information on the pack to communicate misleading information about the product (e.g. reduced harm). However, no country that has implemented standardised packaging, has yet to ban the use of colour descriptors (Moodie et al. 2019a). There remains scope to further restrict the use of brand variant names or descriptors which create an erroneous or misleading impression about

a product or its qualities (e.g. taste, lifestyle, flavours) (Moodie, Angus, Mitchell et al. 2018; European Commission 2016).

2.4 Standardised tobacco packaging studies with youth

Given that this thesis focuses on young people aged 12-17 years, only standardised packaging studies with a sample of young people will be reviewed in this section. We include any study that involved a sample of participants aged 11-19 years, this was to ensure that all relevant findings for the target sample of this thesis were captured. The review will be divided two ways, first, studies that were conducted prior to standardised packaging will be reviewed. Focus will then be given to studies conducted post-standardised packaging. In order to identify all relevant studies with young people a systematic review of standardised packaging evidence, the update of this review and a more recent Cochrane review were initially used (Moodie et al. 2012; Moodie et al. 2013; McNeill et al. 2017). Google scholar alerts were used to track any new published studies using key terms such as 'standardised packaging', 'plain tobacco packaging', 'plain tobacco packaging adolescents' and 'plain tobacco packaging and youth', relevant studies published up until August 2020 were included, but not after.

2.4.1 Evidence on standardised packaging pre-implementation

The majority of evidence on standardised packaging was conducted before any country had implemented the policy, with most of this evidence using cross-sectional or experimental methods. This evidence will now be reviewed, starting with the qualitative evidence.

Findings of qualitative research

Qualitative research focuses on uncovering in-depth views and opinions, through a number of methods, including interviews and focus groups (Bryman 2012). Qualitative research often uses semi-structured topic guides to direct the discussion, while allowing flexibility for any additional interesting and relevant information to be uncovered (Matthews and Ross 2010). In

the case of tobacco packaging research with young people, focus groups allow participants to engage with and handle materials, and discuss them together, as per previous tobacco packaging research with adolescents (Ford, Moodie, MacKintosh et al. 2013). There have been four studies that have focused either exclusively on adolescents or where adolescents assume the majority of the sample prior to standardised packaging.

Beede et al (1990) conducted a qualitative study using focus groups to explore adolescents aged 12-14 years' responses to plain packs. A questionnaire was also used to offer some structure. Four sets of 10 cigarette packs were used, 10 fully-branded packs from New Zealand, 10 plain packs from New Zealand, 10 fully-branded packs from the United States and 10 plain packs from the United states. The plain packs used a white background and black printing, with no other colours and the brand variant name used. The study found plain packs reduced information communicated about a brand and that the plain packs increased recall of health warning information. Adolescents in the groups suggested that plain packs would reduce the likelihood of people their own age trying or taking up smoking, with the plain packs considered 'unattractive', 'boring' and 'dull'.

McCool et al (2012) conducted focus groups ($n=80$) with 14 and 15 year-old non-smokers in New Zealand. They explored whether pictorial warnings and standardised packaging may affect adolescents' perceptions of smoking and their smoking behaviour. The study found that the health warnings were noticeable, with attention paid to the health warnings higher on standardised packs. The combination of standardised packaging and pictorial health warnings were also found to increase the perceived risk of smoking, with the standardised packs also considered boring and that they reduced the social appeal and acceptability of smoking.

In another focus group study with 15-18 year-old current and ever-smokers ($n=55$) in Belgium, perceptions of fully-branded packs and standardised packs were explored (Van Hal et al. 2012). Marlboro was used for the fully-branded pack, as it is a popular and familiar brand

among Flemish young people. The standardised pack was designed specifically for the study, with the health warnings, brand variant name and dimensions the same for both the standardised and fully-branded pack. The study found that, the standardised packs were considered less attractive than fully-branded packs. As a result of the standardised packs being considered less attractive, participants also thought that the health warnings were more noticeable and trustworthy. This reinforces that standardised packaging helps to achieve the key goal of increasing health warning salience and the potential of deterring young people from smoking. However, the least impact was found where daily smokers were concerned, as they felt that they would not change their behaviour, even if their packs were standardised.

Finally, Ford et al (2013a) conducted focus groups with 15 year-olds ($n=48$) in Scotland, with this only the second qualitative study to focus solely on those under 18 years conducted in the UK. The study explored how participants responded towards different cigarette packs including innovative packs (e.g. unique opening methods and slim packs), a pack with distinctive graphics (e.g. colours, symbols and fonts), a pack with price markings communicating value for money, and a brown standardised pack designed for the study. Participants favoured the packs that were distinctive in design or innovative, with these packs communicating favourable user images (e.g. attractiveness and happiness), functionality and reinforced positive feelings about themselves and how they view smoking. Participant's particularly favoured a slim 'perfume' style pack and packs with an innovative opening method (e.g. slide to the side to open or that open in a similar way to a zippo lighter). This revealed that adolescents are susceptible to the marketing elements communicated through packaging, in particular those that differ from packs with the significant branding elements removed (e.g. standardised packs). Standardised packaging was also found to reduce positive feelings towards tobacco packaging and communicated tobacco as a harmful product.

Findings of experimental research

Experimental research aims to rule out alternative explanations of relationships between variables by separating cause and effect. Experimental research often involves a number of conditions whereby the independent variable is manipulated and the rest remain consistent (Coolican 2013). Eight experimental studies have explored the potential impact of standardised packaging on young people, including standardised packs that differ by level of branding (e.g. fully-branded, partially branded or standardised with no branding), colour, shape and method of opening.

Germain et al (2010) conducted an online between-subjects experimental survey with adolescents aged 14-17 years ($n=1,087$). The experimental conditions were developed based on the three most popular brands in Australia, with five degrees of packaging and pictorial health warning used (30% and 80%): (1) fully-branded pack with 30% pictorial warning, (2) standardised brown pack with brand font remaining and 30% pictorial warning, (3) standardised brown pack with brand name in a standardised font with 30% pictorial warning, (4) standardised pack with no brand name and a 30% pictorial warning, and (5) standardised pack with brand name and 80% pictorial warning. Participants were randomly allocated one of the 15 experimental conditions. As more branded elements were removed from the packaging, favourable perceptions, such as pack appeal and positive smoker attributes, reduced. The authors recommend that the pictorial warnings should cover 90% of the pack face to have the most effect on adolescents.

Maynard et al (2013) conducted an experimental study with young weekly smokers, experimenters and non-smokers aged 14-19 years in the UK ($n=87$), to investigate whether standardised packaging increased the noticeability of health warning messages. Eye-tracking equipment observed eye-movement towards the pictorial health warnings on fully-branded and standardised packs. The study found that standardised packs increased the attention paid to pictorial warnings, particularly among experimenters and weekly smokers, more so than

on branded packs. However, daily smokers were less likely to pay attention to the health warnings on the standardised packs than the non-smokers, possibly due to actively avoiding the warnings. Non-smokers were more likely to focus their attention on the pictorial warnings on both packs over any other element of the pack.

Hammond et al (2013) conducted a between-group experimental online survey to explore the potential impact of standardised packaging among young females aged 16-19 years ($n=947$) in the UK. Participants were randomly exposed to one of four conditions: (1) fully-branded female-orientated packs, (2) fully-branded female-orientated packs without descriptors, (3) standardised female-orientated packs (without brand imagery) and (4) 'regular' or non-female brands from the UK, with 10 packs shown to participants in each condition. The female-orientated brands were also selected to explore a range of different descriptors, in particular, those that communicated product attributes such as flavour (e.g. superslims, menthol, pink, vanilla, cherry etc.). The four outcome measures of appeal, taste, tar delivery and health risk were used to explore responses to the packs. Participants found standardised packs significantly less appealing than the branded pack, particularly overtly female branded packs, with standardised packs also rated worse tasting than fully-branded packs. Out of the brands included in the standardised pack conditions, the most preferred packs were those with the brand names Vogue and Silk Cut. Similar to the findings uncovered by Hammond et al (2009), brand name and descriptors may be the final means of brand differentiation and appeal in the absence of brand imagery.

Hammond et al (2014) conducted an online within-subject experimental survey with adolescents aged 11-17 years ($n=762$) in the UK, exploring their perceptions of fully-branded and standardised packs. A Benson and Hedges pack was manipulated into 2x3 factorial design where the appearance of the pack was manipulated based on standardised pack color (brown or white) and type of health warning (40% text warning, 40% pictorial warning or 80% pictorial warning). Participants viewed six pairs of packs based on the factorial design. An

additional two packs were also included in the study. These were a fully-branded Silk Cut super slims pack and a regular fully-branded Silk Cut pack, both of which were available on the market in the UK at the time of the study. The main outcome measures were tar content, taste perceptions, harm perceptions, attractiveness, trial intentions and health warning salience. Standardised packs were found to reduce the appeal of packs and perceived harms of smoking, with the brown standardised pack having more of an impact than the white. Participants were also more likely to select a fully-branded pack than either of the standardised packs. The pictorial health warning was deemed more impactful than the text only warning and out of both Silk Cut packs, participants were significantly more likely to show preference for the super slims packs.

In another study, adolescents in secondary schools in the Republic of Ireland aged 16-17 years ($n=1,378$) completed a within-subject experimental survey (Babineau and Clancy 2015). All participants viewed three pairs of cigarette packs, for Silk Cut, Benson and Hedges, and Marlboro. The three conditions were: (1) a fully-branded pack, (2) a pack designed in accordance with the EU TPD guidelines (e.g. minimum health warning requirement on principle surfaces of pack), and (3) a standardised pack in line with Ireland's 'Standardisation of Tobacco Packaging Act 2014'. The packs with branding remaining (e.g. fully-branded and EU TPD) were considered healthier than the standardised packs. Gender was a significant predictor of pack appeal, particularly for branded packs with 'female' orientated colour, for instance, the purple on the Silk Cut packs. The study also found that by removing branded elements, pack appeal, attractiveness and misconceptions regarding the healthiness of different brands declined.

Andrews et al (2016) conducted an experimental online survey with 13-18 year-old ($n=1,066$) smokers in the United States, Spain and France. The study included packs varying in health warning messages and branding for the most popular brand available across all three countries, Marlboro. Eight pack conditions were included in the study. Four of the packs

maintained the brand logo, with one of the packs carrying a text only warning and the other three a text and graphic (e.g. pictorial) warning combination, with each varying in how graphic the image was (e.g. absent of warning, low, medium and high). The same combination of warnings was used for the standardised pack conditions, with the standardised pack colour based on Australia's policy (e.g. drab brown). The intention of the study was to explore how adolescents respond towards different graphic warnings and whether standardised packaging increased the effectiveness of the warnings. The moderate and high graphic health warnings generally evoked fear, reduced cigarette cravings and feelings towards the packs and thoughts about quitting. However, while standardised packs did not have as strong an impact as the graphic health warnings, they also reduced cravings, diminished feelings towards the packs and induced fear.

Finally, Mutti et al (2017) conducted an experimental online survey in Mexico with 16-18 year-olds ($n=359$), exploring perceptions of fully-branded and standardised packaging. The study included three experimental pack conditions: (1) fully-branded packs, (2) standardised packs with brand name and descriptors (e.g. descriptors communicating product attributes such as flavour or colour), and (3) standardised packs without descriptors. Dependent variables included pack appeal, taste and harm perceptions and smoker image ratings (i.e. gender, stylishness, popularity, coolness, sophistication, glamour and weight). Fully-branded packs were considered more appealing, better tasting, and associated with a more positive smoker image than standardised packs, with taste and appeal ratings were highest among smokers and susceptible non-smokers.

Findings of cross-sectional research

Surveys are regularly used in public health research either by the use of cross-sectional or longitudinal approaches (Ford, MacKintosh, Moodie et al. 2013; Moodie, Best, Critchlow et al. 2020). Cross-sectional research refers to data collected at one-time point, whereas longitudinal uses multiple time points and is conducted over a period of time (Saunders et al.

2016). Surveys are commonly used to explore what impact policy may be having, and have often been used in tobacco research with young people (Harris 2011). There have been three cross-sectional studies exploring young people's perceptions of standardised packaging prior to implementation.

Hammond et al (2009) conducted an online survey with young adolescents aged 11-17 years ($n=806$) to explore the impact of cigarette pack design, this study also included a sample of adults, however, focus is given to the findings in relation to the adolescent sample only. Participants were asked to compare sets of cigarette packs on various measures: perceptions of taste, health risk, tar delivery, attractiveness, and ease of quitting. The study included both fully-branded packs and standardised packs. The fully-branded packs were selected to examine responses to popular brands on the UK market and different descriptors (e.g. gold, smooth and light) and variations in pack colour (e.g. fully-branded packs with brand colours). Two variations in standardised packs colour were included, white and brown. The main outcome measures were tar content, taste, attractiveness, ease to quit and preferred brand for trying. The standardised packs reduced the false beliefs held by adolescents concerning harm and were deemed less attractive. However, false beliefs remained when participants viewed standardised packs with descriptors such as 'smooth' and 'light'. This suggests that even on standardised packs, descriptors communicating product attributes may still hold appeal.

In another online survey, perceptions of cigarette packaging including three standardised packs varying in shape and opening method were explored with adolescents aged 10-17 years ($n=658$) in the UK (Moodie et al. 2011). A total of eight outcome measures were used, these were attractiveness, price, coolness, popularity, fashion, interest, whether the packs were for old or young people and which pack they would like to be seen with. Participants expressed negative feelings towards the standardised pack with a flip-top lid, with 91% rating it as unattractive, 51% rating it as cheap and 87% rating it as uncool. When shown the standardised

flip-top lid pack alongside two novel standardised packs, preference was shown for both the standardised slide pack and the standardised superslims pack. Susceptible never-smokers were three times more likely to show preference for the standardised super slims pack and two times more likely to prefer the standardised slide pack than any of the other packs, compared to non-susceptible never-smokers. The findings suggest that pack shape, even in standardised pack conditions may reinforce susceptibility to smoke.

Ford et al (2013b) conducted an in home cross-sectional survey exploring the association between cigarette pack design and susceptibility to smoke among non-smoking adolescents aged 11-16 years ($n=1,025$) in the UK, as part of the Youth Tobacco Policy Survey (YTPS). The YTPS, initiated in 1999, is a long running cross-sectional study exploring how adolescents respond to tobacco policy in the UK, using in home face-to-face interviews and a self-complete questionnaire to gather information on smoking behaviour. Three styles of packs were used in the study, including three novelty packs (i.e. slim pack, slide pack, strikingly coloured pack), a regular branded pack (e.g. no novel features) and a standardised pack (e.g. a brown pack with standard shape and opening method). To explore responses to the packs, the pack ratings (e.g. attractiveness, coolness, eye-catching etc.) were combined into pack appraisal scores with participants either giving positive pack appraisal scores or negative. Similarly, scores were combined to assess pack receptivity, with participants either receptive to packs or not. While the ratings for all packs were generally negative, the novelty packs were rated less negatively than the regular and standardised pack. It was found that susceptibility was associated with positive pack appraisal. For example, those that positively appraised the super slims pack were three times more likely to be susceptible to smoking than those who did not report positive appraisal. The findings suggest that pack shape and opening method may influence adolescents' perceptions of smoking and their potential smoking behaviour.

Findings of mixed methods research

There has been one mixed methods study conducted prior the implementation of standardised packaging with young people. Rootman et al (1995) explored the effect of plain packaging on 12-17-year-old smokers and non-smokers in Canada, using both structured interviews and group interviews. There were no specific details given on the colour used for the plain packs, but printing was in a standardised font and that only brand names, health warning labels and UPC codes were to be shown on the packs. Two brands were used, Players and du Maurier, as both are popular brands among youth in Canada, and third a brand, Craven, used to represent an unpopular brand. The packs featured a health warning covering 25% of the front and back of the pack using black lettering reading 'cigarettes cause fatal lung disease' and a black border. Reactions to the fully-branded packaging were more positive than for the plain packing, with young people considering people that would use the fully-branded packaging cool and popular. The majority of the young people deemed plain packaging to be boring, off-putting and that the plain packs increased the salience of the health warnings.

2.4.2 Evidence on standardised packaging post-implementation

Unlike standardised packaging research prior to implementation, there remains limited evidence post-implementation, with the majority of this evidence from Australia where the policy has been implemented for over eight years. The real-world evidence, specifically with young people, will now be reviewed, starting with qualitative research.

Findings of qualitative research

There has been one published qualitative study out with the findings in this thesis (Chapter Five) conducted post implementation of standardised packaging with young people. MacGregor et al (2020) conducted 16 focus groups with young people aged 13-16 in four schools Scotland, with the groups segmented by age (13-14 and 15-16) and gender. The study aimed to explore young people's awareness of and exposure to standardised packaging in the UK. The study used four different standardised cigarette packs from the UK, each

displaying a different health warning. Awareness of standardised packaging was high among the young people in the focus groups, with packs described as 'dark' or 'sludge green', all packs were thought to look similar and the health warnings more salient. Standardised packs were consistently considered unappealing and unattractive. Regarding the impact of standardised packaging on behaviour, participants were likely to believe that the packs would be off-putting to young non or occasional smokers, but would have the least impact on established smokers.

Findings of cross-sectional research

There have only been three cross-sectional studies to focus on young people or provide a separate sample of young people (as well as adults) post-implementation of standardised packaging. White et al (2015) conducted a 'real-world' study in Australia exploring standardised packaging and brand image perceptions with adolescents. Four brands were included in the study, all of which are popular with young people in Australia, these were, Winfield, Peter Jackson, Longbeach, and premium brand Benson and Hedges. In the study, a cross-sectional school based survey with 12-17 year-olds was used pre and post standardised packaging, in 2011 ($n=6,338$) and 2013 ($n=5,915$). The main outcome measures were ease of smoking and quitting, addictiveness, harm and the look of the pack. The study found that standardised packaging had reduced the appeal of tobacco products amongst adolescents and the positive characteristics previously associated with certain brands had diminished post-implementation (e.g. taste perceptions, smoker image, attractive packaging). The study also found that participants were not sure as to whether some brands are easier to smoke than others, highlighting that standardised packaging interrupts the false harm perceptions communicated by fully-branded packs. There was also a decrease in participants thinking that some brands packaging was nicer than others.

There has only been one published cross-sectional study conducted in the UK post-standardised packaging out with the findings in this thesis (Chapter Six). Bogdanovica et al. (2017) explored awareness of standardised packaging in the final implementation phase among adolescents and adults. The study employed two surveys, one with adolescents aged 11-15 years ($n=1041$) and one with adults aged 18 years and over ($n=2033$). With regards to adolescents' awareness of standardised packaging, only one in five adolescents were aware of the policy, with awareness being higher among ever-smokers than never-smokers. While the awareness of standardised packaging identified for adolescents in this study was low, standardised packaging had yet to be fully implemented, therefore there is scope to assess awareness post full-implementation.

To date, there is only one study exploring adolescents' responses to standardised packaging conducted in France, the second country to implement the measure (El-Khoury et al. 2019a). In a two wave national cross-sectional telephone survey, adolescents' perceptions of tobacco and tobacco use across two survey waves were explored, one before standardised packaging (2016: $n=2046$) and the second, one-year post-implementation of standardised packaging and larger pictorial health warnings (2017: $n=1999$). The main outcome measures included, fear of the consequences of smoking, smoking experimentation (e.g. having tried smoking, even if only one puff) or current smoking and brand perceptions. Compared to 2016, adolescents were significantly more likely to fear the consequences of smoking, and considered smoking dangerous. Smoking experimentation decreased from 26.3% in 2016, to 20.8% in 2017, and smoking prevalence fell from 13.7% in 2016 to 9.6% in 2017. While smoking has previously been accepted in a social context in France, post-implementation of standardised packs with larger graphic health warnings adolescents were more likely to believe smoking was more socially unacceptable.

2.4.3 Summary of standardised packaging research with adolescents

It is clear from the literature that pack design influences adolescents' perceptions of brands and smoking, and that they are susceptible to unique and novel packaging. The evidence indicates that standardised packaging has the ability to reduce positive brand and smoker attributes, appeal and taste perceptions, and in most cases, misconceptions regarding harm and that packs increase health warning salience. Although, there are limitations of the evidence. The majority of the studies identified were pre-implementation and used 'mock' or purposively designed standardised packs, with these packs using various colours, including lighter colours (e.g. white), which is vastly different to the 'drab brown' colour used for standardised packaging in the majority of countries to implement the policy (WHO 2018). There remains little evidence on the impact of standardised packaging in a market where this measure has been fully-implemented, in particular, with adolescents. There is also no evidence that explores consumer reactions post-full implementation of standardised packaging to differences in legislation, such as, different pack structures permitted in the UK. In addition, there remains a lack of evidence in countries other than Australia (where packs are more rigorously regulated) with one study in France and two in the UK.

2.5 Tobacco industry response to standardised packaging

Tobacco companies have a long history of responding to tobacco policy with new tactics (Hastings and MacFadyen 2000; MacFadyen et al. 2001). For instance, in response to standardised packaging in the UK, tobacco companies prolonged the use of fully-branded packs throughout the transition period and continued to use aspects of packaging such a structure (e.g. novel opening methods and edge type) and product innovation (e.g. capsules cigarettes) (Critchlow and Mitchell 2018). Since the introduction of standardised packaging in Australia and the UK, several studies identified how tobacco companies prepared for and responded to the policy, before and after implementation. The findings demonstrate that tobacco companies continued to focus on product and pack developments as a means of

maintaining appeal and marketing power, even after implementation. These findings will now be discussed.

2.5.1 Tobacco packaging developments in response to standardised packaging in Australia

Scollo et al (2015) monitored pack and product trends of factory-made cigarettes, before and after implementation of standardised packaging, for the three largest tobacco manufacturers in Australia: British American Tobacco Australia, Philip Morris and Japan Tobacco International. The study included a review of trade press magazines, promotional flyers sent to retailers from manufacturers, and on-line and offline store visits in the 12 months before and after implementation of standardised packaging. Five key trends were identified. Firstly, tobacco companies attempted to reassure consumers of product quality through pack inserts, on-pack messages and pack skins designed to cover the new standardised packs. Secondly, greater promotional focus was given to brand names as a means of differentiating or emphasising product qualities. This included, for example, the addition of colours to communicate product strength, the introduction of evocative descriptors and the lengthening of names to reduce the brown space on standardised packs. Thirdly, there was an increased focus on value for money, through the introduction of menthol varieties for value brands, super value packs, extra-length cigarettes and packs containing extra cigarettes. Fourthly, product innovation increased, with the introduction of capsule cigarettes and mint leaf infusions (e.g. tobacco mixed with mint leaves), and fifthly, each tobacco manufacturer removed less popular brands and pack sizes to rationalise their product offering.

Scollo et al (2018) extended their initial study to evaluate the trends four years following the implementation of standardised packaging, using the same methods as their previous study. Tobacco companies continued to introduce novel pack sizes, including packs containing 'bonus' or 'extra' cigarettes and larger pack sizes (e.g. 21, 22, 23 and 26), in particular, for value cigarette brands which offered a more competitive price-per-cigarette. They found that

tobacco companies also sustained product innovation by continuing to introduce extra-length cigarettes, slim cigarettes and menthol capsule variants. A number of tobacco companies engaged in filter innovation, a new trend to the Australian market in 2015. The innovations introduced included recessed filters and extra dense filters, otherwise labelled as 'firmer feel' filters. Tobacco companies continued to focus on introducing evocative brand descriptors. These often included descriptors communicating the inclusion of menthol capsules, inferring sophistication (e.g. Deluxe or Signature) or modernity (e.g. Hybrid or Fusion), with capsule cigarettes holding particular appeal with young people (Moodie, Ford, Dobbie et al. 2017). Finally, there was evidence of umbrella branding (e.g. new products introduced under an established brand) and brand rationalisation (e.g. removal of less popular brands).

2.5.2 Tobacco packaging developments in response to standardised packaging in the UK

There have also been two studies in the UK exploring how tobacco companies prepared for and responded to the implementation of standardised packaging. Moodie, Angus, Mitchell et al. (2018) conducted a surveillance of the UK's cigarette and rolling tobacco market in the 12-month period before implementation, the 12-month transition period and one-month post implementation (May 2015 - June 2017). Similar to Scollo et al (2015), the study included a review of trade press magazines, regular in-store visits and monthly monitoring of cigarettes and rolling tobacco on the websites for the four largest supermarkets in the UK (e.g. Asda, Tesco, Sainsbury's and Morrison's). The aim of the study was to identify package, product and brand trends which occurred before and immediately after (e.g. one-month post implementation) implementation of standardised packaging.

Pre-implementation several packaging trends focusing on graphical design were identified, including pack redesigns and limited edition packs. With these packs often focusing on communicating premium quality, brand heritage or modernity (e.g. Chesterfield and Marlboro touch). While limited edition packs were common in the UK prior to standardised packaging,

at least six limited edition packs were introduced at the beginning of the transition period (May 2016) (Figure 2.3). By introducing limited edition packs a collector's mentality may have been induced and a lasting impression of brand image instilled in the consumer's mind once they had sold out and standardised packs became mandatory (Critchlow and Mitchell 2018).

Figure 2.3 Limited edition packs introduced in the transition period on the UK



Tobacco companies also increased focus on pack structure. For instance, Philip Morris introduced the innovative Pro-Seal technology across all Marlboro variants, in addition to new bevelled-edges. Pro-seal is a novel foil inside the pack that reseals every time the pack lid is closed, aiming to maintain the 'freshness' of the cigarettes and to sustain brand differentiation within the standardised packaging environment (Convenience store 2016a), (Figure 2.4). All four leading tobacco companies introduced durable and reusable limited edition embossed branded tins for rolling tobacco and cigarette brand variants. For example, Philip Morris released a tin for Marlboro Gold in a pack size of 10, prolonging the life span of a pack size no longer permitted in the UK (UK Government 2016); pack sizes of 10s, also alluded to as

'kiddie packs', have been found to appeal to adolescents (Cancer Research UK 2016) (Figure 2.4). The branded tins also offer the opportunity for cigarettes and rolling tobacco to be decanted and the tins used as alternative storage to standardised packs (Moodie et al. 2018b), (Figure 2.4). Tobacco companies also introduced smaller pack sizes pre-implementation, for both rolling tobacco and cigarettes, before the minimum pack sizes (e.g. 20 for cigarettes and 30 grams for rolling tobacco) were enforced (UK Government 2016). Post-implementation some tobacco companies introduced large pack sizes, including packs of 23 and 24 cigarettes, in order to communicate value for money, similar to trends observed in Australia. Slim packs appeared on the market post-implementation. There is a lack of clarity on actual pack dimensions permitted in the UK, and as such, slim packs continue to be available on the market (Figure 2.5).

Pre-standardised packaging, tobacco companies engaged in product innovation, including the introduction of new capsule variants, which were first introduced in the UK in 2011 (Moodie et al. 2018b) and filter innovation. The capsule variants introduced included, JPS Crushball, Lambert and Butler Ice blast and Sovereign Dual. Notably, Pall Mall Dual, the UK's first double capsule cigarette was brought to the market, containing both a spearmint and menthol capsule (Moodie et al. 2018b). Capsule cigarettes have experienced significant growth in the UK since their introduction in 2011 and now account for 10% of the total UK's cigarette market (Moodie et al. 2018c; Moodie et al. 2019b).

Figure 2.4 Use of pack structure (Marlboro Pro-Seal and branded cigarette and rolling tobacco tins)



Figure 2.5 Standardised packs varying in structure and dimension in the UK (Rounded-edge pack, Bevelled-edge packs and Slim pack)



Focus was given beyond the inside of the cigarette to the filter itself. The JPS Triple Flow, with a multi-segment filter facilitating an 'easy draw', which was labelled 'a revolution in filter technology' and the Pall Mall Taste Plus filter, featuring a recessed filter, which according to Imperial tobacco, supposedly enables a firmer in hand feel and advanced filtration, were both brought to the market pre-implementation (Convenience Store 2016b; Moodie et al. 2018b). With filters remaining subject to little regulation, the cigarette has become one of the primary means of communication available to tobacco companies in the UK, particularly as the important branding elements of the pack such as colours and logos are removed (Rossel 2016). Filter innovation continued up to one-year post implementation with Sterling Duel Star edition found from the routine in store visits, featuring a cut out star shape on the filter tip (Figure 2.6). Moreover, the filter is the first thing seen when a cigarette pack is opened, and as such, innovative filters facilitate product differentiation in a standardised packaging environment.

Figure 2.6 Sterling Duel Star Edition



Concerning branding, tobacco companies engaged in several strategies to continue promoting their products. Several new rolling tobacco brands were introduced to the UK market and a number of tobacco companies extended their product offerings by introducing new variants (e.g. Bentley and Amsterdamer). Similar to findings from Australia, focus was given to brand variant names, possibly in an attempt to continue appealing to consumer's post-implementation of standardised packaging. Changes to variant name commonly included colours, for instance, 'green' to communicate 'menthol' and 'blue' to communicate 'smooth' (e.g. Sterling smooth became Sterling Blue), with colour descriptors such as blue often being paired with 'bright' or 'sky' (e.g. Mayfair Sky Blue and Carlton Bright Blue). Given that the EUTPD regulation has prohibited the use of taste and flavour descriptors since 2003 in the UK (e.g. 'light' and 'mild') (Yong et al. 2011), tobacco companies now appear to be using colour connotations – which are not currently restricted – as a mechanism to communicate these attributes. Other changes to brand variant names included the addition of evocative descriptors, for example '*JPS Black*' became '*JPS Legendary Black*'. It has been argued that in the absence of full branding on packs, brand variant names are vital to tobacco companies (Scheffels and Lund 2013).

Finally, there is recent long-term evidence from the UK which explored tobacco company adaptations to standardised packaging, which used similar methods to the previous studies discussed. Evan-Reeves et al (2019), used a combination of trade press, purchasing packs for the top eight cigarette and rolling tobacco brands in the UK to assess any visual or sensory changes to packaging, tobacco advertisements in retail press and Nielsen data to assess tobacco sales. The study found that tobacco companies increased the production of fully-branded packaging before the beginning of the transition period for standardised packaging (May 2016) and prolonged the sale of fully-branded packaging through the transition period, echoing previous evidence (Critchlow et al. 2019). The study also found that tobacco companies asserted greater focus on brand variant name, specifically, the use of colour

descriptors, as was found in the previous studies (Scollo et al. 2013; Scollo et al.2015; Moodie et al. 2018b)

2.6 Summary

While the UK government introduced standardised packaging to reduce the ability of the pack to be used as a marketing tool, tobacco companies continued to exploit the packaging and product post-implementation. The continued use of the pack has only currently been observed in the UK, as a consequence of the leniency and ambiguity of the UK's legislation regarding permitted pack features (e.g. structural variations) (2.4.4). As such, tobacco companies focused on bevelled and rounded-edges, with slim packs also appearing on the market post implementation. Several potential issues arise as a result of these findings: 1) does the continued use of pack features (e.g. pack structure and brand variant name) interfere with the aims of standardised tobacco packaging, 2) do packs varying in structure hold appeal among adolescents' post-implementation of standardised packaging in the UK, and 3) are there other measures worth considering to enhance standardised packaging legislation and deter smoking among adolescents further. The following chapter explores the potential for health messages to be communicated beyond the pack using alternative communication methods, including the cigarette itself and audio warning messages in cigarette packs.

Chapter Three: A literature review exploring packaging as a health communication tool and packaging measures designed to dissuade smoking

3.1 Introduction

In 2008, the World Health Organization proposed that tobacco will kill approximately eight million people worldwide by 2030 unless serious action is taken against the tobacco epidemic (WHO 2008b). It is established that tobacco marketing has been a substantial contributor to smoking uptake and the harms caused (Henriksen 2012). In response, the UK government implemented standardised packaging, along with several other countries, aiming to reduce the promotional power of tobacco packaging, one of the final marketing opportunities left in the UK (Chapter One). In Chapter Two, the evidence base for standardised packaging was critically evaluated, with a particular focus on young people, the age group of interest in this thesis. While the evidence supports standardised packaging, tobacco continues to contribute to health inequalities and remains a major source of avoidable mortality (section 1.3). In addition, the pack continues to be used by tobacco companies as a communication tool post-standardised packaging, particularly through filter innovation and brand variant name (2.7.2). It is therefore of value to explore other tobacco packaging measures, beyond standardised packaging, designed to deter smoking, which is the focus of this chapter.

First, an overview of the literature concerning health communication (3.2) and social marketing (3.3) will be presented. Research exploring the use of packaging as a means of communicating health behaviours will then be discussed (3.4). Focus will then be given to the evidence base for the use of tobacco packing to communicate health messaging, including: dissuasive cigarettes (3.5.1), audio warning messages (3.5.2), novel warning messages (3.5.3) and the use of numbers in lieu of brand variant names (e.g. numbered packs) (3.5.4). Finally, a summary of the literature and the research agenda will be provided (3.6).

3.2 Health communication

Communication has been defined as the distribution of information through verbal, non-verbal and written sources (Shlafer et al. 2016). The National Institutes of Health (2002) define health communication as:

"The study and use of communication strategies to inform and influence individual decisions that enhance health" (p. 2)

There are several levels at which health information can be communicated, including at an intrapersonal, interpersonal, and population level (Berry 2006). Intrapersonal communication refers to how individuals view themselves, including their self-image, how they interpret statements or messages being communicated and their own perceptions of the world (Berry 2006). Health communication at an interpersonal level involves communication among specific or key target groups (Schiavo 2013). For example, interpersonal communication often takes place between health practitioners and patients, among family and friend groups, social organisations and within the social network of an individual (Ackerson and Viswanath 2009). Interpersonal health communication has been used in tobacco treatment programmes specifically focusing on those in low socioeconomic backgrounds, where interpersonal communication is used as a secondary transmission source for population level cessation campaigns (Parks and Kim 2018). Health communication can also be aimed at an entire population (Schiavo 2013; Berry 2006). Health communication has often been delivered at a population level through tailored campaigns using various channels, including traditional media such as print and now commonly through digital channels such as social media (Snyder 2007; Hastings 2007).

3.3 Social marketing

Marketing has traditionally been used to sell products and encourage consumption, including those that cause health and social problems, such as, tobacco, alcohol and foods high in fat, salt and sugar (Ford et al. 2012; Critchlow 2017; Martin et al. 2019). The same principles used in traditional marketing have been also used to encourage positive behaviour change, in particular health behaviours, known as social marketing. Over 50 years ago the psychologist Weibe queried '*can brotherhood be sold like soap*' (Cugelman et al. 2007). He suggested that if organisations 'selling' intangible social objects, such as, attitudes towards the environment, adopted similar concepts to commercial marketers, they would be successful (Cugelman et al. 2007), with Kotler and Zaltman laying claim to the concept in 1971 (Lefebvre 2013). Gordon (2011) defines social marketing as:

"Social marketing is concerned with the application of marketing knowledge, concepts and techniques to enhance social as well as economic ends. It is also concerned with analysis of the social consequence of marketing policies, decisions and activities"
(Gordon 2011, p. 90)

Hastings and Saren (2003) suggest that the techniques used by major tobacco companies to sell cigarettes can be used in reverse to deter smoking (e.g. reducing the appeal of the packaging). The remainder of this section will focus on social marketing approaches (3.3.1), behavior theories that inform social marketing strategies (3.3.2), the principles of social marketing (3.3.3) and how tobacco packaging has been used as a social marketing tool (3.3.4).

3.3.1 Social marketing approaches

Social marketing has two central approaches: downstream and upstream (Hoek and Jones 2011). Downstream social marketing encourages individual behaviour change, where

individuals are provided with offers which deliver significant benefits compared to existing harmful behaviours (Hoek and Jones 2011). Downstream social marketing often occurs through health promotion and educational activities (Lefebvre and Flora 1988). For example, interventions designed to reduce smoking and encourage cessation.

Upstream social marketing instead, focuses on the wider social context in which an individual's behaviour is influenced (Hastings 2007). This is often achieved by influencing professionals, such as, doctors who can directly deliver prevention strategies to patients and policymakers that have the ability to implement effective legislation to reduce the harm caused by unhealthy behaviours (e.g. smokefree policies, point-of-sale display ban on tobacco products etc.) (Stead et al. 2007). Upstream approaches often focus on changing behaviour across the whole population and delivering benefits to a large number of people (Hoek and Jones 2011). Hoek and Jones (2011) argue that in terms of tobacco and alcohol, population-level policies have the greatest impact on behaviour.

3.3.2 Behavior theories informing social marketing strategies

Hastings (2007) notes that understanding the theory behind human behaviour is important in developing social marketing strategies. He suggests that there are three key behaviour theories that social marketers should be aware of: (1) Stages of Change Theory; (2) Social Cognitive Theory; (3) and Exchange Theory.

The Stages of Change Theory was originally applied within the area of smoking cessation (Courneya et al. 1998). As the name suggests, the Stages of Change Theory recognises that individuals pass through a series of stages to meet behaviour change, with five key stages having been identified, these are: pre-contemplation, contemplation, preparation, action and maintenance (Prochaska et al. 1994). The Theory recognises that individuals do not make complex decisions in a binary fashion, particularly life altering decisions such as quitting smoking (Hastings 2007).

Social cognitive theory refers to an individual's motivation to self-regulate their own behaviour. For instance, setting their own goals, considering the potential consequences of their actions, and planning a course of action that may result in positive outcomes (Bandura 1991). Social Cognitive Theory not only takes into account of personal characteristics, but also those within the immediate environment (i.e. peers, family and community) and the wider environment (i.e. societal norms, culture and socioeconomic conditions) of an individual (Hastings 2007). Schwarzer and Luszczynska (2005) argue that Social Cognitive Theory is dependent on the perceived ability of the individual to control their own demands.

Finally, Exchange Theory proposes that an individual's willingness to change is dependent on what they will gain from changing their behaviour. As such, social marketers must provide either tangible or intangible benefits to encourage positive behaviour changes (Hastings 2007). It has however been noted that one of the most problematic aspects of Exchange Theory, is that consumers may not necessarily see the benefits that they have gained (Hastings and Saren 2003), for example, not getting lung cancer from quitting smoking.

3.3.3 Principles of social marketing

There are six key principles or 'benchmarks' (McDermott et al. 2005), of social marketing that should be addressed. These include, behaviour change, audience research, segmentation, exchange, the marketing mix and competition, outlined by McDermott et al. (2005, p. 550).

First, behaviour change is central to social marketing given that social marketing interventions aim to encourage positive changes in behaviour and positive future outcomes (McDermott et al. 2005). The behavioural theories outlined previously provide social marketers with possible explanations for human behaviour that can be used when developing interventions.

Second, conducting audience research to identify the needs and wants of the target consumer is important and is also a fundamental aspect of the commercial marketing process (McDermott et al. 2005). It is important for social marketers to understand the consumer in terms of their current behaviour and the reasons for their behaviour. For example, understanding why people smoke, even though the health risks are well known (Hastings 2007).

Third, segmentation is a key aspect considered by commercial and social marketers. Segmentation aims to divide the population into sub-groups based on how they would respond to marketing and interventions (Walsh et al. 2010). By segmenting the population, groups of individuals that have similar needs and wants can be identified and targeted offers can be developed (Lotenberg et al. 2011). The process of segmentation takes into account several variables, these include: (1) personal characteristics and demography (Age, gender, educational attainment etc.), (2) past behaviour and desired behaviour, and (3) the benefits sought (understanding behaviour of different segments in present terms and they view potential benefits) (Hastings 2007; Lotenberg et al. 2011). Once the segmentation strategy has been chosen, social marketers must then decide which of the segments will be targeted, for example, a target group where there is potential to address specific problems (Hastings 2007).

Fourth, exchange in social marketing interventions refers to what the consumer will gain in return for changing their behaviour (McDermott et al. 2005). Exchange in social marketing interventions can include tangible benefits in the form of incentives for taking part in a programme or intangible benefits such as personal satisfaction from changing behaviour in a positive way (McDermott et al. 2005).

Fifth the marketing mix, which has been applied with a great deal of importance in commercial marketing, should also be considered in the context of social marketing. The marketing mix

consists of four main P's: Price, product, place and promotion (Peattie and Peattie 2011). In social marketing, the product relates to the offer being made for behaviour change (e.g. adoption of alternative behaviour), the price is concerned with the cost imposed on the target group (e.g. psychological, emotional, financial etc.), place focuses on where the change is promoted (e.g. media channels, interpersonal channels etc.), and finally, promotion, is concerned with how the behaviour is promoted to the target group (e.g. advertising, direct mail etc.) (Hastings 2007).

Finally, social marketing and the development of public health interventions should consider competition with regards to harmful behaviours that are in opposition to those being encouraged (McDermott et al. 2005). For example, the aim of social marketing interventions is to change behaviour whether this is to increase (e.g. engagement with physical activity) or decrease a current behaviour (e.g. smoking or drug use) among the key target group (Lefebvre 2013).

3.3.4 Social marketing strategies using tobacco packaging

Until recently, one of the most effective ways of using tobacco packaging as a social marketing tool is the inclusion of health warning messages, with over 100 countries now requiring pictorial and written health warnings covering the direct health effects (e.g. cancer, coronary heart disease etc.), addiction and social effects caused by smoking (e.g. cancer, appearance, passive smoking) (Hammond 2011; Canadian Cancer Society 2018). Furthermore, some countries also require cessation help to be included on tobacco packaging through providing a quit help line (Canadian Cancer Society 2018).

3.5.3 Health warning messages

Health warning messages on tobacco packaging have become a vital tool in communicating the risks of smoking. This is important from two perspectives. First, over half of the long-term users of tobacco will die from the habit (Chapman and Liberman 2005). Second, it is a

consumer right to be informed of the dangers that come with a consumer product such as tobacco (Borland et al. 2009). Warning messages on tobacco packaging facilitate wide reach and exposure of the message, particularly given that smokers are frequently exposed to the pack (Hammond 2011). Hammond (2011) also notes that the pack acts as a form of portable advertising, with the warnings also visible to non-smokers, given that packs are often taken out and displayed in public.

Article 11 of the FCTC requires all countries adhering to the treaty to include warnings on tobacco products, with these messages covering at least 50% of the pack (WHO 2005). In 2001, Canada became the first country to introduce pictorial warnings covering 50% of the pack (Hammond 2011), with over 100 countries now requiring pictorial warnings on tobacco products (Canadian Cancer Society 2018). Subsequently, evidence has emerged on the impact of health warnings on both adults and young people.

Hammond (2011) conducted a review exploring the effectiveness of warning messages on tobacco products. Hammond found that warnings are effective in encouraging cessation and preventing uptake, however, pictorial warnings, particularly those provoking fear, have a greater impact than text-only warnings. Hammond (2011) also found that in terms of message style, warnings pertaining to smoking affecting appearance are more effective with young people, with many young smokers feeling that pictorial warning messages, which typically portray the longer-term health effects of smoking, have little relevance to them (Brown and Moodie 2012). There is also value in exploring health messages which include the financial implications of smoking (Hammond 2011).

The lack of relevance of certain health messages to young people could be explained cognitive dissonance theory. Cognitive dissonance occurs when an individual holds inconsistent cognitions which cause emotional discomfort, often associated to inconsistencies occurring in their behaviour (Harmon-Jones et al. 2015). Gregory-Smith et al (2013) argue that choice in

the decision-making process may be driven by emotion, rather than attitude. For instance, a smoker may understand the risks of smoking but continues to smoke due to other benefits that they believe they gain from smoking, such as feeling relaxed (Glock and Kneer 2009). Hammond (2011) identified that personal or 'testimonial' style messages were less likely to be rejected, facilitating higher levels of credibility and engagement (Hammond 2011). Therefore, there is scope to consider this messaging style to reduce cognitive dissonance and increase the impact of health warning messages.

Only two studies have explored how young adult smokers respond towards novel tobacco warnings designed to communicate the immediate health and social consequences of smoking (Hoek et al. 2011). Hoek et al (2013) conducted in-depth interviews with young adult smokers. The study followed Temporal Construal Theory, which relates to decisions people make regarding events that may occur in the immediate or distant future (Liberman and Trope. 1998). They found that while participants acknowledged the health risks of their behaviour, they believed them to be in the distant future and of little concern (Hoek et al. 2013). The warnings eliciting the strongest reactions were those communicating loss of attractiveness, consistent with previous research (Hammond 2011). In addition, the warnings communicating the social unacceptability of smoking weakened the identity that participants sought from smoking (Hoek et al. 2013).

Healy and Hoek (2016) conducted an online survey with young smokers and former smokers, also exploring warnings pertaining to the social consequences of smoking including loss of attractiveness, the environmental impact, industry manipulation and the harm of smoking on others (e.g. children and adults). Female participants found the messages illustrating animal testing as effective, while male participants considered those communicating smoking as a 'relationship kill' or relationship 'deal breaker' and second-hand smoke as more effective.

3.4 Packaging used as a communication tool

Packaging is an effective communication tool, and important to organisational marketing strategies (see Chapter One and Two). While the original marketing mix includes product, price, place and promotion, otherwise known as the 4 p's of marketing, packaging is a vital addition to the marketing mix and should be considered the 5th 'p' (Ford et al. 2012; Hawkes 2010). Packaging communicates information about the product, acts as a promotional tool, contains the physical product, and may communicate the price (Hawkes 2010). While organisations have typically focused on the colour, texture or shape of packaging, the trend of multisensory packaging has recently emerged as a novel means of communicating product attributes, including packaging which uses auditory cues, often used in the food and drinks sector (Mitchell et al. 2019; Spence 2016).

Audio packaging has been used commercially for a range of products, including alcohol and various foodstuffs, where the packaging plays pre-recorded messages when opened (Elliott 1992; Best 2010; JCDecaux 2013; Mitchell et al. 2019). Global packaging experts Leo Luxe specialising in designing novel packaging for luxury products, developed a technology known as Hepatic Magic Technology, which allows audio or visual messages to be incorporated into product packaging, which is triggered when the packaging is touched (Packaging Digest 2015; Leo Luxe 2013).

With regards to the use of auditory cues to communicate health information, examples can be found from the pharmaceutical sector. Pharmaceutical packaging has used audio messages through two methods. First, audio messages are integrated into images on the packaging material with a varnish, where the message is activated with a specially designed pen reader. Second, near-field communication tags which hold an audio message that can be accessed through smartphones installed with the technology to retrieve the message have been

introduced. This technology can be used to communicate dosage instructions to visually impaired consumers (Pareek and Khunteta 2014).

3.5 Evidence of tobacco packaging measures to deter smoking

Hastings (2007) argues that placing restrictions on tobacco advertising and promotion only addresses one aspect of marketing and suggests that all methods that tobacco companies use to attract consumers must be considered and critically evaluated, including packaging, pricing and distribution. Given that certain pack structures are still permitted for standardised cigarette packs (e.g. bevelled and rounded-edges, slim packs and shoulder box opening method) (2.7.2), there is scope to consider other packaging measures, aside from standardised packaging, to deter smoking. This in line with Article 2 of the Framework Convention on Tobacco Control (FCTC), which recommends parties go beyond measures required within the treaty, and suggest that there are no barriers in preventing the implementation of stricter requirements to protect the population's health from smoking (WHO 2005). The remainder of this chapter will explore dissuasive cigarettes, cigarette packaging with audio warning messages, novel health warning messages and standardised packs with the brand variant name replaced by a number.

3.5.1 *Dissuasive cigarettes*

In light of standardised packaging, the cigarette stick has become an even more valuable communication tool, with a greater focus on product innovation (e.g. capsule cigarettes and novel filters) in the UK and Australia (Moodie et al 2018; Scollo et al 2015; Scollo et al 2018). Hoek et al (2016) note that no country has yet attempted to reduce the appeal of smoking using the primary packaging, the cigarette. Tobacco companies have previously used the cigarette to extend brand imagery beyond the pack, through the use of decorative designs, colours and unique lengths and diameters communicating intrinsic product cues, and appealing to young people (Ford et al. 2014). Ford et al (2014) found that when asked about

cigarette appearance, adolescents recalled various features of cigarettes, mentioning colour, filter style and length. It has been suggested that warning messages should be seen at the point of consumption, when lighting the cigarette (Moodie 2018a). As such, the cigarette stick could be used as a platform to communicate health messages to the point of consumption. Such a measure is already being considered by the Scottish and Canadian Governments as part of their long-term tobacco control strategies (The Scottish Government 2018a; Health Canada 2018).

Several studies have explored the concept of dissuasive cigarettes (where the cigarette is designed to reduce the appeal and communicate the harms of smoking), using unappealing colours and/or on-cigarette warnings or messages. There are two key emergent themes: 1) cigarettes featuring health warning messages, including 'smoking kills' and the average minute of life lost from smoking each cigarette, on the cigarette paper, and 2) unattractively coloured cigarettes. Recent research has focused on a range of different messages, including the short and long-term harms of smoking, the social and financial costs of smoking and cessation information (e.g. quit line number) (Drovandi et al. 2019a; Drovandi et al. 2019b; Drovandi et al. 2019c; Lund and Scheffels 2018), and even the use of both a warning message and pictorial image (Gallopel-Morvan, Droulers and Pantin-Sohier 2019). The key findings from studies exploring dissuasive cigarettes have been organised based on method of data collection and will now be discussed.

Experimental evidence of dissuasive cigarettes

There have been two experimental studies that have explored cigarettes carrying health warning messages, unattractively coloured cigarettes and other messages including cessation information.

Hassan and Shiu (2015) conducted two experimental studies. The first study was conducted in Scotland ($n=88$) and explored adult smoker's responses to, and ratings of attractiveness

for, three cigarettes: 1) a cigarette with the 'minutes of life lost' written on the cigarette paper, 2) a cigarette with the toxic constituents found in cigarettes written on the paper, and 3) a control cigarette (imitation cork filter and white paper casing). The second study was conducted in Greece ($n=120$), and only explored adult smoker's responses to the 'minutes of life lost' cigarette. In study one, participants showed greater quit intentions when shown both dissuasive cigarettes. Similar responses were found in study two.

Hoek et al (2016) conducted a best-worst choice experiment with adult smokers ($n=313$). They tested the on-cigarette warning, 'smoking kills', an on-cigarette message communicating the 'minutes of life lost' due to smoking, and two unattractively coloured cigarettes (dark green and yellow). All four dissuasive cigarettes were considered less appealing in comparison to a standard imitation cork filter cigarette and an all-white cigarette, in particular the 'minutes of life lost' cigarette.

Cross-sectional evidence of dissuasive cigarettes

There have been four cross-sectional studies exploring a range of different dissuasive cigarette designs. Moodie et al (2017) explored the on-cigarette warning 'smoking kills' with adolescents aged 11-16 years ($n=1205$). They found that 71% of participants thought that the on-cigarette warnings would put people off starting to smoke, 53% thought that they would encourage people to quit (highest among never-smokers and past smokers), and 85% supported warnings being included on all cigarettes.

Moodie et al (2018a) conducted an online survey exploring perceptions of dissuasive cigarettes with smokers aged 16-34 ($n=1766$). The main outcome measures used were appeal, harm and trial intentions for three cigarette designs: (1) 'standard' cigarette (e.g. white cigarette paper with imitation cork filter), (2) dark green cigarette and (3) cigarette featuring the warning 'smoking kills' in red ink on the cigarette paper. Of the three cigarette tested the standard cigarette was consistently considered more attractive, stylish and that it would be

nicer to be seen with than both the green cigarette and 'smoking kills' cigarette. Regarding trial intentions, the inclusion of dissuasive features (e.g. green colour and warning) reduced trial intentions and also increased harm perceptions.

Lund and Scheffels (2018) explored Norwegian adolescents' responses to, and appeal perceptions of, on-cigarette warnings (e.g. minutes of life lost and smoking kills), unattractively coloured cigarettes (e.g. dark green and yellow), and a cigarette with white paper and an imitation cork filter and a white filter cigarette ($n=281$), controlling for smoking status and smoking susceptibility. With regards to appeal ratings, the imitation cork filter and white filter cigarette were rated significantly more appealing than any of the other cigarettes. Participants that identified as current smokers were more likely to find all cigarettes more appealing, than non-smokers including those that were both susceptible and non-susceptible.

Gallopel-Morvan, Moodie, Guignard et al (2019) explored how smokers and non-smokers aged 15-30 years responded to a regular, slim, pink and plain cigarettes (grey colour) using a cross-sectional survey design ($n=998$). Participants were randomly allocated to view one of three images: (1) a regular cigarette with brand name 'Marlboro' written below the filter on the cigarette paper and a plain grey cigarette, (2) a slim cigarette with the brand name 'Vogue' displayed on the filter tip and a gray cigarette, and (3) a pink cigarette with symbol of the brand (elephant) on the filter tip and a gray cigarette. The main outcome measures include perceived appeal, harm and behavioral impact. The three branded cigarettes were rated as more appealing, less harmful and that they would be less likely to deter uptake among young people and encourage cessation than the plain grey cigarettes.

Moodie et al (2019b) explored how young adult smokers and non-smokers ($n=997$) perceived a cigarette with the warning 'smoking kills' on the cigarette paper, a dark green cigarette, and a standard imitation cork filter cigarette. The main outcome measures included cigarette perceptions (e.g. perceived stylishness, attractiveness, appeal, feelings about being seen with

each cigarette, harm, taste and tar content) and trial intention (e.g. the likelihood of a participant trying each cigarette). All cigarette perception measures were combined to form a favorability rating for each cigarette. Both dissuasive cigarettes were rated less favorably than the standard cigarette. The dissuasive cigarettes were also considered harmful and unappealing, with over half of the sample thinking that dissuasive cigarettes would put people off starting to smoke, in particular the green cigarette. The dissuasive cigarettes reduced trial intentions, with participants less likely to want to trial them than the standard cigarette.

Qualitative evidence of dissuasive cigarettes

There have been six qualitative studies, including interviews with marketing experts and focus groups with adult smokers and non-smokers and adolescents. Hoek and Robertson (2015) conducted focus groups ($n=2$) and in-depth interviews with young adult female smokers ($n=13$). A total of 20 cigarette designs were explored with 10 of these including 'regular' cigarettes with white paper and imitation cork filter, slim cigarettes and cigarettes with embellished filters. The second set of 10 cigarettes featured a range of different colours, these were: gold, orange, tangerine, silver-white, light red, red-brown, bright red, light green, dark green and lilac. Of the cigarettes included, the slim and white cigarettes were preferred with connotations such as 'cleanliness' and 'safety' mentioned. The darker coloured cigarettes elicited the most negative response, in particular the brown and green cigarettes, with these causing smoking to be viewed as 'dirty' and disgusting'.

Moodie, Purves, McKell et al (2015) conducted focus groups with young female smokers ($n=49$) exploring the warning 'smoking kills' in various positions on the cigarette, including on the filter, horizontally on the cigarette, vertically on one side of the cigarette and vertically on both sides of the cigarette. Participants considered the on-cigarette warning to be embarrassing and a constant reminder of the harms of smoking. The vertical warning on both sides of the cigarette was considered the most impactful, given its visibility irrespective of how the cigarette is held.

Moodie (2016a) explored a range of novel measures including the on-cigarette warning 'smoking kills' with marketing experts ($n=12$). The marketing experts thought that the on-cigarette warning would extend the health warning messages beyond the pack, communicate the harms of smoking to others, deter young people from smoking and encourage smokers to think about their smoking behaviour. The marketing experts also suggested that displaying warnings on cigarettes, using vegetable based ink, would be inexpensive and non-toxic.

Drovandi et al (2019a) conducted two focus groups ($n=16$) and one-to-one telephone interviews ($n=11$) with University students in Australia. The current on-pack written and pictorial warnings, and cigarettes carrying a range of messages and warnings were explored. The on-cigarette warnings and message themes were: (1) the short term health effects of smoking, (2) the long term health effects of smoking, (3) the social and financial costs of smoking, and 4) quit messages. Both smokers and non-smokers thought that the effectiveness of the on-pack warnings had declined. The on-cigarette warnings were considered an effective health communication medium, in part due to their novelty. The themes highlighting the financial costs of smoking and supportive quit messages were considered the most effective.

In recent evidence from France, Gallopel-Morvan et al (2019a) conducted in-depth individual interviews ($n=31$) with 15-25 year-olds exploring a range of cigarettes, including those designed to be dissuasive and cigarettes available on the market, including slim cigarettes. The dissuasive cigarettes included a variety of colours (e.g. different shades of green and brown), warning messages in upper and lower case font on both white or green slim and regular cigarettes (e.g. smoking kills), with some of these also including an image of a skull and crossbones. The cigarettes featuring dissuasive cues (e.g. colours and warning) increased negative health perceptions, decreased positive smoker imagery and enjoyment from smoking and increased quit intentions. The dissuasive cigarette which received the most negative responses was a dark coloured cigarette carrying the warning 'smoking kills' (in French) paired with a skull and crossbones image.

Moodie et al (2020b) add to existing qualitative evidence by employing 20 focus groups ($n=120$) to explore a cigarette featuring the warning 'smoking kills' in red ink with smokers aged 16 and over from different socioeconomic groups in Scotland. Participants thought that the warning would be visible to other people at every stage of consumption, including when the cigarette was taken out of the pack, lit and placed in an ashtray, and as a result, they would be viewed negatively, would be embarrassed and would be less likely to use the cigarette in front of others. Younger participants were the most likely to believe that the dissuasive cigarette would have an impact on their smoking behavior.

Mixed Methods evidence of dissuasive cigarettes

There have been three studies that have used a mixed-methods approach to explore perceptions of dissuasive cigarettes. Drovandi et al (2018) explored how adolescents reacted to current cigarette packaging health warnings and on-cigarette health messages in Australia, using a cross-sectional survey which included open-text questions. The messages used included those communicating the direct, long term and social harms of smoking and current warnings on cigarette packaging. The current warnings on cigarette packaging in Australia were thought to have more of a preventative effect on non-smokers than smokers, but were considered unrelatable to their age group (teenagers). The on-cigarette message that had the most effect was the mortality message, compared to supportive, financial and social messages. Over three-quarters of participants supported the use of on-cigarette warnings.

Drovandi et al (2019b) explored Australian university student's perceptions of dissuasive cigarettes using an online survey with open text boxes. Four on-cigarette message themes were explored: (1) immediate health effects (e.g. minutes of life lost), (2) long-term health effects (e.g. cancer and addiction), (3) social and financial costs, and (4) positive and supportive quit messages. The cigarette communicating the 'minutes of life lost' (e.g. short-term effect), received the lowest appeal ratings, and increased quit intentions immediately

after exposure. On-cigarette warnings depicting the harm caused to others and those providing support, were also considered effective. In general, on cigarette warnings were perceived effective, as they are essentially 'in the smokers face'.

Drovandi et al (2019c) conducted a mixed methods study using both an online survey ($n=70$), and face-to-face interviews ($n=17$) with community pharmacists in Australia, to explore their experiences of working with smokers, and their perceptions of the potential effectiveness of dissuasive cigarettes. Similar to previous research by Drovandi et al (2019), in this study on-cigarette warnings communicating mortality statistics, health conditions, social and financial implications of smoking and supportive messages were explored and perceptions of the current warnings used on cigarette packaging in Australia were also explored. Community pharmacists, who have regular contact with smokers seeking to quit considered the on-cigarette messages relating to mortality, specifically one communicating the 'minutes of life lost' from smoking each cigarette and those communicating the financial cost of smoking, to have more of an effect than the current on-pack warnings.

The findings suggest that dissuasive cigarettes have the potential to reduce the appeal of smoking, discourage uptake and encourage cessation. The warning 'smoking kills' has been found to be an effective message, on cigarette packs and sticks, and is concise, credible and can be logistically be prominently displayed on the cigarette (Drovandi et al. 2018; Moodie et al. 2015a; Moodie et al. 2018a). While there is a growing evidence base on the possible impact of dissuasive cigarettes, including unappealing colours (e.g. green), and the potential impact of the on-cigarette warning 'smoking kills', there remains a lack of research with adolescents and a lack of research using multiple styles of dissuasive cigarette designs.

3.5.2 Cigarette packaging with audio warning messages

Audio packaging is packaging that plays a pre-recorded verbal message. The use of audio packaging as a health promotion tool is not a new concept, as it has been used within

pharmaceutical packaging and food packaging to communicate product related information (3.4).

There are only three published studies that have explored audio cigarette packaging as a potential novel measure to dissuade smoking. Moodie et al (2015a) explored packs playing audio messages with young female smokers aged 16-24 ($n=49$). Two messages were included: (1) a cessation message, including a quit line number, and (2) a fertility warning. In general, the audio messages were deemed annoying, with many participants suggesting that they would try and avoid the message either by removing the audio device or by decanting the cigarettes into alternative storage. However, the audio messages elicited an avoidant response, with participants finding them embarrassing and suggesting that they would avoid opening them in public. While the packs initially received a negative response, they were deemed more personal, possibly because the message was being heard rather than read. They also thought that the audio packs could potentially increase motivation to quit and encourage others not to smoke.

Audio packs were also explored with the marketing experts (Moodie 2016a). The marketing experts suggested that the audio warnings may annoy newer or regular smokers enough to consider quitting, or reduce their enjoyment of smoking. The marketing experts, similar to the previous study, suggested that the audio warning may cause such irritation that the packs would be discarded, the audio device disabled or alternative storage used. However, the inclusion of an audio warning was deemed a cost-effective measure to deter smoking, with one expert noting that audio cosmetics packaging is presently under development, and as such, would be achievable in the near future. They also suggested that the most effective messaging styles may be those directly related to the health risks in a 'chilling' tone or those that play on the insecurities of being a smoker, such as the smell.

The most recent study explored the responses of male and female smokers aged 16 and over to different audio health messages (Mitchell et al. 2019). Participants were exposed to messages that were deemed directly relevant to them: (1) a cessation message with a quitline number, (2) a mortality message, (3) a fertility message (shown to young female participants), and (4) a message about ageing skin. The audio warnings, consistent with previous research with female smokers, were considered embarrassing and it was thought that they would become annoying. There was evidence that participants may attempt to avoid the message by removing the sound device, using alternative storage for cigarettes (e.g. tin or old packs), or switching to rolling tobacco. However, some, mostly younger participants, considered the messages salient, as they were being heard rather than just reading the warning messages on the pack and that they would become memorised. With regards to the behavioural impact, older participants were the least likely to believe that the audio warnings would impact their smoking behaviour. Younger participants suggested that they would be affected due to embarrassment and feeling self-conscious. It was suggested that the audio warnings would likely have the greatest effect on newer and non-smokers.

3.5.4 Numbered cigarette packs

Recently, the Turkish government proposed plans to remove brand and variant names from tobacco packaging and replace them with numbers. Retailers selling tobacco would be provided with a price list with all tobacco products available in alphabetical order and the number which will appear on the packaging for each brand. Turkey is the only country to have proposed this measure, with there being a single study exploring numbered packs. Mucan and Moodie (2018) explored how young adult smokers in Turkey responded to tobacco packaging with numbers in place of the brand variant name. In general, participants felt that brand names were an important and attractive feature of tobacco packaging, indicative of product quality and a facilitator of differentiation among many options. While it was suggested numbered packs may result in longer queues in retailers, causing smokers to become annoyed, some participants suggested that replacing brand name with numbers would be a deterrent.

Participants felt that smokers that seek a certain image from their brand, newer smokers and young people may be put off by the numbered packs.

Previous research has exposed the importance of brand variant name to tobacco companies and the ability of brand variant name to continue appealing to consumers and offering differentiation, even in a standardised packaging environment (Morton and Greenland 2018). As discussed in Chapter Two, tobacco companies in Australia and the UK used more evocative brand variant names post standardised packaging, with this trend likely to occur in countries planning to implement standardised packaging or that are in the process of doing so. Therefore, to strengthen standardised packaging, there may be value in considering removing brand variant name from tobacco products.

3.6 Summary and research context

The literature reviewed in Chapter Two and Chapter Three sets the context and rationale for the research. In Chapter Two, it is noted that the UK's standardised packaging legislation places less stringent requirements on tobacco packaging compared to Australia, even though implemented several years later. As a result, tobacco companies have continued to use elements of packaging to communicate to consumer's post-implementation. They continue to use bevelled or rounded-edged packs, novel opening methods (e.g. shoulder box) and slim pack structures, all of which have been found to hold appeal among young people (Kotnowski and Hammond 2013; Ford et al. 2013b; Moodie et al. 2011). In addition, tobacco companies such as Philip Morris have focused on the inner frame of the pack with the introduction of innovative resealing technology (Moodie et al. 2018b). Brand variant name has also become increasingly important post-standardised packaging, and allows brands to continue having some means of appeal on the pack.

No study has explored reactions to, and perceptions of, different types of standardised packaging in a market where this policy has been introduced. Therefore, it is important to explore how these packs may impact adolescents' attitudes and beliefs about smoking, and whether these elements disrupt the aims of standardised packaging legislation, given that they are one of the key target groups of the legislation.

In the current chapter, the growing body of literature exploring packaging measures designed to deter smoking, beyond standardised packaging, was reviewed. Focus was given to evidence on dissuasive cigarettes, audio warning messages, novel health warning messages, and the use of a number instead of brand variant name. It is clear that the primary packaging, the cigarette itself (with the pack being the secondary packaging) (Ampuero and Vila 2006), could be used as a health communication tool. While there is now a growing body of evidence in favour of dissuasive cigarettes, there is a lack of both qualitative and quantitative research with adolescents, even though they are a key population for dissuasive cigarettes. The concept of audio packaging has recently been used in pharmaceutical and food packaging, but only three studies have explored cigarette packaging with audio warning messages, two with smokers and one with marketing experts (Moodie et al. 2015a; Moodie 2016a; Mitchell et al. 2019). Finally, given that brand variant name can still be used as a communication tool and create appeal, the Turkish government proposed replacing brand variant names with numbers. Only one study with young adult smokers in Turkey has explored numbered packs (Mucan and Moodie 2018). Given the potential importance of brand variant name to adolescents, there is value in investigating numbered packs further. The following chapter outlines the methods used in this thesis.

Chapter Four: Study Framework and Design

4.1 Introduction

Chapter Two highlighted the scientific and policy importance of examining how adolescents react to standardised cigarette packaging, given that prevention of youth uptake is a key target outcome for the policy, and exploring whether the variations in pack structure still permitted in the UK (as well as France, Ireland and Norway) impact these reactions. Furthermore, Chapter Three highlighted a need for researchers to continue examining new opportunities to use cigarette packaging to dissuade uptake among adolescents and encourage cessation in smokers, for example through dissuasive cigarettes, audio warning messages emitted by cigarette packs, and the use of a number in lieu of brand variant name, for which there remain few studies with adolescents.

This chapter sets out the research framework and an overview of the study design used to respond to these gaps in the evidence. It begins by outlining the framework which underpins the research, critical social marketing (section 4.2). The chapter then presents the research questions and hypotheses (4.3) and summarises why a mixed-method research design was employed (4.4). Given that the majority of the findings have been published in this thesis, the rationale for the methods used in Study One, Study Two and Study Three and the main methodological detail will be discussed in the individual findings chapters (Chapter Five, Six, Seven and Eight).

4.2 Research framework: Critical social marketing

Tobacco control and smoking cessation research has employed a diverse and wide range of theories or frameworks to guide investigation. For example, Symbolic Consumption Theory – which refers to the use of brands to create own self-identities (Witt 2010; Piacentini and Maile 2003) – has been used to explore young adult's reactions to standardised packaging (Hoek et

al. 2012). Temporal Construal Theory – which focuses on what outcomes an individual perceives may occur in the near future (Liberman and Trope 1998) – has been used to explore adolescent's responses to novel tobacco health warnings (Hoek et al. 2013). This heterogeneity highlights there is no single theoretical approach that tobacco control and smoking cessation research should rely on.

While individual theories can be informative and provide a defined idea for understanding aspects of human behaviour, reliance upon a single theoretical position can also overly simplify behaviour (Hastings 2007). An alternative to basing investigation on individual theories is to subscribe to a research 'framework' that encourages the use of a variety of methodological disciplines and theoretical perspectives under a single common goal. In the context of tobacco control, and in particular, research examining the role of packaging in smoking and cessation, critical social marketing provides one such research framework. Critical social marketing owes its origins to the related field of social marketing. However, while social marketing is concerned with using commercial marketing concepts to promote social good, as discussed in Chapter Three (section 3.3), critical social marketing instead aims to examine how commercial marketing influences behavior and to identify upstream and downstream opportunities to mitigate harm (Hastings and Soren 2003; Hastings 2010). Specifically, Gordon (2011) defines a critical social marketing approach as:

“Critical research from a marketing perspective on the impact commercial marketing has upon society, to build the evidence base, inform upstream efforts such as advocacy, policy and regulation, and inform the development of downstream social marketing intervention” (Gordon 2011, p. 90)

The critical social marketing framework was chosen for two reasons. First, it has been widely applied in tobacco control research (Gordon 2011), including how young people view tobacco marketing and its impact on smoking initiation (MacFadyen et al. 2001), the effects of tobacco

control policy over time (e.g. ban on advertising promotion and sponsorship and point of sale ban) (Harris et al. 2006; Ford et al. 2020), and how young people view tobacco packaging (Ford et al. 2013a; Ford et al. 2013b). The framework has similarly been applied to the study of other fast moving consumer goods, for example alcohol marketing (Critchlow 2017; Gordon et al. 2010). Second, subscribing to a critical social marketing framework means that the study design is not restricted to one single academic discipline – i.e. it can draw on insight from communication theories, marketing theories, public policy etc – and there are established and robust methodological blueprints available to inform investigation (Gordon 2011). A key example of the use of multiple methods in tobacco control research comes from the Youth Tobacco Policy Survey (YTPS), where both focus groups and an in-home repeat cross-sectional survey with young people are used (Harris 2011).

Gordon's framework follows four stages. This chapter focuses on stage one, which is concerned with conducting research from a marketer's perspective. In other words, step one aims to explore how marketing activities engage and influence consumers, to both understand the negative impacts of commercial marketing on health behaviours and opportunities to mitigate harm (Gordon 2011). To do this, consumer research was conducted to establish awareness of, and reactions to, standardised cigarette packaging. This research also explored what impact (if any) the continued use of standardised packaging (e.g. structural differences and attractive brand variant names) has on the smoking attitudes and behaviour of adolescents. The research also aimed to establish what further attempts could be made to dissuade smoking further, through the use of dissuasive cigarette, audio warning messages or using a number in lieu of brand variant name. The research does so using two established techniques of marketing research: focus groups and consumer surveys.

4.3 Research aim, questions and hypotheses

The aim of this thesis is to explore how adolescents react to both standardised cigarette packaging and further pack-related measures intended to dissuade smoking uptake and promote cessation. This aim was divided into six research questions (RQ):

RQ1: To what extent (if at all) are adolescents aware of standardised packaging post full-implementation and what are their reactions to the standardised cigarette packs? (*Chapters Five and Six*)

RQ2: To what extent (if at all) do reactions vary for standardised cigarette packaging with different structural features (e.g. slim packs, bevelled edges)? (*Chapters Five and Six*)

RQ3: How do adolescents react to dissuasive cigarette designs and how do dissuasive features impact their trial intentions? (*Chapters Five and Seven*)

RQ4: How do adolescents react to, and perceive, cigarette packs that emit an audio health warning? (*Chapter Five*)

RQ5: What are adolescents' responses to brand variant name on standardised cigarette packs? (*Chapters Five and Eight*)

RQ6: How do adolescents react to cigarette packs with a number in lieu of brand variant name? (*Chapter Eight*)

From the research questions, ten hypotheses (H) were developed:

H1: Never-smoking adolescents will have negative reactions towards the standardised cigarette packs introduced in the UK. (*Chapters Six*).

H2: Never-smoking adolescents will rate standardised packs that vary in structure (e.g. bevelled edges) less negatively than a straight-edge pack with a flip-top lid ('regular' pack). (*Chapters Six*).

H3: Attitudes towards standardised packaging will differ by demography and susceptibility among never-smoking adolescents (*Chapter Six*).

H4: Reactions to the standardised cigarette pack with a 'regular' design will have no association with susceptibility to smoke among never-smokers. (*Chapter Six*).

H5: Reactions to the standardised cigarette packs with different structural designs (e.g. bevelled edges and slim packs) will have some association with susceptibility to smoke among never-smokers (*Chapter Six*).

H6: Adolescents will react more negatively towards the dissuasive cigarette designs than a 'standard' cigarette (*Chapters Seven*).

H7: The extent of negative reaction to dissuasive cigarettes will vary dependent on design features and the severity of the message/design (*Chapters Seven*).

H8: Reactions to the dissuasive cigarette designs will vary by demography, smoking status, and susceptibility among never-smokers (*Chapters Seven*).

H9: Compared to the 'standard' cigarette, adolescents will be less likely to report trial intentions for the three dissuasive cigarette designs (*Chapter Seven*).

H10: Trial intentions for cigarettes with dissuasive designs will vary by demography, smoking status, and susceptibility among never smokers (*Chapter Seven*).

4.4 Mixed method design

This thesis employed a mixed methods research design. Mixed methods are defined as the collection of both qualitative and quantitative data in a thorough manner. The principal benefit of mixed methods is that the approach allows the investigator to use the strengths of one part of the study design to address or counteract the limitations of another (and vice versa) (Bryman 2012; Watkins and Gioia 2015). Specifically, by using both qualitative and quantitative methods the research will benefit from the in-depth and holistic insights and meaning created by participants, gained from qualitative research (Bryman 2012; Ruane 2016; Saldaña 2011), and the more generalisable and empirical understanding of a research topic that can be gained from larger quantitative research (Watkins and Gioia 2015).

Mixed method designs are common in public health research and studies that use a critical social marketing approach. A key example, and one that holds much resonance to the current thesis, is the Youth Tobacco Policy Survey (YTPS), a long-running repeat cross-sectional study conducted within the Institute for Social Marketing and Health (ISMH). The YTPS was designed to explore how adolescents aged 11-16 respond to tobacco control measures implemented in the UK over time (Harris 2011; Moodie et al. 2010). The YTPS uses focus groups and one-on-one interviews with adolescents to develop the contents of the survey, which is then administered in home by market researchers (Harris 2011; Moodie et al. 2009). The YTPS is an established and tested research design which has been instrumental in evaluating and informing policy in the UK, from the tobacco display ban to standardised tobacco packaging (Ford et al 2013a; Ford et al. 2013b; Ford 2014; Ford et al. 2020; MacFayden et al. 2001).

Mixed methods research can be conducted using three main approaches: (1) a concurrent approach where both methods (qualitative and quantitative) are used at the same time with the aim of comparing and synthesising both sets of findings; (2) a sequential-qualitative

approach where the qualitative methods are used first to inform the quantitative methods; and (3) a sequential-quantitative approach where quantitative methods are initially used to inform the qualitative methods (Creswell et al. 2003). In this thesis, a concurrent mixed methods approach was employed, incorporating two qualitative studies (studies one and three) and one quantitative study (study two). The principal reason for employing a concurrent approach was to maximise efficiency during the time-limited nature of the PhD (Watkins and Gioia, 2015). Although with a longer period it would be preferable to use the findings of the qualitative research to inform the development of the quantitative study, this was out with the capacity of the PhD. Instead, the findings from both approaches are synthesised in the discussion (Chapter Nine), thus providing an opportunity to triangulate the findings.

This thesis embodies three studies. Study One used focus groups with adolescents aged 16 and 17 years to explore how they perceive standardised cigarette packaging, and their views on varying pack structures, brand variant name, and other potentially dissuasive packaging measures (e.g. dissuasive cigarettes and audio warning messages). Study Two used a cross-sectional school-based survey to explore reactions to both standardised packs (including structural variations) and a variety of dissuasive cigarette designs among adolescents aged 12-17 years. In Study Three, a small section exploring adolescents' reactions to numbered cigarette packs was included as part of a wider focus group study with 11-16 year-olds (Cancer Research UK funded focus groups). At the time of conducting all three studies, standardised packaging was already mandatory (as of 20th May 2017). Studies One and Two were only conducted in Scotland, but Study Three had the opportunity to collect data from adolescents across England, Scotland, and Wales (hereafter 'Britain').

4.5 Summary

In this chapter, the framework and overall study design used for the PhD were described. The overall study design used a mixed methods approach with the aim of synthesising the findings in the final discussion chapter, Chapter Nine. Study One focused on exploring adolescent's awareness and perceptions of standardised cigarette packaging and further dissuasive packaging measures, including dissuasive cigarettes and cigarette packs containing audio warning messages.

The second study, the cross-sectional survey, aimed to quantify adolescent reactions to standardised cigarette packaging and dissuasive cigarettes, therefore extending the findings from Study One. The findings from Study Two are presented in two parts. Chapter Six focuses on the findings on reactions to, and perceptions of, standardised cigarette packs, including variations in pack structure and any association with smoking susceptibility. Second, Chapter Seven presents the findings on adolescent's perceptions of four cigarette designs, three of which intend to dissuade smoking and their trial intentions for these.

The third study involved focus groups across Britain. The findings on how adolescents respond to replacing brand variant name with a number are provided in Chapter Eight. Data from each of the studies were analysed by the PhD candidate between December 2018 and March 2019. Critical analysis and discussion of the findings, and future directions, are included in Chapter Nine, the final discussion chapter.

Chapter Five: Adolescents' responses to standardised cigarette packaging, dissuasive cigarettes and audio warning messages

The findings in this chapter are based on the following publications:

Mitchell, D., Moodie, C., Critchlow, N. and Bauld, L. (2019) Adolescents' perceptions of standardised cigarette packaging design and brand variant name post-implementation: a focus group study in Scotland. *BMC Public Health*, 19 (1), pp. 1227. doi: 10.1186/s12889-019-7552-0

Mitchell, D., Moodie, C., Critchlow, C. and Bauld, L. (2020) Adolescents' reactions to, and perceptions of, dissuasive cigarettes: A focus group study in Scotland. *Drugs: Education Prevention and Policy*, pp.1-8. doi: 10.1080/09687637.2020.1732300

5.1 Introduction

This chapter presents the findings from the focus groups exploring adolescents' responses to standardised packaging, dissuasive cigarettes and audio warning messages. The chapter starts with a summary of the current understanding of standardised packaging and dissuasive features (section 5.2), and the aims of this study (5.3), before summarising the relevant methods (5.4) The ethical considerations (5.5), transcription of the focus groups (5.6), and the analysis used (5.7). The results are presented in three parts. The first focuses on adolescents' reactions to standardised packaging, including those with different structural designs (5.8). The second examines adolescents' reactions to dissuasive cigarettes (5.9), and third reactions to audio warning messages (5.10). The findings from the focus groups are drawn together in the discussion (5.11), and the study limitations detailed (5.12) and conclusions provided (5.13).

5.2 Background and rationale

5.2.1 Standardised tobacco packaging

A full overview of standardised packaging, and early evaluation evidence of the effects on consumers, is presented in Chapter Two. The literature review identified three main themes

which inform the need for this study. First, while there is ample evidence on the impact of standardised packaging from Australia, there remains a lack of research exploring adolescents' responses to the measure. Second, unlike in Australia, tobacco companies in the UK are still permitted to use packs with bevelled-edges, shoulder boxes and slim packs (Moodie et al. 2018). As existing research has found that both fully-branded and standardised packs which differ by edge type, opening style or pack size, such as bevelled-edges, novel opening styles and slimmer formats, increase appeal (Borland et al. 2013; Ford et al. 2013a; Kotnowski and Hammond 2011; Mucan and Moodie 2018; Moodie et al. 2011), it is important to examine to what extent, if at all, this remains the case in a market where standardised packaging is mandatory. Third, once sold in standardised packaging, the brand variant name remains one of the only opportunities that tobacco companies have to create appeal or invoke positive reactions among consumers, with research in Australia and the UK showing increased use of colour or evocative descriptors (e.g. Sky Blue, Legendary Black) on standardised packs (Moodie et al. 2018; Scollo et al. 2015; Scollo et al. 2018). It is therefore vital to understand how adolescents interpret brand variant names, and to what extent it provides a continuing avenue to create appeal post-implementation. There has only been one other qualitative study to explore adolescent's reactions to standardised packaging post-implementation in the UK (MacGregor et al. 2020). MacGregor et al (2020) found that awareness was fairly high among adolescents, with adolescent's finding standardised packs unappealing and the health warnings salient.

5.2.2 Dissuasive cigarettes

An overview of the evidence of the potential influence of dissuasive cigarettes on consumers smoking related attitudes and behaviour is presented in Chapter Three. There are several reasons as to why dissuasive cigarettes were an important measure to explore in this study. First, following the implementation of standardised packaging, the role of the cigarette as a marketing tool has increased (Moodie et al. 2019a; Moodie, MacKintosh, Thrasher et al. 2019), evidenced by the global growth and popularity of capsule cigarettes (Moodie, Thrasher, Cho

et al. 2019). Furthermore, tobacco companies continue to use the cigarette stick to create appeal post-standardised packaging, including the introduction of new capsule brand variants and filter innovation, such as star shaped filters (Figure 2.6, section 2.5.2). Second, while a ban on flavours in cigarettes, including flavour-changing capsules, took effect in May 2020, there have been no other attempts to control the design of cigarettes in the UK (UK Government 2016).

There is a growing body of evidence, however, which suggests that 'dissuasive cigarettes' provide a further opportunity to promote cessation and reduce uptake, and can transfer some of the health messaging from the secondary packaging (e.g. pictorial and written health warnings on the outer packaging) on to the actual object of consumption. Suggested dissuasive designs include unattractively coloured cigarettes (e.g. green and yellow) and on-cigarette warnings (e.g. average minutes of life lost from smoking each cigarette, smoking kills, short and long-term harms, and financial and social costs) (Drovandi et al. 2019a, Drovandi et al. 2019b, Drovandi et al. 2019c; Hassan and Shiu 2015; Hoek et al. 2016; Moodie et al. 2015a; Moodie et al. 2018; Moodie, O'Donnell, Fleming et al. 2020). Third, when starting to smoke, adolescents are not necessarily exposed to the cigarette pack as they are more likely to obtain cigarettes on a single basis from friends or family (Donaghy et al. 2013), and so, avoiding the on pack health warnings entirely.

5.2.3 Audio health warning messages

An overview of the evidence on audio warning messages is detailed in Chapter Three. While packaging strategies have traditionally focused on using different colours, textures, shapes and logos as a means of attracting attention and retaining consumer interest, focus has gone beyond these sensory packaging features to include the use of audio cues (Mitchell et al. 2019; Spence 2016). As highlighted in Chapter Three, audio cues have been used in the commercial sector, including for alcohol and food brands, with the pharmaceutical sector also

adopting the use of audio messages to communicate product information (Best 2010; Elliott 1992; JCDecaux 2013; Mitchell et al. 2019; Pareek and Khunteta 2014).

Given that audio cues and messages in product packaging have been used in both a commercial and health context (e.g. pharmaceutical packaging), there is scope for audio warning messages to be used as a novel means of communicating tobacco related harms via the packaging. There have only been three studies to explore reactions to cigarette packs containing an audio warning message, with adult smokers and marketing experts. Among smokers, audio warning messages were considered annoying, embarrassing and may reduce the likelihood of the pack being opened in public. However, participants also suggested they would attempt to avoid the packs by decanting the cigarettes or removing the device (Mitchell et al. 2019; Moodie et al. 2016). Similarly, marketing experts suggest that the audio warning messages may annoy some smokers and encourage them to consider quitting, but some may still find means of avoiding the message by discarding the pack or disabling the audio device. The use of audio warning messages was deemed cost effective by the marketing experts and a potentially effective means of communicating smoking related harms (Moodie 2016a).

5.3 The current study

The primary aim of this chapter is to address the qualitative gap in evidence on adolescents' reactions to standardised tobacco packaging in a market where the policy is fully implemented, and to explore other ways the packaging can be used to attempt to deter smoking uptake among young people, specifically dissuasive cigarettes and audio warning messages. The findings add to existing evidence on adolescent's real-world reactions to standardised packaging (MacGregor et al. 2020) by exploring responses to standardised packs with different structural pack designs (e.g. beveled-edges, slim pack format and shoulder box), and the effect, if any, of brand variant name on standardised packaging. The findings presented

on dissuasive cigarettes and audio warning messages also add to the limited evidence base on reactions among this age group. The findings in this chapter address RQs 1-5.

5.4 Methods

In this section greater detail and justification for the study design, sample and analysis techniques are discussed, extending the detail on the research framework and overall mixed methods design in Chapter Four.

5.4.1 Justification for study design

Study One employed a focus group design to explore adolescent ever and never-smokers aged 16 and 17 years' perceptions of, and reactions to: (1) standardised cigarette packaging, including those with varied structural features (e.g. slim packs or bevelled edges); (2) the use of audio warnings in cigarette packaging and; (3) dissuasive cigarettes that carry either a written health warning messages or that are unappealing in colour. While there have been at least four qualitative studies exploring views on standardised packaging with adolescents before implementation (2.4.1), there remains limited qualitative insight from countries where the legislation is fully-implemented, with only one other study out with this thesis having done so (MacGregor et al. 2020). Similarly, there is also little qualitative research examining adolescent's reactions to dissuasive cigarettes and audio warning messages yet, again, they are a key target market for these preventative activities. Ritchie et al (2013) suggests that focus groups are therefore beneficial for examining under-researched areas as they provide an important platform to learn and understand the 'real' life language used by different population groups. In the context of this thesis, Study One responds to Research Questions 1-5 (see 4.3).

A focus group design was employed for several reasons. Principally, they are an established part of tobacco control literature and have been used previously to examine adolescents'

responses towards tobacco marketing activities (e.g. packaging; see Chapter Two) as well as activities which prevent uptake and encourage cessation (see Chapter Three). Second, given the visual and tactile nature of packaging, focus groups offer an opportunity for participants to handle and interact with real-world materials, a method used to great effect in tobacco packaging research (Ford et al. 2013a; McCool et al. 2012; Scheffels and Sæbø 2013) and which has limited feasibility for larger quantitative designs. The ability to engage with actual stimuli is important given that standardised packaging was a recent policy measure in the UK at the time of investigation, meaning participants may have had only limited (if any) contact with the revised designs. By allowing participants to handle a range of cigarette packs, it was possible to explore whether different pack features (e.g. different opening method) and tactile differences (e.g. bevelled-edges) appeal to adolescents. This same logic also applies to dissuasive cigarettes and audio packs, which it is highly unlikely they will have encountered before, as they are not currently available. A further strength to using focus groups, versus alternative qualitative methods, such as one-to-one or paired interviews, is that participants are also able to interact with peers during the research. This may be beneficial for both disclosure purposes, as participants may feel more comfortable discussing sensitive topics when part of a peer group (Barbour 2018), and because the researcher is able to examine whether themes represent a group consensus or individual opinion.

5.4.2 Justification for convenience sampling approach

There are various sampling options available when conducting consumer research, although some are better suited to focus group research than others. For example, random sampling would give every adolescent in secondary school education in Scotland the equal probability of being included in the study, which would likely lead to excellent sample representation (Harris 2011). However, this approach would be costly, time consuming and requires access to substantial personal data (Ross 2012), and was therefore beyond the scope of this PhD. An alternative approach would be stratified sampling, an approach that ensures adequate number of participants are drawn from predefined strata to ensure sufficient representation

(Gallopel-Morvan et al. 2012; Moodie et al. 2014; Teddlie and Yu 2007). Examples of stratification groups may include age, gender, socioeconomic status, region, school year, and smoking behaviour. The success of stratified sampling, however, is dependent on adequate data being available to determine the nature of the population in advance, an approach that was not time efficient or deemed appropriate/feasible to request when approaching schools to participate. Instead, a convenience sampling approach was employed. Convenience sampling is low in cost, flexible in delivery, minimised disruption and disclosure of information from participating schools, and allowed the sample to be easily accessed by the PhD Candidate. These are all important factors given the limited recourses available for PhD research (Etikan et al. 2016; Saunders et al. 2016; Matthews and Ross 2010). The main limitation of convenience sampling, however, is that it employs a non-probability approach to recruitment, which means that the findings may have limited external generalisability to all adolescents (Etikan et al. 2016).

5.4.3 Justification for the final sample reported

There are various factors to consider when determining an appropriate sample size in qualitative research. For example, Malterud et al (2016) suggest that the sample size for qualitative research should be determined by data saturation and 'information power', which takes account of the study aim, sample specificity, use of established theory, quality of dialogue, and analysis strategy. If the qualitative study has relatively large information power, then only a small sample size may be required, and vice versa. Similarly, Braun and Clark (2016) argue against setting *a priori* sampling targets, and that the researcher should instead routinely and repeatedly consider what constitutes an acceptable sample size throughout data collection in a live critically reflexive and evaluative manner. In this study, the sample size was further determined by factors beyond the researcher's control, for example, the limited time and resources associated with PhD research, the level of response/non-response from contacted schools, rate of parental consent, and availability of adolescents to participate on the day of the focus groups (e.g. due to competing commitments or illness). The final sample

size in this study was determined once the researcher felt satisfied that the data gathered had generated sufficient information power, and there was consensus among the researcher and supervisors that the time and resources required for further recruitment would exceed the likelihood of generating new insight to the data already collected.

Eight focus groups were conducted in secondary school in Scotland (Stirlingshire, North Ayrshire and West Lothian) with 16-17 year-olds ($n=41$). The sample considered in this study is limited to adolescents aged 16-17 years old, which differs from the second focus group study (Chapter Eight) which examined 11–16 year-olds. This narrower focus on 16-17 year olds was driven by the fact that smoking prevalence among younger adolescents in Scotland is lower than for older adolescents (SALSUS 2019a; The Scottish Government 2021). This study was designed to segment the groups by gender and smoking status. As it transpired it was difficult to recruit schools into the study and not possible to recruit enough consenting younger adolescent smokers from these schools to form viable group sizes. These factors were not a consideration for the second focus group study (Chapter Eight) as the sample was only segmented by gender and social grade; the sample was not segmented by smoking status because of the difficulties experienced in the first focus group study, and as smoking prevalence among younger adolescents across Britain is very low.

Groups were segmented by gender and smoking status (never-smoker, ever-smoker), determined by a brief questionnaire given to students in class, in order to explore any differences between these groups. This questionnaire was based on items used in previous studies of tobacco control with adolescents in the UK (Bauld et al. 2017; Moodie et al. 2011). Participants were provided with the following options: 'I have never smoked, not even a puff or two', 'I have smoked a few times before', 'I smoke at least once a month', 'I smoke at least once a week' and 'I smoke every day'. Those who selected 'I have never smoked not even a puff or two' were categorised as never-smokers, and those who selected any other option were categorised as 'ever-smokers' (Bauld et al. 2017; Moodie et al. 2011). Three ever-

smoker groups (two female, one male) and six never-smoker groups (four male, two female) were conducted (Table 5.1). While nine groups were originally conducted, one male never-smoker group (Group 6) was removed due to an admin error resulting in an ever-smoker being included in the group. Therefore, only eight of the groups were used in the analysis.

Table 5.1 Focus groups demography

Group	Gender	Smoking Status	Number of participants
1	Female	Ever-smoker	5
2	Female	Ever-smoker	5
3	Male	Ever-smoker	5
4	Male	Never-smoker	6
5	Male	Never-smoker	5
6	Male	Never-smoker	4
7	Male	Never-smoker	4
8	Female	Never-smoker	5
9	Female	Never-smoker	6

5.4.4 Materials

To help elicit reactions, participants were shown a variety of stimuli, detailed below. The stimuli were only distributed or shown to participants in the sections of the focus groups that they were relevant to.

5.4.4a Standardised cigarette packs

Participants were exposed to, and given the opportunity to interact with, ten different standardised cigarette packs during the groups. The first five packs were straight-edged cigarette packs with flip-top lids, differing only by brand variant name (Figure 5.1). The brand variants were selected to represent a range of cigarettes available in the UK market, which often include a colour within the name, mention filter innovation, or contain flavour changing capsules (Moodie et al. 2018). The following variants were included: *JPS Legendary Black*,

Mayfair Sky Blue, Embassy Number 1 Red, JPS Triple Flow and Lambert and Butler Crushball.

The second set of five standardised cigarette packs, which varied in structure, consisted of a straight-edged pack (*Sterling Dual*), bevelled-edge pack (*Silk Cut Silver*), rounded-edge pack (*Marlboro Gold*), shoulder box (*Virginia Slims*), and a slim pack (*Vogue Green*) (Figure 5.2). While shoulder box packs are permitted in the UK (Moodie et al. 2018b), no shoulder boxes had been identified on the UK market by the start of data collection. Consequently, the shoulder box used in this study was sourced from France, where standardised packs use the same drab brown colour. Although not currently sold, it was important to explore this feature since it is permitted under the UK legislation, and therefore packs using this opening method may still become available in the UK in the future.

All packs, including the shoulder box from France, carried the same pictorial and combined written warning to allow us to explore differences by brand variant name, or pack structure, without differences in warning design potentially confounding responses. The warning message, 'Smoking damages your teeth and gums', was considered most relatable to young people, given that it pertains to loss of attractiveness (Hammond 2011; Hoek et al. 2013).

Figure 5.1 Standardised packs with different brand variant names



Figure 5.2 Standardised packs varying in structure used in the focus groups (from left: slim pack, bevelled-edge pack, rounded-edge pack, shoulder box)



5.4.4b Dissuasive cigarettes

Participants were exposed to, and given the chance to handle, five cigarettes. Four of the cigarettes had designs intended to be dissuasive: (1) a cigarette with the text warning 'smoking kills'; (2) a cigarette with the text message 'toxic' and a skull and crossbones image; (3) a dark green cigarette; and (4) a lighter green cigarette' (Figure 5.2). The warning 'smoking kills' was chosen as this message is commonly communicated by public health bodies (WHO 2020), it is frequently recalled by adolescents from the outer packaging (Moodie et al. 2015b), and it is a design used in previous dissuasive cigarette research (Moodie et al. 2015a; Moodie et al. 2019b). The green cigarettes were chosen based on previous research, where they have been deemed to be unappealing (Hoek et al. 2016; Lund and Scheffels, 2018; Moodie et al. 2018a). Two green designs were featured to examine whether colour tone influenced reactions. The 'toxic' design, a combination unique to this study, was intended to show cigarettes as being dangerous and harmful, and therefore featured language and iconography that is often mandated on (or associated with) other hazardous and harmful substances (e.g. on chemicals such as bleach) (Health and Safety Executive 2019). While pairing both an image of a skull and crossbones and the wording 'toxic' is unique to this study, the image used is similar to a design previously investigated (Gallopel-Morvan et al. 2019a). A 'standard' cigarette design was also included with an imitation cork filter to provide a comparator to the dissuasive cigarettes.

Five cigarettes were made using specially designed printed stickers, which were applied to the cigarettes. The cigarette paper on each sticker had the wording '*Brand, King Size*' below the filter in a standardised font, similar to how brand variant name would appear on cigarette sticks in the UK post-standardised packaging. This approach is consistent with previous research on dissuasive cigarettes (Moodie et al. 2018a) and ensured that the presence of a recognisable brand name did not influence perceptions of, or reactions to, the on-cigarette warnings or unappealing colours (Figure 5.3).

Figure 5.3 ‘Standard’ cigarette and four dissuasive cigarettes



5.4.4c Audio health warning messages

Three audio warnings were included in the study: (1) The direct health effects of smoking – *smoking is toxic, why poison yourself*, (2) the monetary cost of smoking - *the average smokers spends over £2000 a year on cigarettes, what could you do with that money?* and (3) loss of attractiveness - *smoking makes your breath and clothes smell, everyone can smell a smoker*.

The warnings used in this study have not been tested in previous research, and were selected based on message styles that were deemed directly relevant to adolescents, based on literature discussed in Chapter Three around warning messaging (3.6.3).

The audio warnings were pre-recorded in quiet locations onto sound devices that were attached to the back of standardised cigarette packs, which were available on the market at the time of the study. All three cigarette packs carried the same health warning, to remain consistent with the standardised packs shown earlier in the groups.

5.4.5 Procedure

Local councils were contacted to request permission to contact schools in their jurisdiction. Schools were approached by letter or email, followed up by a phone call. In the three schools that agreed to participate, prospective participants were informed about the study aims by the PhD candidate or a teacher nominated by the school (e.g. those responsible for health and wellbeing education), and provided with an information sheet, privacy notice, consent forms, and pre-group questionnaires. All focus groups were conducted in classrooms at the school. At the start of each group, participants were reminded that their involvement was voluntary, they were free to withdraw at any time, their answers would be confidential, and all data provided would be anonymised. All groups lasted 30-45 minutes, with the duration of each group dictated by the length of the scheduled class period at each school. All groups were moderated by the PhD candidate. Due to a fault with recording equipment the dissuasive cigarette section was not captured for one female never smoking group, this group is therefore unusable in the dissuasive cigarettes section. In another focus group, the last five minutes of the session were missed, again due to issues with the recording device. This group was still used as almost the entire discussion was captured, with the exception of two of the sorting activities, for which images were taken and used for analysis.

The focus groups began by exploring unprompted awareness of standardised packaging. Participants were asked where they see cigarette packs, who they see them with, what cigarette packs look like, and how they feel about them. Participants were then shown the first set of five packs and were allowed to interact with them (Figure 5.2). They were asked how they felt about them, what they thought about the colour, whether the packs made them feel differently about smoking, if they thought they were off-putting, how they would feel about using the packs and displaying them in public, how they thought people would react to them using the packs, whether they liked or disliked any of the packs, and their opinions of the warnings. Participants were then asked what they thought about the brand variant names and if they communicated anything about the cigarettes inside the pack.

The first five packs were removed prior to the next five packs, which varied in pack structure, being shown (Figure 5.3). Participants were given time to look at the packs and encouraged to handle them, open them, and pass them around other group members. Time was given for comments to be made about the different pack features, with the moderator following up on these. Participants were then asked what they thought about the second set of five standardised packs. They were encouraged to look at the slim pack, packs with bevelled or rounded edges, and the shoulder box, alongside the standard straight-edged flip-top pack, thus providing an opportunity to comment on comparisons. They were also asked about their response to the warnings on these packs, to explore whether this was impacted by pack shape, opening style, and size.

All of the standardised packs varying in structure were taken in as the next section of the groups was on audio warning messages. Each warning message was played to participants, with the button pressed at the same time as opening the lid. The messages were played again if participants asked to hear them again. First, participants were asked about their general perceptions towards packs that play audio warning messages. They were then asked what they thought about the messages and how people their own age would react to them. They were then asked whether they thought that the messages may be considered off-putting, and if so, why. Finally, participants were asked whether the audio warning messages might have an impact on smokers and non-smokers behaviour.

Finally, following the discussion around audio warning messages, the groups focused on dissuasive cigarettes. Before being shown any of the cigarette stimuli, the section began with participants being asked what cigarettes look like, where they see them, and who they see them with. However, it should be noted that the cigarette packs distributed to participants in the initial section (standardised packaging) contained cigarettes, with participants allowed to open them and view the cigarettes. This may have shaped how they viewed or described cigarettes for the section on dissuasive cigarettes. In the first focus group conducted, all five

cigarettes were shown simultaneously. This, however, resulted in participants only focusing on certain cigarettes, rather than gaining their perception on all five individually. Therefore, in all other seven groups, participants were shown the standard cigarette and 'smoking kills' cigarette first, and given time to look at them, pass them around, and discuss. The toxic cigarette was then passed around on its own and, finally, both green cigarettes were handed out, with discussion and follow-on questions asked as each cigarette was introduced. All five cigarettes were brought out of a standardised cigarette pack to simulate a real cigarette being taken from a pack available on the market in the UK. Once all cigarettes were visible, participants were asked whether they liked or disliked any of the cigarettes in particular, whether the cigarettes made them feel differently about smoking, and what kind of person each cigarette may be (a personification technique used in previous cigarette packaging research) (Ford et al. 2013a). They were also asked whether they thought all cigarettes should have a warning on them or be an unattractive colour, if people their age would find the cigarettes appealing, and if they thought the cigarettes were off-putting. To help facilitate discussions, participants were also asked to rank each cigarette based on appeal, harm and taste (Ford et al. 2014). Show cards were placed on the table (most appealing/least appealing, strongest tasting/weakest tasting and most harmful/least harmful) and participants were asked to place the cigarettes based on what they thought, and were encouraged to work together and discuss their decisions. An image was taken (of the cigarettes and show cards only) once participants reached a consensus on each sorting activity to facilitate analysis, see Figure 5.4 for example. At the end of each group, participants were debriefed about the study and provided with an information leaflet on the harms of smoking and sources of further advice. Participants were offered the opportunity to enter into a ballot to win a computer tablet for taking part.

Figure 5.4 Focus group cigarette activity group image



5.5. Ethical considerations

Prior to recruitment, ethical approval was obtained from the General University Ethics panel (GUEP 273) at the University of Stirling (Appendix 1). A Protecting Vulnerable Groups (PVG) disclosure was also obtained by the PhD candidate from Disclosure Scotland for working with young people (Appendix 2). Since the start of the data collection, new data protection guidance was brought into effect, called the General Data Protection Regulations (GDPR). A privacy notice was prepared and shared with the data protection team at the University of Stirling, to ensure the content met the requirements. The privacy notice informs participants of the process in place for protecting their personal data, and informed them that personal information will be stored securely at the University of Stirling and will only be accessible to the PhD candidate (e.g. consent forms etc.). The privacy notice was given to participants that took part in the study after the new guidance came into effect (May 2018) (Appendix 3).

Prior to any schools being contacted, letters were sent to local council areas for approval to recruit schools (Appendix 4), following this schools were initially approached via letter (Appendix 5). As with any research involving adolescents, there are ethical considerations. While the focus groups concentrated on older adolescents (16 and 17 years), who are able to provide consent on their own behalf and do not generally require parental consent, measures were put in place to minimise any discomfort or worry that they may feel about taking part. Recruitment was carried out by either the PhD candidate or a nominated teacher in each school. The teachers that conducted recruitment on behalf of the researcher tended to be employed in either pastoral (e.g. pupil support) or health and wellbeing roles and were provided with information by the researcher to enable them to discuss the research with potential participants (Appendix 6). In both instances, the study was explained to the pupils via information and consent sheets provided (Appendix 7), including the confidential and anonymous nature of the research and what it would involve. Alongside the participant information sheets, a confidential pre-group questionnaire was used to segment the focus groups by gender and smoking status (Appendix 8). While, for the focus groups, parental consent was not required, one local authority required parental information sheets to be provided (Appendix 9). All participants were given the opportunity to ask any questions at recruitment and before each group.

At the beginning of each group, and included in the topic guide for the focus groups (Appendix 10), participants were reminded that the study was confidential, anonymous, that they could leave at any point and did not have to answer any questions. They were asked if they were happy for the group to be recorded. At the end of each focus group, participants were debriefed, including the reasons that the research was being conducted and were informed about the rationale for the implementation of standardised packaging, and why further novel packaging measures were being explored. They were also provided with a debrief leaflet on

the harms of smoking, which included sources for further information and support (NHS, YoungScot etc.).

5.6 Analysis

5.6.1 Justification for analysis approach

Analysis of qualitative data can be conducted using a number of approaches. One approach is framework analysis, a rigorous method originally developed for social policy research (Furber 2010). Framework analysis involves six stages, these are: (1) transcription of audio recordings verbatim; (2) becoming familiar with the interview; (3) coding each line of the transcript; (4) development of analytical framework; (5) applying analytical framework; and (6) charting data into a framework matrix (Gale et al. 2013). Framework analysis, however, is best applied when multiple researchers are analysing the qualitative data and experienced qualitative researchers are leading the analysis (Gale et al. 2013). As such, it was not considered suitable for this study, albeit it may have utility for future tobacco control research with young people.

An alternative qualitative approach is thematic analysis, which focuses on identifying recurring topics and relationships within the data (Bryman 2012; Saunders et al, 2016). This approach was chosen to be consistent with, and allow straightforward comparison to, previous tobacco packaging research with young people (Ford et al. 2013a; Scheffels and Sæbø 2013). One of the main benefits of a thematic approach, and the primary reason that it was employed here, is that the flexible and accessible nature aids researchers who are not that advanced in qualitative research in learning how to code and analyse qualitative data (Braun and Clark 2012). The results of thematic analysis are also accessible and easily understood by lay audiences, such as the public health and policy makers (Nowell et al. 2017), thus making it ideal for a critical social marketing approach (section 4.2). Nowell and colleagues (2017) also highlight several further benefits of thematic analysis: (1) the approach is an efficient way to

summarise the key features of a large body of data; (2) the approach can easily facilitate comparison of where there is agreement and disagreement between groups (e.g. smoker's vs non-smokers); and (3) the approach is sensitive to detect new themes not anticipated prior to the data collection. Thematic analysis also offers the possibility of using both an inductive (themes derived from the data) or deductive approach (themes derived or based on existing theory, or part of the existing topic guide) (Braun and Clark 2012; Saunders et al. 2016). Both an inductive and deductive approach were employed in this research.

There are, however, limitations of thematic analysis. It has been suggested that the inherent flexibility of thematic analysis is a potential weakness, as it may result in inconsistencies in the themes drawn from data (Nowell et al. 2017). Thematic analysis can also be influenced by subjective interpretations by the researcher, particularly when only one researcher conducts the majority of coding, analysis, and interpretation (Javadi and Zarea 2016). A further disadvantage of a thematic approach is that analysis is principally descriptive, and findings may not be generalisable outside of the sample (Castleberry and Nolen 2018).

5.6.2 Thematic analysis approach employed

All of the focus group recordings were transcribed by the PhD candidate, who initially listened to the recordings before transcribing began. This ensured they became familiar with the conversations that took place combined with their own recollections from conducting the groups. The groups were then transcribed verbatim and checked several times against the audio recordings for accuracy. Transcripts were analysed using NVivo version 11. Separate NVivo files were used for the three topic areas explored: (1) responses to standardised packaging, (2) responses to dissuasive cigarettes and (3) responses to audio warning messages.

Consistent with previous qualitative and quantitative tobacco control research in the UK with both adolescents and adults (Ford et al. 2013a; Moodie et al. 2015a; Moodie et al. 2019b),

shared meaning and common attitudes were identified across the groups using the six sequential stages of thematic analysis recommended by Braun and Clarke (2012), these were: 1) becoming familiar with the data, 2) generating initial codes, 3) searching for themes, 4) reviewing potential themes, 5) defining and naming themes, and 6) writing the final report. Initially, transcripts were read several times to enable familiarisation with the groups and discussion, and checked the transcripts against the audio recordings to ensure accuracy (stage one). A thematic coding framework was created in Nvivo based on initial common themes identified in the transcripts (stage two). All emerging themes were subsequently refined based on the framework created (stage three). DM generated the initial thematic codes (e.g. perceptions of standardised pack colour, dissuasive cigarettes being off-putting, etc.) and these were refined based on discussions with, and drawing on the expertise of the primary and secondary supervisors, Crawford Moodie (CM) and Nathan Critchlow (NC) (stage four), and then organised under key headings based on the key areas explored in the topic guide (stage five). Matrix coding was also used in NVivo to categorise themes by smoking status and gender to explore any between group differences. Concerning the cigarette sorting activity, images were taken of the cigarettes only once they had been organised. This section was analysed separately by denoting the order from each group alongside the conversation from the transcripts during the activity and the images taken, to identify any differences between groups (e.g. smoking status and gender). The findings were subsequently written and submitted for peer review (stage six).

5.7 Adolescents' awareness of, and responses to, standardised cigarette packs

5.7.1 Unprompted awareness of standardised packaging

When asked what cigarette packs look like, and before being shown any pack stimuli, most participants were generally aware of standardised packaging, with several mentioning that they are all the same colour and/or bland, e.g. *It's just like bland colours* (Male ever-smoker). There was awareness of standardised packaging in all three ever-smoker groups, and in two

of the five never-smoker groups (one female, one male). Participants said that they frequently saw cigarettes packs, mainly as litter or used by other people (e.g. family or friends). Participants often mentioned the health warnings and recalled seeing certain images, including how smoking damages the lungs, heart, and other people, including young children and babies.

They all look the same now do they not? They all had individual packaging and now it's all the same (Female ever-smoker)

Compared to what they used to be they're basic now, before they used to be pretty (Female never-smoker)

Well they have usually got a wee picture of an illness or something on it (Male never-smoker)

5.7.2 Prompted response to standardised packaging

When shown the first set of packs (Figure 5.1), the consensus was that they all looked the same, being unappealing, disgusting, and off-putting. Some participants mentioned the lack of branding on the packs and that, in general, the packs would not really be noticed. The colour was often described as dirty, dull, or boring, with some commenting that they thought it reflected the harm caused by smoking. Several participants, mostly female, suggested that they would feel embarrassed about having one of the standardised packs or that they would not use them. The packs were viewed negatively in all groups.

Nothing on its appealing, it's just trying to stop you from smoking (Female never-smoker)

The colour of your lungs when you get lung cancer (Female ever-smoker)

They're quite dark... so it's not as if you'll notice them much (Male never-smoker)

I would not open that in front of somebody... and imagine a wean [child] saw that or at a family gathering people saw that, quite embarrassing to have that (Female never-smoker)

5.7.3 Perceptions of brand variant name

Some participants considered the brand and variant names on the standardised packs they were shown to be appealing, particularly *Embassy Number 1 Red*, *Lambert and Butler Crushball*, *JPS Legendary Black* and *Mayfair Sky Blue*. The other brand name, *Sterling Dual*, was seldom mentioned. The favoured brand names were considered 'classy' and 'cool', particularly by males. Females were less likely to notice brand name, e.g. *out of everything the brand name is the least stand out thing within the packet (Female never-smoker)*, or think that there were any differences, e.g. *Unless you knew the names... like looking at them, you wouldn't know which ones are better (Female ever-smoker)*. Several participants noted that the brand and variant name was the only thing left on the pack to create appeal, while others commented that the variant names with colours might be an attempt to remind people of the colours that were previously used on fully-branded packs.

Lambert and Butler sounds quite classy (Male ever-smoker)

Well, Legendary Black, for example, is a bit like the Embassy one, it makes it sound cool and would maybe encourage you to buy it (Male never-smoker)

They are trying to encourage with the only one thing they can, like the brand more so than the cigarettes, they obviously now can't have their fancy nice looking packet so they try with the name (Female never-smoker)

I think they are just reminiscing on their old colour; think they're missing it [Mayfair Sky Blue] (Male never-smoker)

5.7.4 Perceptions of pack structure

When shown the second set of standardised packs (Figure 5.2), participants often described the shoulder box as weird, cool, or different. It was generally viewed positively across groups. It was also thought it may be more expensive due to the opening style, which some participants suggested might encourage people to buy it.

That is a stupid packaging to use because folk are gonna [going to] buy them cause [because] they look smart (Female ever-smoker)

I think that one [shoulder box] would be more expensive because it opens up differently (Female ever-smoker)

It's like flip open ...and then you think oh I can look cool (Male never-smoker)

The slim pack was also viewed positively with several, mostly female, participants considering it the most attractive pack. It was also suggested that the cigarettes inside the slim pack might be less harmful, due to the thinness of the pack in comparison to the other packs. Some participants were curious about the cigarettes inside the pack and opened the pack. Among those that did, ever-smokers and males were more likely to suggest that they look nicer, compared them to confectionary cigarettes (i.e. sweets in the shape of a cigarette), or suggested that they would make them feel better about smoking, e.g. *I wouldn't feel as bad smoking that* (Male never-smoker). Several male ever-smokers and never-smokers also noted that the slim pack would be easier to hide.

I'd say that's slightly more attractive than the thicker ones [packs], but then it wouldn't attract me but it maybe is a bit prettier and thinner than the big massive one [pack]
(Female never-smoker)

They look healthier cause [because] they are in a slim pack (Male never-smoker)

You feel like the bigger ones are more off-putting, cause like they'd be hard to hide in a pocket and stuff, but the slimmer ones you can just slide them in your pocket, it's the same with a phone (Male never-smoker)

Few participants noticed that two packs had bevelled or rounded edges. Most of the discussion around differences in edge type only arose after participants were prompted to compare these packs with the straight-edged pack. After being prompted, some participants suggested that these packs were more attractive or felt better to hold than a straight-edged pack, in particular males and female ever-smokers. Some female ever-smokers suggested that the Marlboro pack with the rounded edges was *chic* and a *fashion statement*, because they were packs that they had not seen before.

They feel better in your hand (Male never-smoker)

Yeah, like, they are even like rounded as well instead of like straight or squared
(Female ever-smoker)

Several male never-smokers noted that because the second set of packs differed in structure there was more of a choice than if they were all identical, and that these structural features provided a way to create appeal.

*I still wouldn't do it, but the diverse range of packets make it seem more appealing.
Like the thinner one make it seem like its lighter and not as bad (Male never-smoker)*

Makes you feel like you've got more of a choice, just based on the packaging (Male never-smoker)

I think they are trying to make it appeal in a different way than colour and names (Male never-smoker)

5.7.5 Health warning salience

Prior to seeing any pack stimuli, the health warnings were consistently one of the first things that participants recalled about cigarette packs. When shown the first set of five packs, the health warnings were considered clear, noticeable and believable, although within one female ever-smoker group it was felt that the warnings exaggerated the associated harms. Most participants, irrespective of smoking status, felt that the warnings reduced the appeal of smoking and agreed that they would put them off smoking. While participants most frequently commented on the pictorial warnings on the front and back of packs, there was mention of the text warnings on the secondary surfaces of the slim pack being smaller.

Yeah, because they [health warnings] are most of the box [cigarette pack] it's like a tiny name and then everywhere else it is big huge warnings so it's like you can't really avoid it (Male never-smoker)

Maybe if they saw tobacco smoke contains over 70 substances known to cause cancer, then probably would see that and think I better quit before it's too late (Male ever-smoker)

I feel like the message on the side [slim pack] isn't as clear because it is a lot thinner and smaller (Female never-smoker)

5.7.6 Perceived impact on smoking behaviour

Participants, in particular never-smokers, suggested that the standardised packs were off-putting, primarily because of the warnings, although the slimmer pack and shoulder box, and to a lesser extent the bevelled-edged and rounded-edged packs, were viewed as less of a deterrent. Several males suggested that they would feel uncomfortable about using these packs, with some stating that they would hide or conceal them.

I would be quite awkward like I don't know, like I wouldn't be comfortable (Male ever-smoker)

Try and keep it hidden you would not want anyone to see your using them (Male never-smoker)

It's quite off-putting innit [isn't it], I don't know why after seeing that person's teeth [warning] you'd want to smoke (Female never-smoker)

Concerning the impact on others, participants consistently stated that they thought the standardised packs, particularly the straight-edged packs, would have the least impact on established smokers, with addiction frequently offered as a reason. Nevertheless, several participants suggested that the packs would be off-putting for people thinking about taking up smoking, in particular young people.

Doesn't really stop their addiction, it's just a packet, it would probably make them feel worse about smoking, but not stop them from smoking (Male never-smoker)

If they've just started and they seen that all the time it might off put them, like every single time they go to get a fag [cigarette] and they see that picture they might be like I don't wanna [want to] smoke (Female never-smoker)

5.8 Adolescents' responses to, and perceptions of, dissuasive cigarettes

5.8.1 General perception of, and exposure to, cigarettes

Across all groups, participants recalled seeing cigarettes frequently, with several participants suggesting that they see them every day. Places where participants recalled seeing cigarettes included public spaces, at home (if family members smoked), or at school (e.g. pupils or parents picking up their children). Some participants mentioned that they recalled seeing the cigarette more often than the outer packaging.

I probably see them every day, if you're walking home, you'll always see someone walking with a cigarette in their hand or something (Male ever-smoker)

It depends on who you're with, really, if your family smoke you'll see them a lot, if your friends smoke you'll see them a lot (Female ever-smoker)

At home, in the street, at school, at work (Female ever-smoker)

Everywhere, if I'm walking home I see someone walking their dog and they've got one [a cigarette], picking their children up from school (Female never-smoker)

When asked to describe what cigarettes are like, most participants described the 'standard' cigarette design (i.e. imitation cork filter and white paper). As noted previously (5.3.3), participants may have been exposed to cigarettes in the section exploring standardised

packaging from opening the packs, with this potentially shaping their response. Some female ever-smokers, however, were knowledgeable of different cigarette types (e.g. capsule cigarettes) and indicated that they thought these alternative features or designs might encourage consumption. Several participants, both male and female, also referred to cigarettes made with hand-rolling tobacco (roll-your-own cigarettes).

*You get white ones, you get ones with the wee Crushball [a flavour-changing capsule
(Female ever-smoker)*

*They're like improving them cause like you get the like the wee things that you squish
that makes it like menthol or something... like that's encouraging people to try it cause
they want to know what that's like (Female never-smoker)*

5.8.2 Initial reactions to, and perceptions of, the dissuasive cigarettes

In general, participants considered the explicit on-cigarette warnings to reduce the appeal of smoking and to be off-putting. Specifically, both the 'toxic' and 'smoking kills' cigarettes were deemed to be embarrassing, particularly among female ever-smokers. Some female ever-smokers also considered the 'toxic' cigarette to be scary, and that the presence of the word toxic would elicit a negative reaction, with one participant mentioning that it would give you a 'bad feeling'. While some participants placed slightly greater emphasis on the skull and crossbones image than the word 'toxic', in general the image and text appeared to be viewed holistically. While the 'toxic' cigarette was viewed negatively by most participants, there was mention in one female ever-smoker group that the cigarette was cool and that it may become a trend and encourage people to want to try them.

*Yeah they are well more embarrassing, can you imagine Justin Bieber [popular music
artist] smoking a fag [colloquial term for cigarette] and it says smoking kills in red ink
on it (Female ever-smoker)*

If you're seeing something with toxic on it, you're not going to want to take it (Male ever-smoker)

They're scary, like it gives you a bad feeling looking at it, it says toxic on it (Female ever-smoker)

Honestly, if they [toxic cigarette] came out, you'd want to buy them to see what they were like (Female ever-smoker)

Initial responses towards both green cigarettes were generally negative for most participants, however, there was further discussion in some groups that coloured designs may have an element of appeal to some consumers. Several female ever-smokers thought that the green cigarettes, in particular the lighter green, were embarrassing, ugly and unattractive, compared to the standard cigarette, e.g. *They're just ugly, yeah they are a lot uglier than the white ones* (Female ever-smoker). It was also suggested by several male participants that both green cigarettes were horrible, bland, or dull, and that the standard cigarette (white paper and imitation cork filter) was more appealing. Some male never-smokers suggested that the green colour, 'toxic' symbol and 'smoking kills' could be used together. These perceptions, however, were not unanimous as some participants, particularly some female ever and never-smokers, thought that the use of an unusual or different colour, and the lack of health warnings, may create some appeal, while one male ever-smoker group suggested the lighter green cigarette was 'slightly' appealing.

They would be less attractive as well [the green cigarettes], like normal fags [white with imitation cork filter] kind of appeal to like the Hollywood image (Male ever-smoker)

Yeah, they [green cigarettes] just look almost fancy, like if I saw someone with that I'd think, 'oh what is that (Female never-smoker)

The lighter green is a wee bit more like appealing than the heavy dark green (Male ever-smoker)

But the green ones don't say anything, so like you just think it was a fancy green cigarette (Female ever-smoker)

5.8.3 Harm perceptions of dissuasive cigarettes

The cigarette carrying the 'toxic' warning and skull and crossbones image was described as a constant reminder of the harms of smoking, with both males and females suggesting that the use of the skull and crossbones image reminded them of death and other dangerous substances (e.g. bleach). This perception of harm was also reflected in the show card activity, with the 'toxic' cigarette rated as being most harmful in most of the groups. Several participants, mostly ever-smokers, mentioned that the 'smoking kills' message would not be as effective as the 'toxic' message, with the rationale being that people are used to seeing it, possibly on the outer packaging. Some participants, mostly males, also suggested that the 'smoking kills' warning was not always clear, and may not always be seen when the cigarette is being smoked.

The yellow one I think really sticks out, like toxic, that wee [a slang term for small] sign always reminded me death, like you get told not to touch anything like bleach and they've got that sign on it (Female never-smoker)

You'd be like a walking warning sign ['toxic' cigarette] (Female ever-smoker)

I feel like the smoking kills one is pretty pointless because everyone is so used to hearing that... but the toxic one I feel like that would be better (Female ever-smoker)

I feel like the warning is good but you can't always really see it [smoking kills warning] very well (Male never-smoker)

When ranking the cigarettes based on harm, three of the seven groups (one female ever-smoker and two male never-smoker groups) considered all cigarettes equally as harmful, including the standard cigarette. In the rest of the groups the standard cigarette was ranked the least harmful and the toxic cigarette the most harmful, apart from in a female never-smoker group where both green cigarettes were considered the least harmful.

5.8.4 Perceived impact of dissuasive cigarettes on smoking attitudes and behaviour

Participants generally agreed that the dissuasive cigarettes would make them feel differently about smoking and would be off-putting, in particular, the 'toxic' cigarette and, for some males, the green cigarettes.

I feel like the toxic one makes you feel worse about it [smoking] (Male never-smoker)

I think the green ones are the worst out of the bunch, because with the kind of light colours you think [cigarettes with white paper], aw it's kind of normal, then you see something that's like a dark green stick and your like, ew, never mind (Male never-smoker)

Concerning smoking attitudes and behaviour among other people, most participants believed that the explicit on-cigarette warnings would likely dissuade non-smokers and newer smokers. Specifically, some female ever-smokers suggested that individuals might become cautious and self-conscious about the impact of the cigarettes on their appearance. They also

mentioned that there may be an immediate effect in deterring smokers, however, this may diminish over time as they may become desensitised to the messages and designs. There was a consensus, that the cigarettes would have the least impact on established smokers, with some suggesting that such individuals are used to seeing the warnings on the pack already, and any additional affect the cigarettes may have, would fade.

Maybe first timers, it would put them off (Female never-smoker)

I reckon a lot of it is to do with appearance nowadays and that's not going to be good for your appearance (Female ever-smoker)

Unless you've been smoking for a long time then aye [slang for yes] it would put you off (Male ever-smoker)

I don't know, but I feel like for the first year they would make an impact, but once you're walking about and every single person you see is doing it [smoking dissuasive cigarettes], it would become less embarrassing. Because everyone is in the same boat (Female ever-smoker)

5.9 Adolescents' responses to, and perceptions of, audio health warnings

5.9.1 Initial response to audio warning messages

Participants initially responded to the audio warnings by suggesting that they were or would become annoying, mostly among never-smokers. Some ever-smokers found the audio warnings funny, and thought that people their own age would laugh if they heard them, e.g. *probably end up laughing at that to be honest* (Male ever-smoker). However, some ever-smokers, and males, suggested that the audio warnings would be embarrassing, especially if a pack containing an audio warning was opened around other people. Ever-smokers and

males were likely to believe that the cost of cigarettes would go up due to the addition of an audio device in the cigarette pack, and as a consequence, smokers would become annoyed.

I think if all of them had them it would stop maybe people smoking because it would just get annoying (Female never-smoker)

When you get to our age I wouldn't want that, I'd be kind of embarrassed (Female ever-smoker)

Cause that's going to make them cost more and that's only going to make people more annoyed having to pay it (Male never-smoker)

5.9.2 Health warning salience

With regards to salience, the audio warnings were considered unavoidable, mostly among never-smokers, due to the fact that the message was being heard, rather than just read, like the on-pack warnings. Some male never-smokers suggested that the audio warning seemed more 'human', and felt as if someone was speaking to them directly. Several participants noted that the message may become memorised.

Like it would sink in more because you'd hear it over and over again (Male never-smoker)

It seems more human and not just some text on a piece of paper ...

Aye, its someone speaking to you (Male never-smokers)

When you open it your actually forced to listen to the message (Female never-smoker)

There was however mention by some participants, particularly ever-smokers, that the audio warnings would be avoidable. It was frequently mentioned that the audio device would be removed or ripped out, alternative carriers used (e.g. other packs), cigarettes taken from the bottom of the pack and some people may switch to rolling tobacco. Some male never-smokers commented that when people their age are trying smoking or starting to smoke, they are often given cigarettes by friends, and so, would not be exposed to the pack or the audio warning in this instance.

You'd just change the pack (Male ever-smoker)

When folk start or if it's a onetime thing obviously if they are not a smoker they are not going to have a packet of fags ... their not seeing that packet it's their friend that has that packet and they are just taking a cigarette out and offering it to their friend. So it's not them that's seeing the packet, it's not the potential smoker that's seeing the package (Male never-smoker)

There is a way around that, folk would probably just rip the bottom get a fag out the bottom rather than having to open the top (Female ever-smoker)

5.9.3 Message content

In terms of message content, several participants mentioned that the audio warnings were informative, particularly male ever-smokers. However, some female ever-smokers mentioned that the audio messages were communicating the same information as the on-pack warnings already, and that the information is already known, e.g. *'It's just the same as the packs really' ... 'It's nothing that they don't know already'* (female ever-smokers). In terms of alternative warning messages to those used in the groups, some male never-smokers suggested that the messages should be short and focused, which they deemed would be more effective. The use

of a child's voice, positive messages, cessation messages using the NHS (National Health Service) quit line and messages relating to the direct harms of smoking, were offered as alternatives.

A wee lassie [slang word for young girl] speaking saying 'your killing me' and things like that (Male ever-smoker)

Maybe like, think about what its [smoking] doing too you, do you want to live a better life (Male never-smoker)

Maybe like as soon as they open it just one short message, think about what is inside you [from smoking] (Male never-smoker)

If you want to tell them how to stop by the NHS [National Health Service] helpline on the yellow banner [quit line displayed on cigarette pack], maybe something more like that because smokers might feel bad about themselves but they don't have much to like convince them to get help or whatever. So maybe having the audio message saying something like oh if you feel too bad about this, you can get help here (Male never-smoker)

5.9.4 Impact on smoking behaviour

When asked about what kind of impact the audio warnings would have and whether they would be off-putting, participants were more likely to discuss impact in terms of other people, and less so about themselves. Participants often mentioned that the audio warnings would be off-putting to people who had just started smoking and may prevent uptake among non-smokers, mostly among male-ever and never-smokers. The audio warnings were deemed less relevant to established smokers, with participants suggesting that they wouldn't care, as they have been smoking for so long.

As a whole yeah, maybe to some people not, but it's always going to happen, it's like the messages are really off-putting but to some people they just won't care (Female never-smoker)

Yeah but I feel like if every time they went for a fag and they were being told this is going to give you lung cancer, they probably would be like hm... [hesitation], but it would take a longer time. It depends on the person, like it could take a while for it to have an effect on someone or someone could be blatant to it, it doesn't bother them (Female ever-smoker)

It would prevent someone who was just starting but people who were like smokers they just wouldn't care. I think they'd just get annoyed at it (Male never-smoker)

Someone that have smoked 40 years won't even care, they'd probably just break it off (Male never-smoker)

5.10 Discussion

5.10.1 Adolescents' reactions to standardised tobacco packaging

The findings showed that there was awareness of standardised packaging among this group of adolescents, in particular, among ever-smokers. Participants were able to recall that cigarette packaging used to be colourful and branded, but was now plain. The unprompted recall of standardised packaging was often described as dull or boring, with the pictorial health warning being one of the first things recollected about cigarette packs.

Unlike in countries such as Australia and New Zealand, where cigarettes must be sold in straight-edged flip-top packs, standardised packaging legislation in the UK (and the other three European countries to have fully implemented standardised packaging reviewed in Chapter Two) is less prescriptive. The findings demonstrate that the shoulder box, a slimmer pack, and packs with non-traditional shapes (i.e. with bevelled or rounded edges rather than straight edges) held greater appeal. For example, the shoulder box was viewed positively, being considered cool and different, and there was a preference for the slim pack among females. This is consistent with previous studies where young people are more likely to be drawn to packs with unique structures (e.g. bevelled-edged or slim packs) (Mucan and Moodie 2018; Ford et al. 2012; Moodie and Ford 2011). Although past research suggests that males view fully-branded slim packs negatively, primarily because of the slimness and feminine colour schemes (Moodie and Ford 2011; Doxey and Hammond 2011), for some males standardised slim packs were viewed favourably as they were considered easier to conceal and appeared less harmful.

The findings highlight that adolescent ever-smokers and never-smokers in Scotland perceived standardised cigarette packs negatively, with these packs considered to reduce the appeal of smoking. They often commented on how salient the health warnings on standardised packs were, considering them to be off-putting and suggesting that they may deter young people from starting smoking. These findings are consistent with previous research with young people (Andrews et al. 2016; Dunlop et al. 2017; Ford et al. 2013a; Germain et al. 2010; McCool et al. 2012; Scheffels and Sæbø 2013; Van Hal et al. 2012; White et al. 2015).

While any mention of taste, smell, flavour, or anything which may promote a product by creating an erroneous impression about its characteristics, is banned on standardised packs in the UK (Department of Health 2016), tobacco companies recognise the increased importance of the brand variant name when all other branding is removed. In the UK, Australia, France and New Zealand, tobacco companies have continued to use brand and particularly

variant name as a promotional tool post-standardised packaging (Moodie et al. 2018b; Moodie et al. 2019a; Scollo et al. 2015; Scollo et al. 2018), changing existing variant names (e.g. 'Silver' to 'Silver Stream') or introducing new variants (e.g. 'Silver Fine Scent', 'Master Blend Blue', 'Black Alaska'). Consistent with past research (Doxey and Hammond 2011; Scheffels and Sæbø 2013), among males in particular, brand variant names on otherwise identical packs (e.g. JPS Legendary Black) can still have an appeal function. In addition, it was suggested that colour descriptors, which are frequently used on standardised packs (Moodie et al. 2018b; Scollo et al. 2018), may be intended to invoke memories of the colour that was previously used for fully-branded packaging. As past research has found that variant names using colour descriptors can shape product perceptions (Doxey and Hammond 2011; Scheffels and Sæbø 2013), governments planning to introduce standardised packaging may prefer to ban colour descriptors on packs.

5.10.2 Adolescents' reactions to dissuasive cigarettes

Adolescents had negative reactions towards the four dissuasive cigarette designs and considered them to be embarrassing and off-putting, in particular those with explicit health warnings. They suggested that dissuasive cigarettes would likely be a deterrent for susceptible never-smokers and those who have just begun smoking, but that effectiveness may be limited in established or long-term smokers. These negative reactions were largely consistent among both male and female ever and never-smokers.

In this study, adolescents reported seeing cigarettes on a regular basis, and some reported daily or almost daily exposure. They also suggested that they saw the cigarette more than the outer packaging, which means they are not necessarily exposed to the pictorial warnings and other health messages on standardised packs. Some participants were aware of different types of cigarettes and new design features, such as capsule cigarettes. This is consistent with past research which suggests young people notice, and pay attention to, cigarette design (Abad-Vivero et al. 2016). That the cigarette stick is an increasingly important promotional tool

for tobacco companies, and as the findings show that adolescents in Scotland are regularly exposed to cigarettes, supports the idea that the cigarette provides a high-reach opportunity to communicate health messages to young people (Moodie 2018a).

While adolescents mostly reacted negatively to all four dissuasive designs, the cigarettes which featured explicit warnings were considered the most effective and off-putting, particularly the 'toxic' cigarette. The inclusion of a skull and crossbones image – a universal sign of hazardous substances – elicited associations with harm from other dangerous chemicals (e.g. bleach). This is consistent with packaging research which suggests that pictorial warnings have a greater impact than text-only warnings (Hammond 2011), and a recent qualitative study which found that a cigarette with an image of a 'skull and crossbones' was considered particularly dissuasive (Gallopel-Morvan et al. 2019a). Nevertheless, in this study, some female ever-smokers did still suggest that the potential risk factor associated with the 'toxic' warning might encourage trial. Consistent with previous research, in this study some adolescent female ever-smokers considered the 'smoking kills' cigarette warning to be embarrassing (Moodie et al. 2015a). Some participants, however, mentioned this message might not be as effective as the 'toxic' cigarette, as established smokers may have become desensitised to the message through repeated exposure over time. While initial reactions to the green cigarettes were generally negative, some participants (mostly females) suggested that the colour may be considered appealing and some male ever-smokers deemed the lighter green cigarette slightly more appealing than the darker green cigarette. This is not consistent with previous research where different shades of green cigarettes were considered unappealing (Hoek et al. 2016; Moodie et al. 2018a), suggesting that further research into effectiveness of dissuasive colours is required. Some male never-smokers thought a combination of different dissuasive features (unappealing colour, toxic symbol and 'smoking kills') should be considered. Future research should therefore build upon previous studies that have combined a variety of dissuasive features (Gallopel-Morvan et al. 2019a).

Participants generally agreed that the dissuasive cigarettes would put them off smoking, echoing previous quantitative research with adolescents and adults (Drovandi et al. 2018; Hoek et al., 2016; Lund and Scheffels, 2018; Moodie et al. 2018a). Concerning the impact on others, it was consistently suggested that the cigarettes would have the strongest impact on deterring newer smokers and susceptible never-smokers, and the effect would be reduced among established smokers. For any impact to be sustained, and given that participants mentioned desensitisation, one option could be to rotate dissuasive designs, for example in a manner similar to the on-pack warnings in the European Union, which are rotated annually (European Commission 2015). It would be feasible to have text-only warnings on sticks for the first year, unattractively coloured cigarettes for the next year, combined (pictorial and text) warnings for the third year, and so on, particularly as these designs should be considered complementary (Moodie et al. 2018a). The use of a health message (or dissuasive colour) on the cigarette stick is already being considered by the Scottish and Canadian governments (The Scottish Government 2018a; Health Canada 2018). While our study was one of the first to explore adolescents' qualitative responses to dissuasive cigarettes, survey research is needed to examine what extent, if at all, reactions to dissuasive cigarettes are associated with reduced trial intentions among adolescents, with this explored in Chapter Seven of this thesis. Research exploring dissuasive cigarettes in a naturalistic context with existing smokers would also be of value, with similar studies conducted with young female smokers prior to the implementation of standardised packaging (Moodie and MacKintosh 2013).

5.10.3 Adolescents' reactions to audio warning messages

The findings reveal that adolescents consider audio warnings to be embarrassing and off-putting. The audio warning messages were considered salient, as it was being heard, rather than solely reading the health messages on the outer packaging. Adolescents thought that cigarette packs containing an audio warning message may deter uptake and newer smokers from continuing. Consistent with the findings for dissuasive cigarettes, the negative reactions

to the audio warnings were generally consistent across all groups, irrespective of gender or smoking status.

While, in line with past research, the findings provide evidence that young people thought that the audio messages could be avoided, with the device being removed or cigarettes taken out of the pack and alternative storage used (Moodie et al. 2015a; Mitchell et al. 2019), the audio warning messages were considered salient and an effective means of communicating health information. The findings from this study, similar to past research, suggest that adolescents find audio warning messages to be annoying, embarrassing and off-putting, with reference made to what other people would think if the pack was opened in public or in a social situation, similar to findings with smokers (e.g. parties). (Moodie et al. 2015a; Mitchell et al. 2019). In terms of the message style, participants offered a variety of alternatives, such as, positive and encouraging and factual messages. Participants also mentioned that the use of a child's voice may be effective, in line with opinions from smokers (Mitchell et al. 2019). Though there remain few studies exploring audio warning messages, there is value in future research, as suggested by marketing experts, audio warning messages present a low cost and potentially effective means of communicating health information (Moodie 2016a).

Although the findings suggest that audio warnings may be a viable means of communicating smoking-related harms, this intervention may result in unintended negative consequences for the environment. In this study the technology used to deliver the audio warning was similar to the devices used in noise-emitting greeting cards (i.e. a battery, processor and speaker that plays a sound when the card is opened). While any devices installed in cigarette packs should be as small as possible, e.g. nano-sized batteries, and made of recyclable components, the onus for recycling will remain with the end-user and be subject to their motivation and opportunity to do so. Challenges to efficient recycling include the materials not being collected in a consumer's domestic waste, users disposing of the pack in non-recycling bins, or consumers being unwilling to take time to separate the device from the cardboard carton to

recycle the respective components. Nevertheless, the environmental impact of a small sound device is likely to be less than for e-cigarettes that use lithium batteries and plastic bottles for the e-liquids. Moreover, if audio warnings do help reduce smoking uptake and encourage cessation this would have long-term environmental benefits by reducing the wider littering and pollution caused by other smoking-related paraphernalia (e.g. cigarette butts and lighters).

Critics who adopt a libertarian perspective, for example, think tanks such as the Institute of Economic Affairs, have been long-time critics of various tobacco control policies and public health interventions in the UK (Institute for Economic Affairs 2017; The Spectator 2015). There is already evidence they have similar objections to dissuasive cigarettes and audio warnings, for example, suggesting that these shame smokers and are unethical, and that employing further warnings is excessive and will have little effect on established smokers (Velvet Glove, Iron Fist 2019). These counter arguments, however, appear at odds with the perspectives of consumers. For example, research has consistently found that consumers believe that such novel measures may help reduce smoking and prevent uptake, as found in this research, and while most libertarians opposed standardised packaging, support for this policy has increased among smokers and ex-smokers since it was introduced (Moodie et al. 2020a). There is also clear political acceptability of such packaging related measures aimed at reducing tobacco use, with over 100 countries requiring pictorial warnings that cover more than 50% of the main display areas of packs, 16 countries requiring standardised packaging, and several countries moving towards dissuasive cigarettes

5.11 Study limitations

Concerning limitations, only a small number of ever-smokers were recruited. This may, in part, be due to the voluntary basis of the study, and as the study took place in a school setting adolescents may have felt uncomfortable indicating that they had tried smoking. This limits our understanding of the response of young smokers to standardised packaging, audio

warning messages and dissuasive cigarettes. While the standardised packs used in the study were available on the UK market, the audio warnings and dissuasive cigarettes were designed specifically for the study, and their novelty could have prompted some of the responses. While teachers were not present in the groups, being part of a peer group may have also lead some participants to provide socially desirable responses. While it was the intention to focus on adolescents aged 16 and 17, and qualitative research is not intended to be generalisable, nevertheless a very narrow insight is provided into this age group.

Finally, in this study, groups were only segmented into ever-smokers and never-smokers. This approach, however, lacks the sensitivity to capture how further nuances in youth tobacco use may influence reactions. For example, it is not known to what extent reactions differ among never-smokers who are susceptible to start smoking in the future versus those who definitively reject any notion of smoking, albeit this is explored in greater detail in the empirical data presented in Chapters Six and Seven. Moreover, in the ever-smoking group, the segmentation does not consider how existing intensity of smoking may have influenced responses. For example, those who smoked more frequently may have already been desensitised to standardised packs and warnings, or may have had more defensive views when discussing the acceptability of dissuasive cigarettes and audio warnings

5.12 Conclusions

The findings suggest that standardised packaging is having the intended impact in reducing the appeal of cigarette packaging, with adolescents finding standardised packs boring, dull and unappealing, and the warnings salient. However, the slight variations in pack structure held some appeal among adolescents, in particular slim designs and shoulder boxes. The audio warning messages were considered salient, embarrassing and unavoidable. Adolescents thought that the audio warning messages may act as a deterrent from smoking for people who have recently started smoking or for young people and non-smokers. Finally,

dissuasive cigarettes communicated the harms of smoking to adolescents, particularly those with written messages and images, and were considered to be embarrassing and off-putting. As such, there is value in considering further measures beyond standardised packaging, such as dissuasive cigarettes, that have the ability to communicate the health warning messages to the point of consumption.

Given that there remains a lack of quantitative consumer research post-standardised packaging in the UK, in particular, with young people (Moodie et al. 2019), Chapter Six addresses this gap by presenting findings on perceptions of standardised packaging from the cross-sectional survey with adolescents and what association (if any) variation's in pack structure has with smoking susceptibility. Chapter Seven builds on the findings in this chapter on dissuasive cigarettes by presenting the quantitative findings on adolescent's reactions to dissuasive cigarettes and their trial intentions. Given that findings in this chapter highlight that adolescent engage with certain brand variant names, there is value in exploring the concept of replacing brand variant name with a number, as proposed in Turkey (Mucan and Moodie. 2018). The concept of replacing brand variant names with a number with adolescents is explored in Chapter Eight.

Chapter Six: Adolescent never-smokers' reactions to standardised cigarette packaging varying in structure, and the association with smoking susceptibility

This chapter is based on a paper published in *Nicotine & Tobacco Research*:

Mitchell, D., Critchlow, N., Moodie, C. and Bauld, L. (2020) Adolescents' reactions to standardised cigarette packaging, and the association with smoking susceptibility: A post-implementation cross-sectional survey in Scotland. *Nicotine & Tobacco Research*. doi: 10.1093/ntr/ntaa109

6.1 Introduction

This chapter builds on the initial findings on how adolescents react to standardised packaging, reported in the focus group findings in Chapter Five, by quantifying reactions and examining to what extent (if at all) reactions to packs that vary in structural design are associated with smoking susceptibility. This chapter begins by providing a brief background summarising the global evidence for standardised packaging and the important gaps in understanding (6.2), before outlining the research questions relevant to the findings in this chapter (6.3). Focus is then given to summarising the methods (6.4), response exclusion criteria and data cleaning (6.5), the final sample used for analysis (6.6), and the techniques analysis used (6.7). The results are then presented (6.8), including the sample characteristics (6.8.1), reactions to the standardised cigarette packs (6.8.2), whether reactions vary based on different structural designs (6.8.3), whether participants selected a pack or not (6.8.4), and what association (if any) there is between reactions to the cigarette packs and smoking susceptibility (6.8.5). The findings are then drawn together in the discussion (6.9), as well as implications for tobacco control policy (6.10). Finally, the study limitations (6.11) and conclusions (6.12) will be provided.

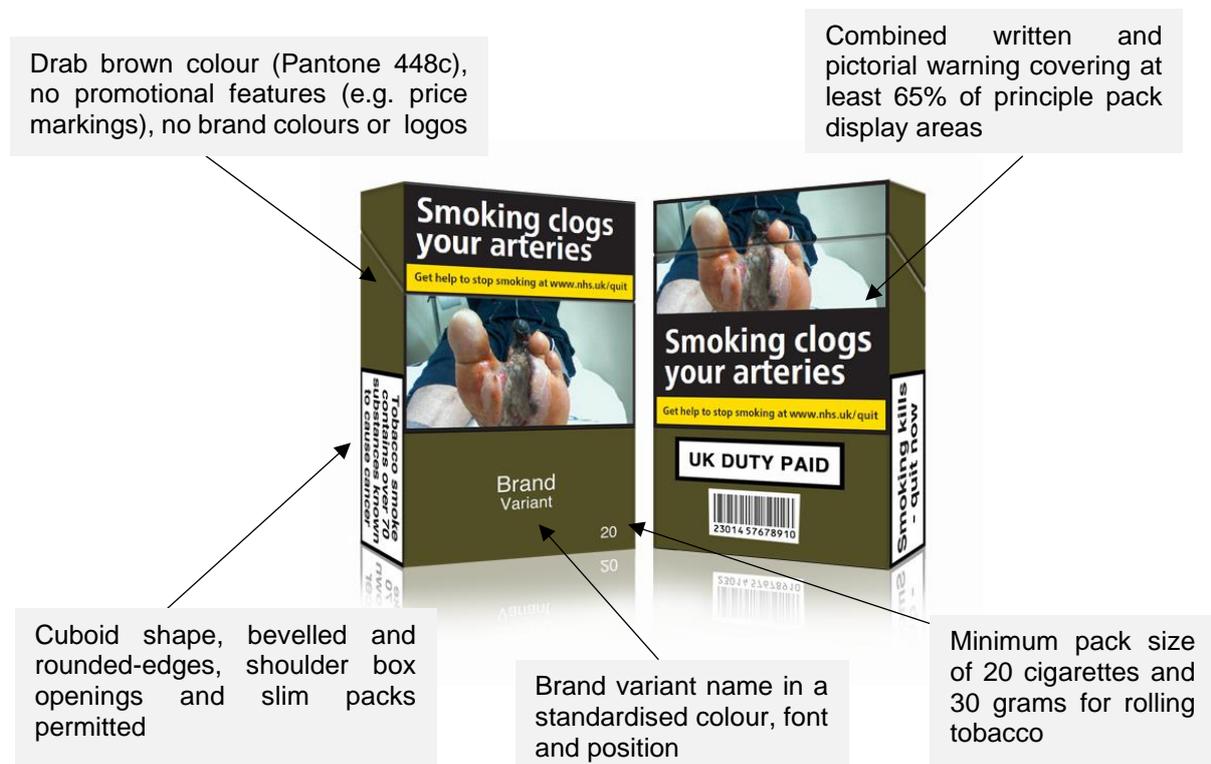
6.2 Background and rationale

A full overview on standardised packaging literature and evidence is provided in Chapter Two and briefly in Chapter Five (see 5.2.1). In summary, studies examining the real-world impact of standardised packaging have reported reduced positive appraisal of packs, increased salience of health warnings, reduced display of cigarette packaging in public spaces, and increased weekly calls to a quit line (Aleyan et al. 2020; Brennan et al. 2018; Wakefield et al. 2013; Wakefield et al. 2014; Wakefield et al. 2015; Young et al. 2014; Zacher et al. 2014; Zacher et al. 2015). However, although the term ‘standardised packaging’ is often used, the designs implemented across countries are not homogenous and some jurisdictions still permit certain variations in pack structure, see figure 6.1 for the key requirements in the UK. In the UK, for example, cigarette packaging is still permitted to use different edge types such as bevelled and rounded-edges, slimmer pack formats and shoulder box opening methods, unlike in Australia and New Zealand where only straight-edged and a flip-top lid are permitted (Moodie et al. 2018). Research has demonstrated that tobacco company use of pack structure to differentiate products does impact on consumer perceptions, with packs that diverge from the ‘regular’ straight-edged flip-top lid style considered appealing, stylish and classy (Borland et al. 2013; Kotnowski and Hammond 2013; Moodie and Ford 2011).

Reducing youth appeal is a key outcome for standardised packaging legislation in both the UK and elsewhere (McNeill et al. 2017; The Scottish Government 2015; Public Health England 2016b). To date, however, there has been limited quantitative research examining the effects on adolescents following full-implementation. Where research does exist, the results corroborate the trends observed among adult consumers. In Australia, for example, longitudinal and cross-sectional research has found that standardised packaging reduced the appeal of smoking, increased perceptions of harm, and deterred young people that had tried smoking from doing so again (Dunlop et al. 2017; White et al. 2015; White et al. 2019). In France, standardised packaging was reported to have increased harm perceptions, reduced

the acceptability of smoking, and decreased the likelihood of smoking experimentation among adolescents (El-Khoury et al. 2019a).

Figure 6.1 Standardised packaging requirements in the UK



(ASH n.d.; Department of Health 2016)

The focus group research with 16-17 year olds presented in Chapter Five and findings from the only other published qualitative study (MacGregor et al. 2020), also support these conclusions. Specifically, the studies found that awareness of standardised packaging was fairly high among young people. The studies also highlight that standardised packs were considered embarrassing, unappealing and off-putting and the health warnings were deemed salient, albeit reactions were less negative for standardised packs that had variations in structure. For example, adolescents viewed the slim standardised packs to be discrete and potentially less harmful, and shoulder box pack cool and different. In this chapter, findings from Chapter Five are extended by exploring reactions to standardised packaging on a range

of attitudinal measures (e.g. appeal, style) with smoking susceptibility as a key outcome measure.

6.3 The current study

The primary aim of this chapter is to extend the findings reported in Chapter Five, the focus group research, using a larger and more diverse sample of never-smoking adolescents in Scotland. The secondary aims are to assess whether reactions differ towards standardised packs that vary in structure (vs the 'regular' pack design) and to examine to what extent (if at all) reactions to packs with varying structural features are associated with increased susceptibility. This chapter extends existing understanding by examining reactions among adolescents in a market where standardised packaging is mandatory, yet structural variations are permitted, thus providing important ecological insight into the likely consumer impact in the UK. It also extends understanding by examining associations between reactions to the new pack designs and susceptibility among never-smoking adolescents, an important step given that preventing uptake is a key target goal for the legislation (The Scottish Government 2015; Public Health England 2016b). The chapter addresses RQ 2 and Hypotheses 1-5 (summarised alongside the results in Table 6.5 at the end of the chapter).

6.4 Methods

As with Study One, in this chapter, greater detail on the methods used for Study Two are provided to enable straightforward interpretation of the study design and findings.

6.4.1 Justification for study design

Study Two used a cross-sectional self-report survey to empirically examine the concepts examined during the Study One focus groups with a broader range of adolescents ages 12-17 years. Specifically, this survey aimed to examine: (1) adolescent's reactions to the new standardised packaging designs, including those with varied structural features; (2) to what

extent reactions to the standardised packs are associated with susceptibility to smoke; (3) adolescent reactions to a variety of dissuasive cigarette designs; and (4) how the dissuasive cigarette designs influence trial intentions. By doing so, this study responds to RQs 1-3 and hypotheses 1-10.

Research exploring reactions to cigarette packaging and cigarettes have used various quantitative methods, with the three major paradigms being experimental, longitudinal, and cross-sectional research. In experimental research, the independent variables are intentionally manipulated by the investigators in a controlled environment to assess whether changes effect a dependent (outcome) variable (Ruane, 2016; Saunders et al. 2016). A core strength of experimental designs is that they provide the ability to examine cause and effect and are able to do so while controlling for confounding or extraneous influence (Ross 2012). For example, experimental research has used eye-tracking technology to explore the attention paid to health warnings on fully-branded and standardised packaging (Maynard et al. 2013; Munafò et al. 2011) or has explored reactions to a combination of different packaging features, such as warning size or pack colour (Hammond et al. 2013). However, experiments are often costly and a large sample is often required for each condition to facilitate robust analyses (Coolican 2013; Walker 2005). An experimental design was also deemed challenging to implement and adequately control within a school environment, and was therefore not practical for this recruitment approach.

In this study, a cross-sectional self-report survey was used. A cross-sectional survey captures data from participants at one-time point, as opposed to following each participant up over several time points for a longitudinal survey (Saunders et al. 2016). Although a longitudinal approach would have been beneficial, and allowed any change in attitudes over a certain period to be explored, the PhD provided limited monetary resources and time to implement such a design (Coolican 2013). In addition, given the age of the target sample it would have been difficult to obtain the same participants from secondary schools for a longitudinal study,

with pupils potentially moving school or having finished their secondary education in the course of the study. A longitudinal design was also not required to generate data sufficient to answering the research questions (e.g. reactions to the new standardised packaging designs or dissuasive cigarettes and between group comparisons), as these could be adequately examined using data collected from one-time point.

A cross-sectional design was used for several reasons. First, such designs are commonly used in public health research with adolescents, including for tobacco control studies (Ford et al. 2013b; Lund and Scheffels 2018; Moodie et al. 2011). Second, cross-sectional designs are generally inexpensive and less time-consuming than a longitudinal design (Coolican 2013) and therefore a better fit for PhD research with limited recourses and timeframe. Third, national health surveys conducted with young people in Scotland have used a cross-sectional design, including the Scottish Schools Adolescent Lifestyle and Substance use survey (SALSUS) (The Scottish Government 2019) and the Health Behaviour in School-aged Children (HBSC) survey conducted every four years across Europe and North America (WHO Europe 2020).

There are, however, some limitations to cross-sectional studies. For example, they are only able to provide a 'snapshot' of views and opinions as opposed to how these change over time as in the case of longitudinal designs (Levin 2006). It is possible that adolescents' reactions to the standardised packaging designs may change over time (e.g. they become desensitised to the new designs) or that long-term follow up would be required to capture the real-world effect of dissuasive cigarettes (if implemented). A further limitation of a cross-sectional design is non-response bias, where the opinions of participants that took part in the study may differ from those that did not take part (Sedgwick 2014). It is also important to note that cross-sectional designs are also unable to show a causal relationship between variables, and reverse causality is possible (Levin 2006). For example, while the data may show that negative reactions towards standardised packaging are associated with reduced susceptibility to start

smoking, this could either be because the pack causes the reduced susceptibility or those who are already non-susceptible are less likely to find packs attractive in the first place.

6.4.2 Recruitment and justification for sample focus

Both Study One and Study Two were recruited together and conducted concurrently, therefore, the same sample approach was used, convenience sampling (5.4.2).

A self-report cross-sectional survey was conducted with 12-17 year-old never-smokers in secondary schools in Scotland ($n=507$). This analyses focuses on never-smokers only, for two reasons. First, one of the key goals of the legislation as highlighted previously (6.2) is prevention. It is therefore important to understand how young people who have never smoked respond to standardised packaging. Second, focusing on never-smokers and susceptibility to smoke is consistent with research conducted prior to standardised packaging which helped to inform the policy (Ford et al. 2013b).

Participants were recruited from secondary schools in three locations in Scotland (Stirlingshire, Edinburgh and South Lanarkshire). According to the Scottish Index of Multiple Deprivation (SIMD) 2016, a quantitative measure of deprivation that takes into account a variety of indicators relevant to an area (e.g. income, employment, education), both schools in Edinburgh and Stirling were in the 10% of the least deprived areas in Scotland, whereas the school in South Lanarkshire was in the most deprived 10% (SIMD 2020). Data were collected November 2017 (six months after standardised packaging became mandatory) to November 2018 (18 months after standardised packaging became mandatory).

Approval was sought from local educational authorities and, once granted, schools in their jurisdiction were contacted by letter or email, and followed up by phone. In the three schools that agreed to take part, participants were informed about the study aims by the PhD candidate or a designated teacher, and provided with participant and parental information sheets, parent

opt-out forms (for parents to complete if they did not want their child involved), and data privacy notices. Participants completed the survey during designated class time and under exam-type conditions (i.e. individually, in silence, and without conferring with peers). The average completion time of the online survey was between 15 and 20 minutes; data were not available to assess the completion time for the paper version of the surveys, but there is no reason to believe it would differ. Schools were given the option for students to complete either an online or physical version of the survey which were identical in content and question order. All participants were able to enter a ballot to win a computer tablet in return for participating.

6.4.3 Mode of response

Questionnaires can be administered using several approaches, for example interview administered and self-completion by the participant. Interviewer administered questionnaires benefit from participants having the opportunity to clarify anything that they do not understand and controlled delivery of the research materials (e.g. no missed questions and ensuring participants engage with all stimuli). An interview administered approach is employed in the long-running YTPS survey (Ford et al. 2013b). Drawbacks of this approach, however, are that participants may feel uncomfortable answering questions on a sensitive topic area with an interviewer present (Harris 2011; Phellas et al. 2011) and there are cost and time implications to completing a large number of interviews. These latter two limitations meant this approach was unfeasible in this PhD studentship.

In this study, a self-completion questionnaire was employed for several reasons. First, self-completion questionnaires offer participants greater levels of privacy, which may increase the possibility of honest answers and easing any discomfort when completing the questionnaire (Harris 2011). This is particularly important given the research focuses on the sensitive topic of smoking or because participants may have felt uncomfortable expressing opinions on tobacco-related stimuli if they felt their views contrast with peers. Using a self-completion approach also enabled the simultaneous collection of a large number of responses, which

reduced the burden on both the PhD candidate and the schools and provided an inexpensive and efficient means of data collection. Limitations of a self-completion questionnaire include non-responses to questions because participants have limited opportunity to clarify things they do not understand (e.g. phrasing or mode of respond) and the potential of nonsensical or exaggerated responses (Harris 2011).

The survey was initially designed to be completed in paper format. Latterly, an online version was created in response to a request from a participating school, because certain year groups had access to computers in the class time that the survey would likely be completed and, therefore, an online version was deemed more practical and less burdensome. To create the online survey, Bristol Online Surveys (BOS) was used, with the online version identical to the paper survey. Participants had to read the information and consent page and select 'Yes' to be in a position to complete the survey, should they agree to do so. The information provided was the same as the consent form attached to the paper survey. Should participants have selected 'No' to consent, they were directed to an exit message and asked to inform their teacher that they no longer wished to participate. Of the three schools that participated in Study Two, one used paper only questionnaires (prior to the online version being developed), one used the online version only and one used both the online and paper version.

There are limitations to each mode of response. Regarding a paper version, participants can easily skip questions or entire sections (e.g. missed pages), not tick boxes clearly, or tick multiple boxes on the same row for scale questions, thus making it difficult to discern their actual response. There is also the risk of participants not completing the consent form properly. Paper surveys also require laborious and time-consuming data entry, which can also introduce errors during the input process. Concerning an online questionnaire, limitations include that this mode of response may not be the most practical for all schools where young people do not have a great deal of access to computers, or may be hampered by varying degrees of computer literacy across age groups or technical problems during delivery (e.g.

web pages not loading). While participants may also not take an online survey seriously by selecting boxes at random, settings on BOS allow you to permit only one box to be ticked per row for scaled questions and reminders for when questions are seemingly skipped. Another key advantage to online completion, is that it avoids the need for time consuming data entry, as responses can be downloaded quickly and data labels and coding pre-defined.

6.4.4 Measures and stimuli

6.4.4a Demographics

Gender, age (coded: 12-13 years, 14-15 years, 16-17 years), and ethnicity (coded: White British vs. Other) were measured at the start of the survey. The Family Affluence Scale measured socioeconomic status (SES), as per previous school-based health surveys in Scotland (Currie et al. 2008). In the scale, participants self-reported whether they have their own bedroom (*0=No, Yes=1*); how many vehicles their family own (*0=None–2=Two or more*); how many computers their family own (*0=None–3=More than two*); and how many times they have travelled on holiday with their family in the last 12 months (*0=Not all–3=More than twice*). Aggregate scores were divided into categories of low (0-2), medium (3-5), and high SES (6-9) (Boyce et al. 2006).

6.4.4.b Smoking status

Smoking status was assessed through an established question from previous tobacco control research with adolescents in the UK (Moodie et al. 2011). Participants were provided with five statements about prior smoking experience and asked to select which best described them: (1) *'I have never smoked, not even a puff or two'*; (2) *'I have only ever smoked once or twice but not anymore'*; (3) *'I smoke at least once a month'*; (4) *'I usually smoke between one and six cigarettes a week'*; and (5) *'I smoke more than six cigarettes a week'*. Participants who selected anything other than the first option were categorised as *'ever-smokers'*. Those who selected the first option were classed as *'never-smokers'*. Prior to reporting smoking status, participants were prompted with a statement which clarified that the survey was asking about traditional

combustible cigarettes (either factory made or hand-rolling cigarettes lit with a flame), not electronic cigarettes of vaping devices.

6.4.4.c Smoking susceptibility

Three items were used to identify whether never-smokers were susceptible to smoke: (1) '*If one of your friends offered you a cigarette would you smoke it?*'; (2) '*Do you think you will smoke a cigarette at any point in the next year?*'; and (3) '*Do you think you will be smoking by the time you are 18?*' (All three measures were scored on a four-point Likert scale (1=*Definitely not* to 4=*Definitely yes*). Participants who selected any option other than '*Definitely not*' for any of the three items were categorised as susceptible. All other participants were categorised as non-susceptible (Ford et al. 2013b; MacKintosh et al. 2012).

6.4.4.d Cigarette pack stimuli

Participants were exposed to images of four standardised cigarette packs; a 'regular' straight-edged flip-top pack, a pack with bevelled-edges a slim pack, and a shoulder box (Figure 6.2). These designs were deliberately chosen to mirror those considered in the focus group research (Chapter Five). The regular straight-edged pack, bevelled-edge pack, and slim pack were purchased in the UK. The shoulder box, a design that is permitted in the UK legislation but was not knowingly sold at the time of the study, was sourced from France. All cigarette packs were displayed to participants in the same order (in both the online and physical copy of the survey) (Figure 6.2). For the 'regular', bevelled-edge, and slim pack, participants were shown both a front-facing image of the pack and a 'side angle' image that ensured the unique structural features (or lack of) were visible. For the shoulder box pack, participants were shown one image that emphasised the unique opening style.

All four packs carried the same warnings, and these warnings were visible in all images of the packs displayed to the participants. The warning on the primary surfaces of the pack, about damage to teeth and gums, was selected because perceived loss of attractiveness is a

message suggested as being resonant among the target sample (Hammond 2011). For the shoulder box pack sourced from France, translated warnings in English were digitally imposed on photographed images for consistency and to avoid participant confusion over language variation. The findings in Chapter Five highlight that the brand variant name on standardised packaging can also influence adolescent’s reactions to the packs. To reduce this confounding influence, brand variant names on each pack were digitally removed and replaced these with the dummy text ‘Brand Name, Variant Name’.

Figure 6.2 Standardised cigarette packs varying in structure (Pack 1: ‘regular’ straight-edge pack, Pack 2: Bevelled-edged pack, Pack 3: Slim pack, Pack 4: Shoulder box)



6.4.4.e Reactions to the cigarette packs

Participant’s reactions to the four standardised packs were measured using eight items. The items were divided into three sections and are based on previous research exploring both adolescent never and ever-smoker’s reactions to fully-branded and standardised cigarette packaging (Ford et al. 2013b; Moodie et al. 2011). Participants were asked ‘*What do you think about each of these packs?*’ with scales for: (1) Unattractive/Attractive; (2) Cool/Uncool; and

(3) Cheap/Expensive. Participants were then asked '*What do you think the person that smokes each pack would be like?*' with scales for: (1) Unfashionable/Fashionable; (2) Unpopular/Popular; and (3) Interesting/Boring. Finally, participants were asked '*How harmful to your health do you think that the cigarettes in each pack would be, if at all?*' and '*To what extent, if at all, does each pack put you off smoking?*' (referred to as 'off-putting' henceforth). Responses to all eight items were provided on five-point scales (e.g. 1=*Unattractive* to 5=*Attractive*), with a separate rating for each pack. Prior to analysis, the measures of coolness and interest were reverse coded to ensure that a higher score was indicative of a positive reaction.

6.4.4.f Pack selection

Participants were asked '*If you were to pick one of the packs, which one would you pick?*' and given the option to select one of the four packs or '*none of these packs*'. This mirrors choice tasks used in previous packaging research (Hammond et al. 2011; Hammond et al. 2013).

6.4.4.g Family and peer smoking

Family and peer smoking, factors associated with smoking among adolescents (Ford et al. 2013b; Moodie et al. 2011), were measured as covariates to help contextualise any association between reactions to the cigarette packs and susceptibility. Participants were asked '*Does anyone in your household or peer group smoke? You can tick more than one box*'. Options were provided for: (1) Mother; (2) Father; (3) Guardian(s); (4) Brother(s) or Sister(s); and (5) Friends. For each group, a dummy code was created (e.g. 0=*Friends do not smoke*; 1=*Friends do smoke*). For the analysis, mother, father, and guardian smoking were combined to a single parental/guardian variable (1=*Yes*, 0=*No*).

6.4.5 Ethical considerations

Ethical approval from the university and a PVG disclosure were obtained, as discussed Chapter Five (5.5), prior to recruitment for Study Two.

Study Two presented ethical considerations over and above those discussed for Study One (5.5). Study Two included participants under the age of 16. As in study one, wither the researcher or designated teacher recruited participants, teachers again, were provided with information (Appendix 11). Participants were also provided with information sheets about the study and given at least a week to decide if they wished to be involved (Appendix 12). For participants under the age of 16, parental consent is required. Considering the minimal risk to participants in the study, an opt-out approach was selected. Parents were provided with an information sheet about the study and an opt-out form, to be returned one week later if they did not wish their child to complete the survey (Appendix 13). Willing participants were informed that the survey was confidential, anonymous and voluntary via the participant information sheet and consent form and explicit consent to take part in the study was obtained (Appendix 14). Following completion of the questionnaire participants also received the debrief leaflet detailing the harms of smoking and providing sources of advice and support (e.g. Young Scot and NHS). There was, however, one school that requested debriefs not be provided due to the litter that would likely be caused, and they provided reassurance that they already provide this information to their students. Finally, as in Study One, a privacy notice was given to participants that took part in the study after the new guidance came into effect (May 2018) (Appendix 15).

6.5 Responses exclusion and data cleaning

There were several steps taken to identify any questionnaires that had to be excluded from the study, with this followed by data cleaning. First, the paper questionnaires were checked to identify any that should be excluded. Reasons for exclusion included: (1) it was clear a questionnaire had not been taken seriously, for example illegible responses, multiple boxes ticked for scales and scores through scales; (2) at least half of the questionnaire was

incomplete, therefore missing at least one of the key measures; and (3) if consent forms had not been completed at all or that participants had stated 'no' to taking part or to any other statement (e.g. that the study had been explained to them). The final sample based on these criteria is detailed below (6.7).

Second, a new version of the questionnaire was copied on BOS, named 'paper survey input'. All paper questionnaires were then entered to replicate those completed online, ensuring both datasets would be identical and to make downloading and managing the two datasets more straightforward. Once both data sets were complete, they were downloaded and merged. When downloading the datasets, the time of completion and unique responses IDs were also included, thus ensuring that the surveys input manually by the researcher could be distinguished from those completed by participants in school, and if any cases were removed the response ID could be used within data logs kept.

Third, all variables were re-labelled to contain the information needed to easily and accurately identify what each variable was. For example, when extracting the data directly from BOS, all responses have short and simple labels using only the question numbers (e.g. Q1, Q2, Q3 etc.), with no details on what the variable pertains to (e.g. gender, age, SES etc.). Once variables had been relabelled, questions in the survey that had been reverse coded were recoded (e.g. perceptions of coolness and stylishness of standardised packaging) and a number of variables recoded into groups (smoking status, susceptibility and SES). For example, composite scores were computed for SES and susceptibility scores and then a separate binary (dummy) variable created for the analyses (e.g. non-susceptible and susceptible). Finally, descriptive statistics were used to examine the extent of missing data on each question. Throughout the analyses, missing data are excluded on a case-by-case basis, rather than being removed from all stages of the analysis.

6.6 Final sample used for analysis

A total of 686 responses were collected. Of this 92 cases were excluded, bringing the final sample used for analysis to $n=594$. The reasons for exclusion and the number of cases are as follows:

- $n=47$ cases were excluded due to having invalid consent (e.g. consent form was not completed or participant had explicitly said 'no' to any of the statements).
- $n=24$ cases were excluded due to less than half of the questions being incomplete, or because the participant had provided nonsensical responses (e.g. lines through entire questions and clear indication of not being taken seriously).
- $n=2$ cases were excluded at the data entry phase by accident, but should have been included. These cases were identified on checking the data in response to reviewer comments. These were not added back into the sample as all analysis had been conducted.
- $n=19$ cases were excluded for being out with the age range (e.g. 11 and 18 years)

6.7 Analysis

In addition to the surveys excluded based on the criteria discussed previously, a further 12 cases were excluded for missing data on smoking status, and 75 participants that were categorised as ever-smokers were excluded, given that the analysis in this chapter focused on never-smokers only. This resulted in a sample of 507 never-smokers for analysis.

Data were analysed using SPSS version 23 (Chicago, SPSS Inc). Descriptive statistics examined demographic variables, family and peer smoking, susceptibility, and mean scores for each cigarette pack on the eight reaction measures. As the Likert scale data were ordinal, Wilcoxon Signed Rank tests examined within-group differences in reactions to each of the cigarettes packs. Within-group tests were conducted across all reaction measures and for all pack combinations (e.g. attractiveness reactions for the 'regular' straight-edge pack vs.

bevelled-edge pack). A Bonferroni correction was applied to the critical value to account for the six multiple comparisons (e.g. $p=0.008$). Frequencies examined the proportion of participants who selected one of the four cigarette packs versus those who did not select any pack. Pearson Chi-square tests examined between-group differences for whether any of the four packs were selected (versus none of the packs) by age, gender, ethnicity, SES, and susceptibility. Given that only a small number of participants were categorised as low SES, the medium and low SES categories were combined and compared to 'high'. These between-group comparisons were chosen based on three factors. First, previous packaging research has shown that reactions to pack designs may vary by demographics, for example young female never-smokers have shown a preference for slim cigarette packs (Ford et al. 2013a; Ford et al 2013b). Second, it is known that smoking rates differ by demography, for example older adolescents have a high smoking prevalence than younger age groups and males have a higher smoking rate than females (SALSUS 2019a). It is therefore plausible that reactions may be more positive among demographics with a higher smoking prevalence and vice versa. Third, key demographics variables such as ethnicity, have been under-explored in existing tobacco packaging research in the UK (Ford 2013a; Moodie, Angus and Stead 2019; Moodie, Angus and Stead 2021). As the proportion of the Scottish population from minority ethnic backgrounds continues to grow (Scotland Census 2021) it is important that they are adequately represented and their data analysed in a disaggregated manner in research evaluating the impact of existing or potential tobacco control policies.

Binary logistic regression models were conducted with susceptibility as the main outcome variable (*Non-susceptible/Susceptible*). Four separate regression models were conducted, with each focusing on one of the four cigarette pack designs (regular, bevelled, slim, and shoulder). In each regression model, the key independent variables were the eight reaction measures for that pack (e.g. attractiveness for the bevelled-edge pack). Previous research has reduced the reaction items into subscales, such as pack receptivity and pack appraisal (Ford et al. 2013b). This approach was considered here, however a preliminary series of factor

analyses found that the eight reaction items did not reduce into subscales that had meaningful interpretation (i.e. no single thematic consistency across the four pack designs) and, of the subscales identified, there was limited internal consistency (Cronbach's Alpha <0.7). Consequently, in this study each of the eight reactions measures are included individually in the regression models, a method that does have the benefit of providing finer grain insight in to what aspects of pack reactions are associated with susceptibility.

To compute the regressions, a series of binary variables were created from the eight reaction scale measures for each pack to provide meaningful interpretation in the logistic regression models. As the majority of scores for the reaction items were towards the negative end of the scale (see Table 6.2), binary variables were computed based on whether a participant reported a negative reaction (i.e. scores 1-2) or not (scores 3-5). For example, in practice this meant that participants were categorised as those who considered a pack unattractive versus those who did not (i.e. either neutral or positive reaction). This was preferred to coding whether a participant had a positive reaction versus not (i.e. neutral and negative) for two reasons. First, standardised packaging intends to elicit negative reactions among young people, and therefore this approach ensured that negative reactions were in an exclusive category (i.e. not grouped with neutral reactions). Second, as there was only a small number of participants who had indicated positive reactions on any reaction measure for any of the four packs (see Table 6.2), these were grouped with the neutral scores (i.e. the middle point of the scale) to ensure appropriate category sizes for analysis.

In earlier stages of each regression model, first the demographic information was added (e.g. age, gender, ethnicity, and SES) and information on parental/guardian, peer, and sibling smoking. For all variables with two categories, simple contrast comparisons were used (e.g. *0=Peers do not smoke vs. 1=Peers do smoke*); reference categories are reported in the results (e.g. see Table 6.4). For age, the difference contrast function enabled comparison of each

increasing category relative to the combined previous categories (e.g. 14–15 years old vs. 12–13 years and then 16–17 year olds vs. combined 12–15-year-old categories).

All covariates and independent variables were entered in the model using the forced entry method. This resulted in a single main effects model for each pack design which examined the associations between all pack reactions (entered individually) and susceptibility, after controlling for key demographics and interpersonal factors known to be correlated with smoking behaviour among young people (e.g. parental and peer smoking). Reporting the full main effects models ensured consistency and comparability with existing tobacco packaging research with adolescents in the UK, which also control for similar covariates (Ford et al. 2013b; Moodie et al. 2011).

6.8 Results

6.8.1 Sample characteristics and smoking susceptibility

Accounting for missing data on gender ($n=1$), ethnicity ($n=5$), SES ($n=11$), and susceptibility ($n=2$), the final sample used in analysis is presented in Table 6.1.

Table 6.1 Sample demography

Variable	%	<i>n</i>
Age		
12-13 years	39	195
14-15 years	36	180
16-17 years	26	132
Gender		
Female	53	268
Male	47	238
SES		
Low and medium	24	118
High	76	378
Ethnicity		
Other/prefer not to say	18	91
White British	82	411
Susceptibility		
Non-susceptible	70	353
Susceptible	30	152

6.8.2 Reactions to the four cigarette packs

Reactions for the four packs were consistently towards the negative end of each scale for all eight items (response items 1 or 2 on the scale) (Table 6.2). Although most reactions were negative, Wilcoxon Signed Rank tests found that reactions to the shoulder box were significantly less negative compared to the regular pack on perceived attractiveness ($p < 0.001$), cost ($p < 0.001$), fashion ($p < 0.001$), and popularity ($p = 0.006$). After accounting for the Bonferroni correction, there were no differences in reactions between the standard pack versus either the bevelled-edge and slim pack.

6.8.3 Within-group reactions to cigarette packs with structural variations

Compared to the slim pack, Wilcoxon Signed-Rank tests found that reactions to the shoulder box were significantly less negative on perceived attractiveness ($p < 0.001$), cost ($p < 0.001$), fashion ($p < 0.001$), interest ($p = 0.004$), and popularity ($p < 0.001$) (Table 6.2). Compared to the pack with bevelled-edges, reactions for the shoulder box were significantly less negative for perceived attractiveness, cost, and fashion (all $p < 0.001$). Finally, the slim pack was perceived to be significantly cheaper than the pack with bevelled-edges ($p < 0.001$).

6.8.4 Selecting a cigarette pack

When asked to indicate which of the four packs they would select (if any), after accounting for missing data on this item ($n = 19$), only 13% of participants said they would select one of the four packs, and the remaining 87% ($n = 426$) said they would not select any (Table 6.3). Pearson Chi-square tests found no significant differences in whether participants selected one of the four packs versus not by gender ($p = 0.151$), SES ($p = 0.407$), age ($p = 0.081$), and ethnicity ($p = 0.733$); however, those categorised as susceptible were significantly more likely to select a pack compared to those who were non-susceptible (25% vs. 7%), $\chi^2(1) = 29.70$, $p < 0.001$. Of those who did select a pack ($n = 62$), most selected the shoulder box (55%), followed by the bevelled-edge pack (19%), slim pack (15%), and the regular pack (11%).

6.8.5 Association between reactions to cigarette packs and smoking susceptibility

Binary logistic regression models examined what association, if any, there was between individual reactions to each cigarette pack and susceptibility (Table 6.4 and Table 6.5). After controlling for demographics and family and peer smoking, participants who did not think each of the four packs were off-putting were significantly more likely to be susceptible than those who did find them off-putting (regular pack [*Adjusted Odds Ratio* [OR_{Adj}]=3.22, $p=0.006$], bevelled-edge pack [$OR_{Adj}=3.22$, $p=0.006$], slim pack [$OR_{Adj}=3.69$, $p=0.002$], shoulder box pack [$OR_{Adj}=2.73$, $p=0.015$]); albeit the number of participants who did not think the packs were off-putting was small (range: $n=33-55$). There was no association for the other packs on any other of the reaction measures. In all models, parental or guardian smoking was a predictor of susceptibility (regular pack [$OR_{Adj}=1.92$, $p=0.037$], bevelled-edge pack [$OR_{Adj}=1.92$, $p=0.036$]), slim pack [$OR_{Adj}=2.12$, $p=0.016$], shoulder box [$OR_{Adj}=2.15$, $p=0.016$]). There was no association for other covariates.

Table 6.2 Reactions towards a ‘regular’ pack with no different structural features and three packs with different structural features, among never-smokers

Reactions	Regular vs. Bevelled ¹			Regular vs. Slim ²			Regular vs. Shoulder ³			Bevelled vs. Slim ⁴			Bevelled vs. Shoulder ⁵			Slim vs. Shoulder ⁶		
	M (SD)	M (SD)	p	M (SD)	M (SD)	p	M (SD)	M (SD)	p	M (SD)	M (SD)	p	M (SD)	M (SD)	p	M (SD)	M (SD)	p
Unattractive(1) Attractive (5)	1.23 (0.75)	1.25 (0.76)	0.248	1.23 (0.75)	1.23 (0.74)	0.922	1.23 (0.75)	1.33 (0.91)	<0.001	1.25 (0.76)	1.23 (0.74)	0.233	1.25 (0.76)	1.33 (0.91)	<0.001	1.23 (0.74)	1.33 (0.91)	<0.001
Uncool(1) Cool(5)	1.46 (1.13)	1.46 (1.11)	0.857	1.46 (1.13)	1.44 (1.08)	0.227	1.46 (1.13)	1.49 (1.13)	0.187	1.46 (1.11)	1.44 (1.08)	0.374	1.46 (1.11)	1.49 (1.13)	0.085	1.44 (1.08)	1.49 (1.13)	0.012
Cheap(1) Expensive(5)	3.19 (1.39)	3.23 (1.32)	0.082	3.19 (1.39)	3.12 (1.37)	0.042	3.19 (1.39)	3.45 (1.31)	<0.001	3.23 (1.32)	3.12 (1.37)	<0.001	3.23 (1.32)	3.45 (1.31)	<0.001	3.12 (1.37)	3.45 (1.31)	<0.001
Unfashionable(1) Fashionable(5)	1.67 (1.05)	1.70 (1.04)	0.047	1.67 (1.05)	1.72 (1.06)	0.071	1.67 (1.05)	1.86 (1.18)	<0.001	1.70 (1.04)	1.72 (1.06)	0.426	1.70 (1.04)	1.86 (1.18)	<0.001	1.72 (1.06)	1.86 (1.18)	<0.001
Boring(1) Interesting(5)	2.35 (1.29)	2.38 (1.28)	0.245	2.35 (1.29)	2.37 (1.26)	0.288	2.35 (1.29)	2.43 (1.30)	0.017	2.38 (1.28)	2.37 (1.26)	0.898	2.38 (1.28)	2.43 (1.30)	0.063	2.37 (1.26)	2.43 (1.30)	0.004
Unpopular(1) Popular(5)	2.42 (1.29)	2.46 (1.28)	0.156	2.42 (1.29)	2.44 (1.26)	0.427	2.42 (1.29)	2.53 (1.31)	0.006	2.46 (1.28)	2.44 (1.26)	0.547	2.46 (1.28)	2.53 (1.31)	0.033	2.44 (1.26)	2.53 (1.31)	<0.001
Harmful(1) Not harmful(5)	1.19 (0.62)	1.20 (0.62)	0.132	1.19 (0.62)	1.21 (0.63)	0.088	1.19 (0.62)	1.22 (0.64)	0.046	1.20 (0.62)	1.21 (0.63)	0.108	1.20 (0.62)	1.22 (0.64)	0.152	1.21 (0.63)	1.22 (0.64)	1.000
Off-putting(1) Not off-putting(5)	1.27 (0.72)	1.27 (0.71)	0.439	1.27 (0.72)	1.28 (0.73)	0.655	1.27 (0.72)	1.30 (0.76)	0.034	1.27 (0.71)	1.28 (0.73)	0.291	1.27 (0.71)	1.30 (0.76)	0.012	1.28 (0.73)	1.30 (0.76)	0.021

Notes: As data were ordinal, pairwise comparisons based on Wilcoxon Signed Rank Test; Means are shown for illustration of scoring on scale Bonferroni correction applied to account for six pairwise comparisons, so critical value $p = 0.008$.
Range of missing data across comparisons: ¹ 1-16; ² 4-17; ³ 3-17; ⁴ 4-19; ⁵ 3-18; ⁶ 5-19

Table 6.3 Proportion of participants (%) who selected one of the four packs (vs. did not any pack)

Variable	Selected one of the four packs		χ^2	<i>p</i>
	%	<i>n</i>		
Overall	13	62	-	-
Age¹			5.04	0.081
12-13 years old	9	16		
14-15 years old	13	23		
16-17 years old	17	23		
Gender²			2.06	0.151
Female	15	39		
Male	10	23		
Socioeconomic status³			0.69	0.407
Low or Medium SES	15	17		
High	12	43		
Ethnicity⁴			0.12	0.733
Other or Prefer not to say	14	12		
White British	13	50		
Susceptibility⁵			29.7	<0.001
Non-susceptible	7	25		
Susceptible	25	37		

Notes:

Cases with missing data on pack selection (*n*=19). Accounting for missing data on demography total cases excluded in each test:

¹Age (*n*=19)

²Gender (*n*=20)

³SES (*n*=29)

⁴Ethnicity (*n*=24)

⁵Susceptibility (*n*=19).

Table 6.4 Logistic regression exploring association between reactions to ‘regular’ and bevelled edges pack and smoking susceptibility

Variables and ref categories	Regular pack ^{1,3}				Bevelled-edge ^{2,4}			
	<i>n</i>	AOR	95% CI	<i>p</i>	<i>n</i>	AOR	95% CI	<i>p</i>
Gender								
Male	214	REF			213	REF		
Female	253	1.16	0.76-1.76	0.492	252	1.13	0.74-1.72	0.567
Age								
12-13 years old	165	REF		0.327	164	REF		0.268
14-15 years old (vs younger)	171	1.43	0.86-2.37	0.167	170	1.50	0.90-2.48	0.119
16-17 years old (vs younger)	131	1.18	0.74-1.88	0.488	131	1.15	0.72-1.84	0.561
SES status								
High	352	REF			352	REF		
Low or medium	115	0.87	0.52-1.44	0.575	113	0.89	0.53-1.48	0.647
Ethnicity								
Other or prefer not to say	82	REF			82	REF		
White British	385	1.54	0.86-2.75	0.148	383	1.48	0.83-2.63	0.181
Parent or guardian smoking								
No	409	REF			407	REF		
Yes	58	1.92	1.04-3.56	0.037	58	1.92	1.04-3.53	0.036
Friend smoking								
No	397	REF			395	REF		
Yes	70	1.04	0.58-1.87	0.894	70	0.98	0.54-1.76	0.938
Sibling smoking								
Yes	451	REF			449	REF		
No	16	0.74	0.24-2.29	0.598	16	0.76	0.24-2.36	0.629
Pack attractiveness								
Negative reaction	436	REF			428	REF		
Neutral or positive	31	1.01	0.40-2.55	0.985	37	1.60	0.69-3.70	0.275
Pack coolness								
Negative reaction	408	REF			410	REF		
Neutral or positive	59	1.92	0.99-3.73	0.054	55	1.17	0.57-2.37	0.675
Pack cost								
Negative reaction	145	REF			136	REF		
Neutral or positive	322	1.08	0.68-1.72	0.752	329	1.10	0.69-1.77	0.688
Pack fashionable								
Negative reaction	363	REF			356	REF		
Neutral or positive	104	1.25	0.72-2.19	0.429	109	1.24	0.73-2.10	0.436
Pack popularity								
Negative reaction	235	REF			234	REF		
Neutral or positive	232	1.15	0.72-1.84	0.571	231	1.17	0.73-1.88	0.506
Pack Interest								
Negative reaction	243	REF			245	REF		
Neutral or positive	224	1.19	0.75-1.89	0.458	220	1.18	0.75-1.87	0.471
Pack harm								
Negative reaction	445	REF			443	REF		
Neutral or positive	22	0.98	0.34-2.83	0.973	22	1.06	0.38-2.98	0.913
Pack off-putting								
Negative reaction	434	REF			432	REF		
Neutral or positive	33	3.22	1.39-7.45	0.006	33	3.22	1.40-7.40	0.006

Notes:

Base = All never smokers; AOR = Adj. Odds Ratio; 95% CI = 95% Confidence Interval

Case excluded due to missing data on one or more items ¹ (*n*=40); ² (*n*=42)

DV = Susceptibility to smoke (0 = Non-susceptible never-smoker, 1 = Susceptible never smoker)

Model summaries for final block:

² Test of coefficients, $\chi^2(16)=36.75, p<0.002$; Hosmer & Lemeshow, $\chi^2(8)=2.53, p = 0.960$, Nagelkerke $R^2=0.107$

⁴ Test of coefficients, $\chi^2(16)=34.37, p<0.005$; Hosmer & Lemeshow, $\chi^2(8)=11.04, p = 0.199$, Nagelkerke $R^2=0.101$

Table 6.5 Logistic regression exploring association between reactions to slim and shoulder box pack and smoking susceptibility

Variables and ref categories	Slim pack ³				Shoulder Box ^{2,4}			
	<i>n</i>	AOR	95% CI	<i>p</i>	<i>n</i>	AOR	95% CI	<i>p</i>
Gender								
Male	210	REF			211	REF		
Female	249	1.13	0.74-1.73	0.572	246	1.09	0.72-1.66	0.688
Age								
12-13 years old	157	REF		0.387	157	REF		0.529
14-15 years old (vs younger)	171	1.41	0.84-2.35	0.190	170	1.34	0.80-2.23	0.262
16-17 years old (vs younger)	131	1.14	0.71-1.82	0.583	130	1.06	0.66-1.70	0.805
SES status								
High	347	REF			345	REF		
Low or medium	112	0.80	0.47-1.34	0.392	112	0.80	0.48-1.34	0.391
Ethnicity								
Other or prefer not to say	80	REF			80	REF		
White British	379	1.47	0.82-2.64	0.191	377	1.50	0.84-2.68	0.174
Parent or guardian smoking								
No	401	REF			400	REF		
Yes	58	2.12	1.15-3.90	0.016	57	2.15	1.15-4.00	0.016
Friend smoking								
No	390	REF			389	REF		
Yes	69	0.99	0.55-1.79	0.976	68	1.07	0.59-1.95	0.813
Sibling smoking								
No	443	REF			411	REF		
Yes	16	0.70	0.22-2.17	0.531	16	0.73	0.23-2.28	0.581
Pack attractiveness								
Negative reaction	431	REF			417	REF		
Neutral or positive	28	1.14	0.46-2.86	0.775	40	1.20	0.55-2.60	0.649
Pack coolness								
Negative reaction	408	REF			396	REF		
Neutral or positive	51	1.80	0.91-3.55	0.089	61	1.68	0.89-3.18	0.108
Pack cost								
Negative reaction	146	REF			101	REF		
Neutral or positive	313	1.16	0.72-1.86	0.539	356	1.03	0.61-1.74	0.920
Pack fashionable								
Negative reaction	352	REF			326	REF		
Neutral or positive	107	1.20	0.69-2.07	0.517	131	1.07	0.63-1.82	0.800
Pack popularity								
Negative reaction	225	REF			216	REF		
Neutral or positive	234	1.14	0.70-1.85	0.608	241	1.05	0.65-1.71	0.836
Pack Interest								
Negative reaction	235	REF			230	REF		
Neutral or positive	224	1.45	0.92-2.29	0.114	227	1.46	0.92-2.30	0.106
Pack harm								
Negative reaction	437	REF			435	REF		
Neutral or positive	22	0.83	0.28-2.41	0.725	22	1.26	0.46-3.50	0.652
Pack off-putting								
Negative reaction	426	REF			422	REF		
Neutral or positive	33	3.70	1.61-8.47	0.002	35	2.73	1.22-6.15	0.015

Notes:

Base = All never smokers; AOR = Adj. Odds Ratio; 95% CI = 95% Confidence Interval

Case excluded due to missing data on one or more items ¹ (*n*=48); ² (*n*=50)

DV = Susceptibility to smoke (0 = Non-susceptible never-smoker, 1 = Susceptible never-smoker)

Model summaries for final block:

² Test of coefficients, $\chi^2(16)=38.83, p<0.001$; Hosmer & Lemeshow, $\chi^2(8)=9.47, p = 0.304$, Nagelkerke $R^2=0.114$

⁴ Test of coefficients, $\chi^2(16)=33.00, p<0.007$; Hosmer & Lemeshow, $\chi^2(8)=8.96, p = 0.346$, Nagelkerke $R^2=0.098$

6.9 Discussion

6.9.1 Summary of findings

This study explored adolescent never-smoker's reactions to four standardised cigarette packs, three of which varied in structural design permitted under the UK's legislation (e.g. bevelled-edged pack, slim pack and shoulder box). Adolescents consistently had negative reactions towards all four packs, thus Hypothesis 1 is accepted (Table 6.6). Compared to the 'regular' cigarette pack with a flip-top lid and straight-edges, the shoulder box pack was rated significantly less negatively on perceived attractiveness, cost, fashion and popularity, but not any another measure. There were no significant differences found for the slim pack and bevelled-edged pack compared to the 'regular' pack, therefore Hypothesis 2 is partially accepted. Although in the selection task, packs varying in structure were more likely to be selected than the 'regular' pack, only susceptibility to smoke was significantly associated with selecting one of the four packs and not on any other demographic variable, as a result Hypothesis 3 is partially accepted. Regarding Hypothesis 4, the regular pack had no association with susceptibility to smoke on any of the reaction measures, except whether the pack was deemed off-putting, therefore this hypothesis is mostly accepted. Finally, there was no association with susceptibility to smoke for any of the packs with different structural designs, apart from whether the bevelled-edged pack, slim pack and shoulder box pack were deemed off-putting, thus Hypothesis 5 is mostly rejected.

Table 6.6. Hypotheses and outcomes for Chapter Six

Chapter hypotheses	Hypotheses outcome
H1: Never-smoking adolescents will have negative reactions towards the standardised cigarette packs introduced in the UK.	Hypothesis accepted: Reactions to the four standardised cigarette packs were consistently towards the negative end of the scales.
H2: Never-smoking adolescents will rate standardised packs that vary in structure (e.g. bevelled edges) less negatively than a straight-edge pack with a flip-top lid ('regular' pack).	Hypothesis partially accepted: Reactions to the shoulder box pack were significantly less negative compared to the 'regular' pack for perceived attractiveness, cost, fashion and popularity, but not on any other reactions measures. There was no difference in reaction to the 'regular' pack versus either the slim pack or bevelled-edge pack.
H3: Attitudes towards standardised packaging will differ by demography and susceptibility among never-smoking adolescents.	Hypothesis partially accepted: In the pack selection task, only susceptibility to smoke was significantly associated with selecting a pack. Among those that did select a pack, most selected the shoulder box pack, which varies in structure.
H4: Reactions to the standardised cigarette pack with a 'regular' design will have no association with susceptibility to smoke among never-smokers.	Hypothesis mostly accepted: The 'regular' pack had no association with smoking susceptibility on all reaction measures, except whether it was deemed off-putting.
H5: Reactions to the standardised cigarette packs with different structural designs (e.g. bevelled edges and slim packs) will have some association with susceptibility to smoke among never-smokers.	Hypothesis mostly rejected: There was no association with susceptibility for any of the packs across any of the reaction measures, except whether they were deemed off-putting.

6.9.2 Study findings in relation to past evidence

The findings are consistent with evaluation research from other countries where standardised packaging has been fully-implemented, such as Australia and France, particularly studies that have reported decreased appeal and reduced susceptibility (Dunlop et al. 2017; White et al. 2015; White et al. 2019; El-Khoury et al. 2019a). The findings are also consistent with evaluation research of the UK's legislation (Aleyan et al. 2020), including some qualitative research with adolescents (MacGregor et al. 2020), which have similarly reported negative reactions to the new designs. The findings also provide empirical support to the focus group results presented in Chapter Five, by quantifying negative reactions across measures of appeal (e.g. attractiveness), user-perceptions (e.g. cool and fashionable), and perceived

negative effects (e.g. off-putting and harmful), and reporting that most adolescents would not select any of the four packs (including the majority of those susceptible to smoke). The results further extend understanding by demonstrating that most reactions to the standardised packs, including those with variations in structure, have no association with susceptibility to smoke; except the minority who did not find any of the packs off-putting. Collectively, these findings suggest that standardised packaging is achieving one of its core aims by reducing appeal among adolescents (McNeill et al. 2017), and will supplement the effect of other tobacco control policies that aim to reduce the visibility and attractiveness of tobacco marketing, such as the point-of-sale display ban (Kuipers et al. 2020; Ford et al. 2020).

Nevertheless, the data do suggest that the variations in pack structure that are still permitted in the UK (and other markets) do somewhat reduce negative reactions to standardised packs. In particular, adolescents rated the shoulder box pack less negatively than the 'regular' pack across half of the reaction measures, and this design was also rated less negatively than the other two packs varying in structure (slim and bevelled-edge). These findings are consistent with research which suggests that cigarette packs that vary in structure and opening method are considered cool, novel, attractive, and expensive by both young and adult consumers (Borland et al. 2013; Ford et al. 2013b; Kotnowski and Hammond 2013; Moodie et al. 2011). This finding is also consistent with the focus groups in Chapter Five, where adolescents viewed the shoulder box to be cool and different. The 'regular' pack was rated most negatively by adolescents on all eight reaction measures. This is the only design permitted in some other countries where standardised packaging has been introduced, such as Australia and New Zealand.

6.10 Implications for tobacco control policy

The findings in this chapter, in addition to those presented in Chapter Five, consistently find that packs varying in structure, in particular the shoulder box design, are rated less negatively than any of the other packs. Although overall reactions to these design were still consistently negative, this suggests that variations in structure do somewhat lessen and diminish the unattractive nature of standardised packaging among adolescents, which undermine a key intended outcome of the UK legislation. The results therefore suggest that further reductions in appeal may have been possible had the UK adopted the same structural restrictions as in other countries (e.g. Australia). Consideration should be given to updating the UK legislation to remove allowance to adopt these designs – and in other markets where these designs are currently permitted (e.g. France) – while countries considering introducing similar legislation should ensure that such designs are not permitted from the outset. Ideally, all cigarette packs would have straight edges and a flip-top lid, as per the original designs implemented in Australia. Further research is required to monitor the use of structural variation, including whether shoulder box designs are introduced to the UK market, and to monitor the impact of such variation in other populations, in particular established adult smokers.

6.11 Study limitations

6.11.1 Study design limitations

Concerning limitations of the study design, it was not possible to establish a causal association between pack reactions and susceptibility due to the cross-sectional nature of the data. Longitudinal research, similar to that conducted in Australia, is required to evaluate the longer-term impact of standardised packaging among both adolescents and adults (Dunlop et al. 2017). Given that the analysis only focused on never-smoking adolescents in Scotland, and the sample was skewed towards those from more affluent SES due to the location of two of the schools recruited; indeed, there were so few participants from the low SES category it was necessary to combine this with medium SES for analysis. Most participants were of high or

medium SES, due to a large proportion of the sample being recruited from one school in an affluent area, and the majority were never-smokers. The Family Affluence Scale (FAS) was used to measure SES as it has been successfully applied in previous national health and behaviour surveys in Scotland (Schnohr et al. 2008) and the brevity and ease of completion makes it highly suitable for self-report surveys completed by young people. It is acknowledged, however, that there are alternative measures of assessing socioeconomic status that likely have greater sensitivity than the FAS. The Scottish Index of Multiple Deprivation, for example, is based on a variety of socioeconomic indicators of an area, such as, income, employment, health, access to services and housing (The Scottish Government 2020). This measure has been used in research examining health behaviours with young people (Critchlow et al. 2019). Using this measure, however, is only possible by obtaining an individual's home postcode, and this was not considered appropriate as asking young people to disclose this may have impacted on their perceived anonymity and may have biased responses. It is also noted that most participants came from a school in an affluent area, a factor driven by the response rate from the schools and councils contacted. As higher smoking prevalence is negatively correlated with level of deprivation (NHS Health Scotland 2019), the current findings therefore may not be representative of adolescents in Scotland who are most susceptible to start smoking.

Exploring to what extent, if at all, these findings generalise across the UK, to adult consumers, to those of lower SES status and among ever-smokers are important questions for future research. Concerning survey delivery, teachers were present, which may have resulted in socially desirable answers. The survey was also completed using two modes (electronic vs. paper), and whether mode of completion had any impact on responses was not explored. Participants were only exposed to images of the packs, and were not exposed to the tactile qualities of the packs (e.g. bevelled-edges). It is possible that other modes of study, such as an in-person discrete choice experiment, may have elicited different responses, albeit the

findings in Chapter Five suggests that reactions are similarly negative even when being able to handle the packs.

Finally, two modes of response were used, a paper and online survey, albeit there were no differences in the measures included, response options, or question ordering. Over half of the sample completed the online survey and the rest completed it on paper. It is possible that there were differences in response based on the mode of completion, although no specific analyses were run to assess this. The rationale for not examining whether there were differences is because recent evidence from SALSUS, a nationally representative school-based survey with adolescents in Scotland which assesses health behaviours (including smoking), reported no significant difference in response based on whether a paper or online survey is completed. The report concluded the findings from both paper and online questionnaires can be analysed and reported together (Scottish Government 2016c). Given these findings and the parallels between SALSUS and this research, in terms of being conducted in Scotland, focusing on adolescent health behaviours, and collecting data in schools, it was assumed differences by mode of response need not be explored further here. It is important to note that the paper has been published and the two modes of data collection were not viewed as problematic for the editorial team or reviewers.

6.11.2 Contextual limitations

There are also contextual limitations. First, the study was conducted across a one-year period post-implementation of standardised packaging, and it is possible that reactions may have varied by point of data collection. For instance, tobacco companies delayed full implementation of standardised packaging until compliance was almost mandatory in May 2017 (Critchlow et al. 2019), and it is therefore plausible that participants in the months closer to implementation may have had a greater reaction when the unattractive designs felt comparatively new, versus those recruited a year later when they may have become more or familiar with, or desensitised to, standardised packs. Furthermore, participants were only

exposed to packs at one-time point when completing the survey, and perceptions may change in a real-world setting after repeated-exposure, or when seeing others (e.g. peers) with these packs. Moreover, purposively selected pictorial warnings were used, and brand variant names also removed. In the real-world, adolescents may react differently to other health warnings and the findings in Chapter Five show that brand variant name does create appeal, even on standardised cigarette packs. As such, future research should consider how these other elements of packaging may impact on reactions to standardised packs. Furthermore, the findings from the survey align with perceptions of the cigarette packs from the focus groups (Chapter Five). In both studies overall reactions to the standardised pack designs were consistently negative, however reactions were less negative for the packs with structures that different from the standard pack. Participants in the focus group, however, also benefited from experiencing the tactile qualities of the different packs, for example being able to feel the bevelled edges, compare the depth of the slim pack versus the standard pack design, and physically open the shoulder box. Doing so was not possible in the survey. Future survey research could include three dimensional (3D) images of standardised packs or embedded videos if online, or in person surveys where data is collected through an interview administered by a market researcher who can show physical examples of the packaging as prompts (Harris 2011). Finally, data were not available to understand how widely available the packs with varied structures are in the UK or what proportion of sales volume they represent.

6.12 Conclusions

In conclusion, never-smoking adolescents in Scotland reacted negatively to standardised packs, with most indicating that they would not select any of these packs, and most reactions having no association with susceptibility. This provides early evidence that standardised packaging is achieving its intended goal among a key target population, and corroborates the qualitative findings reported in Chapter Five. Nevertheless, that the different pack structures permitted in the UK somewhat reduced negative reactions, particularly the shoulder box,

suggests that the legislation should be updated to ensure that pack structure is standardised, as it is in Australia and New Zealand. Nonetheless, while it is promising that the standardised packaging is achieving its goal of reducing the attractiveness of cigarettes, Chapter Five also highlighted that other opportunities exist to extend this effect to the primary packaging and object of consumption, by using dissuasive cigarettes. Using the same cross-sectional survey as presented here, Chapter Seven will now focus on providing empirical evidence of how adolescents react to several dissuasive cigarette designs and the impact on trial intentions.

Chapter Seven: Adolescents' reactions to, and trial intentions for, three dissuasive cigarette designs

The findings in this chapter are based on the following publication:

Mitchell, D., Critchlow, N., Moodie, C. & Bauld, L. (2020) Reactions to, and trial intentions for, three dissuasive cigarette designs: A cross-sectional survey of adolescents in Scotland. *Tobacco Control*. doi: 10.1136/tobaccocontrol-2020-055842

7.1 Introduction

The focus group findings presented in Chapter Five showed that adolescents find dissuasive cigarettes unappealing and off-putting, and that they perceive them to be more harmful than standard cigarette designs. This chapter seeks to quantify these findings by examining reactions to, and trial intentions for, dissuasive cigarettes among adolescents in Scotland. The chapter begins with a brief summary of existing dissuasive cigarettes research (7.2), before outlining the research questions and hypotheses relevant to the findings in this chapter (7.3). Attention then turns to summarising the methods (7.4), ethical considerations (7.5), and analysis techniques used (7.6). The results are then presented, including sample characteristics (7.7.1), how reactions to the dissuasive cigarette compare to reactions to a 'standard' cigarette (7.7.2 and 7.7.3), and trial intentions for the cigarettes (7.7.4). Finally, the discussion summarises the main findings (7.8) how they relate to past evidence, and implications for tobacco control policy. The chapter closes with the key study limitations (7.9) and overall conclusions (7.10).

7.2 Background and rationale

The UK's standardised packaging legislation does place some restrictions on cigarette appearance. Specifically, cigarettes must have an imitation cork or white filter tip and the brand variant name must be positioned near the filter and displayed in a standardised font (UK Government 2015), see Figure 7.1. Tobacco companies, however, have continued to use

unregulated parts of the cigarette to create consumer appeal in a market where standardised packaging is mandatory, for example introducing innovative filters (e.g. cut out stylised designs and recessed filters) and capsule variants (Moodie et al. 2018b); albeit these flavour cigarettes, including capsule cigarettes, were subsequently banned from 20th May 2020 in the UK under the Tobacco and Related Product regulation (UK Government 2016). This is in addition to continued use of other cigarette designs already used pre-standardised packaging, discussed previously, and the continued use of slim cigarettes.

Figure 7.1 Cigarette stick available in the UK



As discussed in Chapter Three, there is growing evidence that cigarettes which feature a written health warning or are an unappealing colour – also known as dissuasive cigarettes – may further reduce the appeal of smoking. Such designs achieve this by both removing the opportunity for tobacco companies to use the cigarette as a promotional tool, as discussed above, and extending the presence of health messaging to the primary packaging and object of consumption. To date, research into dissuasive cigarettes has focused predominately on

two designs. First, several studies have explored cigarettes that are unappealing in colour, with research having focused on different shades of green and yellow (Hoek and Robertson 2015; Hoek et al. 2016; Lund and Scheffels 2018; Moodie et al. 2018a). The second are studies using designs which feature an explicit warning on the cigarette, including those which reference the direct harms of smoking (e.g. minutes of life lost) and the long-term, short-term and social and financial costs of smoking (Hassan and Shiu 2015; Moodie et al. 2017; Drovandi et al. 2018; Drovandi et al. 2019a; Drovandi et al. 2019b; Drovandi et al. 2019c). Further research into dissuasive cigarettes has immediate policy relevance and importance given that the Scottish Government plans to review the evidence base for the measure (The Scottish Government 2018a) and the Canadian Government are considering implementing on-cigarette warnings as part of their tobacco control strategy (Government of Canada 2018; Health Canada 2018).

The findings presented in Chapter Five, the first focus group study, provided new Scotland-specific evidence that dissuasive cigarettes are likely to discourage smoking uptake of among adolescents. Specifically, adolescents aged 16-17 years-old were shown five designs, including a 'standard' cigarette (e.g. imitation cork filter and white paper casing), two different shades of green (e.g. dark green and lighter green), a cigarette featuring the warning 'smoking kills', and a cigarette featuring the message 'toxic' paired with a skull and crossbones image. The key findings were that adolescents consistently perceived the dissuasive designs to be less appealing than the standard cigarette, with the 'toxic' cigarette eliciting the most negative reactions. Specifically, adolescents expressed that the dissuasive cigarettes would cause them embarrassment and put them off smoking, and that the cigarettes were perceived to be more harmful than the current standard designs currently sold in the UK.

7.3 The current study

The primary aim of this chapter is to quantify the findings on reactions to dissuasive cigarettes presented in Chapter Five, the first focus group study, across a larger and diverse sample of adolescents in Scotland (including younger age groups). The secondary aim of this chapter is to empirically test whether reactions vary by either cigarette design (e.g. dissuasive colour vs. written on-cigarette warning) or demography (e.g. whether reactions vary by age or by whether any adolescent is an ever- or never-smoker). By doing so, this chapter extends understanding in two ways. First, it responds to a lack of quantitative evidence examining adolescent reactions to dissuasive cigarettes, with only two studies conducted to date (Lund and Scheffels 2018; Moodie et al. 2017). Second, it presents data in a market where standardised packaging is both mandatory and already affecting adolescent reactions (see Chapter Five and Six). The findings therefore provide an indication of how dissuasive cigarettes may further reduce the appeal of smoking in addition to this existing legislation. The chapter addresses RQ 5 and Hypotheses 5-10 (summarised alongside the results in Table 7.5 at the end of the chapter).

7.4 Methods

Details of the cross-sectional survey are extensively outlined in earlier parts of the thesis. This section therefore only reviews the additional (or core) measures and statistical analyses that are central to this chapter. Please see section 6.4 for a summary of the study design, recruitment, sample and other survey measures.

7.4.1 Design and Recruitment

The rationale and in-depth detail on the design of Study Two and the sampling approach are discussed in Chapter Six (6.4).

A cross-sectional self-report survey was conducted with 12-17 year olds ($n=594$) in secondary schools in three regions of Scotland (Central, East, and South). Data were collected November

2017 to November 2018, covering 6 to 18 months' post-implementation of standardised packaging. For full details of contacting and recruiting schools, and administering the questionnaire, please see section 6.4.1.

7.4.2 Materials

Participants were shown four cigarette designs (Figure 7.2), which mostly mirror those used in the focus groups in Chapter Five. The first cigarette had an imitation cork filter and white cigarette paper, which reflects the 'standard' cigarette design in Scotland. The second cigarette was dark green, consistent with research with adults in Australia and the UK (Hoek and Robertson 2015; Hoek et al. 2016; Moodie et al. 2018a) and with adolescents in Norway (Lund and Scheffels 2018). Although this green design has previously been explored, there has only been one quantitative design capable of obtaining data from larger samples and empirically testing the relationship between reactions and trial intentions with adolescents in Norway (Lund and Scheffels 2018). The third cigarette carried the warning 'Smoking kills' in red writing on white cigarette paper. This design has been used in both qualitative and quantitative research in the past, including with both adolescents and adults in Australia, the UK and Norway (Hoek et al. 2016; Lund and Scheffels 2018; Moodie et al. 2017; Moodie et al. 2016; Moodie 2016a; Moodie et al. 2018a). Smoking kills is also a warning regularly communicated on the outer packaging, and with high recognition among adolescents (Moodie et al. 2015b). The final cigarette featured the word 'toxic' in black writing and a yellow skull and crossbones image on white cigarette paper. This image (i.e. skull and crossbones) is often used on other hazardous substances (e.g. chemicals such as bleach) and is used by the Health and Safety Executive to describe 'acutely toxic' chemicals (Health and Safety Executive 2019). The image has also been used in a study in France (Gallopel-Morvan et al. 2019a), and was considered too clearly communicate the harmfulness of smoking in the focus groups with adolescents in Scotland (Chapter Five; see 5.9.3).

Figure 7.2 ‘Standard’ cigarette and dissuasive cigarettes



7.4.3 Measures

7.4.3a Demographics

The demographics measures are outlined in detail in Chapter Six (see 6.4.4a). In summary, information on age, gender, ethnicity (coded: 'White British' and 'Other or prefer not to say') and socioeconomic status (SES) were obtained using questions at the start of the survey.

7.4.3b Smoking status

Smoking status was assessed using the same measurement as outlined in Chapter Six (see 6.4.4b) and unlike in Chapter Six, both ever and never smokers are included in analysis in this Chapter. Ever-smoker's being anyone that had ever-smoked, even if only once or twice but not anymore and never-smokers being anyone who had never smoked even a puff or two.

7.4.3c Smoking susceptibility

The measurement used for smoking susceptibility is the same as that used in Chapter Six (See 6.4.4c). In summary, two categories were used for susceptibility to smoke among never-smokers only: susceptible never-smokers and non-susceptible never-smokers. Participants were categorised as being susceptible if they indicated that they may smoke at any stage in the next year. Non-susceptible never-smokers are those that rejected the idea of ever smoking or trying smoking at any point in the near future.

7.4.3d Reactions to the standard and dissuasive cigarettes

Participants self-reported their reaction to each cigarette design on a battery of measures adapted from previous tobacco control research (Brown et al. 2010; Ford et al. 2013b; Moodie et al. 2017; Moodie et al. 2018a). Specifically, participants were asked to what extent they thought each cigarette design was: (1) Attractive/Unattractive; (2) Stylish/Unstylish; (3) Would be nice to be seen with/Would not be nice to be seen with; (4) Appealing to people my age/Not at all appealing to people my own age; (5) In general, my friends would approve of this cigarette/In general my friends would not approve of this cigarette; (6) In general, I would approve of my friends using this cigarette/In general, I would not approve of my friends using this cigarette; (7) Would be totally acceptable to family members/Would be totally unacceptable to family members; (8) Does look harmful to my health/Does not look harmful to my health; and (9) Would not put people off starting to smoke/Would put people off starting to smoke (henceforth this measure will be referred to as 'off-putting'). Each reaction was scored on a five-point scale (e.g. 1=Not appealing to people my age – 5=Appealing to people my age). Reactions were given separately for each cigarette design.

Consistent with previous survey research exploring dissuasive cigarettes (Moodie et al. 2019b), a composite score was calculated for each cigarette across the nine reaction measures (range: 9-45). A Cronbach's Alpha test found acceptable internal reliability in composite scores for each of the four cigarettes (range: $\alpha=0.80$ to 0.81). Composite scores

were binary coded based on whether the participant had a negative reaction to each cigarette. As the middle possible score was 27, all participants with a composite score ≤ 26 were classed as having a negative overall reaction, while those with a score ≥ 27 were classed as having a neutral or positive reaction. Given that the purpose in dissuasive cigarettes is to put young people off starting to smoke or continuing to smoke, it was deemed important to identify entirely negative reactions by not including neutral scores that indicate a level of uncertainty in opinion (e.g. not reacting negatively or positively). Using a composite score is an established method also used in tobacco packaging research with adolescents (Ford et al. 2013b).

7.4.3e Trial intentions

Consistent with previous assessment of trial intentions (Moodie et al. 2018a; Moodie et al. 2019b), participants were asked '*If one of your friends offered you one of the cigarettes how likely would you be to try each?*'. While in the previous studies, responses were provided on either a seven-point (Moodie et al. 2018a) or 11-point scale (Moodie et al. 2019b), in this study responses were provided on a five-point scale (*1=Very likely to 5=Not at all likely*), with participants giving a separate trial score for each cigarette. Using a five-point a scale for this measure ensured consistency across all measures used in the survey and facilitated straightforward interpretation for adolescents. For each cigarette, the scale responses were binary coded based on whether participants indicated that they would not try the cigarette (scores 4-5) versus those who provided a neutral answer or suggested they would try the cigarette (scores 1-3) (Moodie et al. 2019b). Similar to the rationale provided above on using a neutral or positive response and a totally negative response, it was important to separate participants that completely rejected trialling each cigarettes compared to those who were unsure (giving a neutral response) or that did not reject trial (giving a positive response). This approach was used given that the purpose of dissuasive cigarettes is deterring uptake or continued smoking, with the greatest impact likely to be on young people (Moodie 2018a).

7.4.4 Ethical considerations

The ethical considerations in this chapter replicate those in Chapter Six (6.5), as the findings presented here are from the same survey.

7.5 Analysis

A total of 686 responses were collected. Of these responses, 73 cases were excluded for not completing the consent form or for providing invalid or incomplete responses and 19 for being out with the age range (i.e. 11 or 18 years old), as highlighted in Chapter Six (6.6). The final sample used for analysis was 594. The sample for this analysis comprised both ever-smokers and never-smokers. This is in contrast to Chapter Six, which only focused on never-smokers.

Data were analysed using SPSS version 23 (Chicago, SPSS Inc). Frequencies examined demographics (e.g. age and gender), smoking status, susceptibility, and trial intentions (*would not try vs. neutral or would try*). Descriptive statistics examined mean scores and standard deviations for each cigarette on each of the nine reaction measures. As the scale data were ordinal, and the study based on a within-group design, Wilcoxon Signed Rank tests were used to examine differences in reactions to each of the cigarette designs, including whether reactions to the dissuasive cigarettes differed to the standard design. The Wilcoxon Signed Rank tests were conducted across all reaction measures and for all cigarette combinations (e.g. attractiveness reactions for the 'standard' cigarette vs. the green cigarette). A Bonferroni correction was applied to account for the six multiple comparisons on each reaction variable, resulting in a revised critical value of $p=0.008$.

Pearson Chi Square tests examined between-group differences in overall reactions (*negative vs. neutral and positive*) and trial intentions (*would not try vs. neutral and would try*). Chi-squares were run separately across all four cigarette designs for age, gender, SES, ethnicity, smoking status, and susceptibility. As numbers in the lowest SES category were small (1.9%

of sample; see limitations in 7.8), the low and medium categories were combined for the analysis and compared to the high SES category. Using binary logistic regressions with trial intentions for each cigarette the dependent variable was considered and the above-mentioned between-group variables as covariates, mirroring the approach employed in Chapter Six (see 6.7) and previous tobacco packaging research in the UK (Ford et al. 2013b). This was not possible, however, as the proportion of participants reporting trial intentions was very low for some of the cigarette designs (see results in section 7.6.5). This low cell count meant that acceptable model fit could be not obtained for all four cigarette designs.

7.6 Results

7.6.1 Sample characteristics

Accounting for missing data on gender ($n=1$), SES ($n=12$), smoking status ($n=12$) and susceptibility ($n=2$), the final sample used for analysis in this chapter are presented in Table 7.1.

Table 7.1 Sample demography

Variable	%	<i>n</i>
Age		
12-13 years	35	210
14-15 years	35	210
16-17 years	29	174
Gender		
Female	53	315
Male	47	278
SES		
Low and medium	25	146
High	75	436
Ethnicity		
Other/prefer not to say	17	102
White British	83	487
Smoking status		
Never-smoker	87	507
Ever-smoker	13	75
Susceptibility		
Non-susceptible	70	353
Susceptible	30	152

7.6.2 Reactions to dissuasive cigarettes versus the standard cigarette

Mean reaction scores to each of the four cigarettes were towards the negative end of each scale for all nine reaction items (<3) (Table 7.2). The exception was whether the 'standard' cigarette was considered off-putting, with the mean score ($M=3.21$; $SD=1.59$) suggesting a mostly neutral reaction. Wilcoxon Signed Rank tests found significantly less negative reactions to the 'standard' cigarette versus the dissuasive cigarettes across all nine measures (all $p<0.001$).

7.6.3 Reactions to the dissuasive cigarettes on all reaction measures

Compared to the 'smoking kills' cigarette, Wilcoxon Signed-Rank tests found that the 'toxic' cigarette was rated significantly more negatively on all reaction measures (all $p<0.001$ except perceived approving of friends using, $p=0.007$, and perceived family acceptability $p=0.003$) (Table 7.2). Compared to the green cigarette, Wilcoxon Signed Rank tests found that the 'toxic' cigarette was rated significantly more negatively for appeal, attraction, being nice to be seen with, perceived harm, and being off-putting (all $p<0.001$). There were no significant differences in reactions between the green cigarette and 'smoking kills' cigarette.

7.6.4 Overall reactions to cigarettes

Based on the binary coded composite reaction score, almost all participants had an overall negative reaction to the 'smoking kills' (94%), green (93%) and 'toxic' cigarette (96%). Over four-fifths (85%) had a negative reaction to the 'standard' cigarette. Chi-square tests found a difference of age for all four cigarettes (range: $p<0.001$ to $p=0.007$) (Table 7.3), with the linear-by-linear associations suggesting that negative reactions were greater among 12-13 year olds than older age groups for the standard cigarette ($\chi^2=7.11$, $p=0.008$), 'smoking kills' cigarette ($\chi^2=5.89$, $p=0.015$), green cigarette ($\chi^2=10.66$, $p=0.001$), and 'toxic' cigarette ($\chi^2=4.72$, $p=0.030$). Never-smokers were also more likely to react negatively to all four cigarettes than ever-smokers (all $p<0.001$), and non-susceptible never-smokers were more likely to react negatively to all four cigarettes than susceptible never-smokers (all $p<0.001$). Concerning

gender, females were more likely to react negatively to the green cigarette than males ($\chi^2=5.32$, $p=0.021$). For ethnicity, participants categorised as 'Other or preferred not to say' were more likely to react negatively to the standard cigarette than those identifying as 'White British' ($\chi^2=3.68$, $p=0.055$).

7.6.5 Trial intentions

Most participants indicated that they would not try the 'standard' (84%), 'smoking kills' (89%), green (90%), and 'toxic' cigarette (91%) (Table 7.4). Chi-square tests found a main difference of age for all four cigarettes (all $p<0.001$), with the linear-by-linear associations showing that trial intentions were lower among 12-13 year-olds than older age groups for the standard ($\chi^2=14.64$, $p<0.001$), 'smoking kills' ($\chi^2=9.60$, $p=0.002$), green ($\chi^2=12.63$, $p<0.001$), and 'toxic' cigarette ($\chi^2=13.32$, $p<0.001$). Never-smokers (vs. ever-smokers) and non-susceptible never-smokers (vs. susceptible) were less likely to have trial intentions for all four cigarettes (all $p<0.001$). There were no differences by SES, gender, or ethnicity.

Table 7.2 Within-group individual reactions towards a ‘standard’ cigarette and three dissuasive cigarettes

Individual items	¹ Standard vs. Smoking kills			² Standard vs. Green			³ Standard vs. Toxic			⁴ Smoking kills vs. Green			⁵ Smoking kills vs. Toxic			⁶ Green vs. Toxic		
	Standard (SD)	Smoking kills (SD)	<i>p</i> ¹	Standard (SD)	Green (SD)	<i>p</i> ¹	Standard (SD)	Toxic (SD)	<i>p</i> ¹	Smoking kills (SD)	Green (SD)	<i>p</i> ¹	Smoking kills (SD)	Toxic (SD)	<i>p</i> ¹	Green (SD)	Toxic (SD)	<i>p</i> ¹
Unappealing(1)/Appealing(5)	2.59 (1.45)	1.96 (1.19)	<0.001	2.59 (1.45)	1.95 (1.25)	<0.001	2.59 (1.45)	1.70 (1.09)	<0.001	1.96 (1.19)	1.95 (1.25)	0.945	1.96 (1.19)	1.70 (1.09)	<0.001	1.95 (1.25)	1.70 (1.09)	<0.001
Unattractive(1)/Attractive(5)	2.13 (1.26)	1.58 (0.89)	<0.001	2.13 (1.26)	1.54 (1.01)	<0.001	2.13 (1.26)	1.33 (0.82)	<0.001	1.58 (0.89)	1.54 (1.01)	0.288	1.58 (0.89)	1.33 (0.82)	<0.001	1.54 (1.01)	1.33 (0.82)	<0.001
Unstylish(1)/Stylish(5)	2.05 (1.39)	1.75 (1.24)	<0.001	2.05 (1.39)	1.77 (1.30)	<0.001	2.05 (1.39)	1.66 (1.25)	<0.001	1.75 (1.24)	1.77 (1.30)	0.947	1.75 (1.24)	1.66 (1.25)	<0.001	1.77 (1.30)	1.66 (1.25)	0.009 ²
Friends would not approve(1)/would approve(5)	1.88 (1.35)	1.68 (1.20)	<0.001	1.88 (1.35)	1.65 (1.17)	<0.001	1.88 (1.35)	1.58 (1.15)	<0.001	1.68 (1.20)	1.65 (1.17)	0.257	1.68 (1.20)	1.58 (1.15)	<0.001	1.65 (1.17)	1.58 (1.15)	0.015 ²
Would not approve of friends(1)/would approve(5)	1.64 (1.17)	1.55 (1.10)	<0.001	1.64 (1.17)	1.51 (1.06)	<0.001	1.64 (1.17)	1.49 (1.06)	<0.001	1.55 (1.10)	1.51 (1.06)	0.068	1.55 (1.10)	1.49 (1.06)	0.007	1.51 (1.06)	1.49 (1.06)	0.396
Family would not accept(1)/would accept(5)	1.40 (0.93)	1.33 (0.85)	<0.001	1.40 (0.93)	1.31 (0.85)	<0.001	1.40 (0.93)	1.30 (0.83)	<0.001	1.33 (0.85)	1.31 (0.85)	0.173	1.33 (0.85)	1.30 (0.83)	0.003	1.31 (0.85)	1.30 (0.83)	0.227
Would not be nice to be seen with(1)/would be nice(5)	1.69 (1.18)	1.40 (0.89)	<0.001	1.69 (1.18)	1.46 (1.02)	<0.001	1.69 (1.18)	1.33 (0.89)	<0.001	1.40 (0.89)	1.46 (1.02)	0.121	1.40 (0.89)	1.33 (0.89)	<0.001	1.46 (1.02)	1.33 (0.89)	<0.001
Harmful(1)/not at all harmful	1.73 (1.17)	1.46 (1.04)	<0.001	1.73 (1.17)	1.46 (1.06)	<0.001	1.73 (1.17)	1.34 (1.0)	<0.001	1.46 (1.04)	1.46 (1.06)	0.932	1.46 (1.04)	1.34 (1.0)	<0.001	1.46 (1.06)	1.34 (1.00)	<0.001
Off-putting(1)/Not at all off-putting	3.21 (1.59)	2.32 (1.41)	<0.001	3.21 (1.59)	2.27 (1.46)	<0.001	3.21 (1.59)	1.91 (1.31)	<0.001	2.32 (1.41)	2.27 (1.46)	0.275	2.32 (1.41)	1.91 (1.31)	<0.001	2.27 (1.46)	1.91 (1.31)	<0.001

Notes:

All test subject to Bonferroni correction, critical value $p=0.008$.

¹ Wilcoxon Signed Rank Test.

² Value significant before Bonferroni correction.

Range of missing data across comparisons: ¹19–38, ²11–38, ³10–39, ⁴11–37, ⁵10–37, ⁶12–39.

Table 7.3 Whether participant had an overall negative reaction to the ‘standard’ and dissuasive cigarettes and differences by demography and smoking status

Variable	Standard cigarette				‘Smoking Kills’ cigarette				Green cigarette				‘Toxic’ cigarette			
	%	n	χ^2	p	%	n	χ^2	p	%	n	χ^2	p	%	n	χ^2	p
Overall	85	445			94	492			93	480			96	497		
Age			15.94	<0.001			12.84	0.002			16.94	<0.001			10.03	0.007
12-13 years	94	151			99	161			100	156			100	160		
14-15 years	79	152			91	172			90	170			94	175		
16-17 years	83	142			93	159			91	154			95	162		
Gender			0.33	0.556			0.10	0.748			5.32	0.021			1.71	0.792
Female	86	243			94	268			95	268			97	272		
Male	84	201			94	223			90	211			95	224		
SES			0.28	0.595			0.10	0.753			0.12	0.734			0.004	0.949
Low and Medium	84	111			95	126			93	123			96	126		
High	85	327			94	360			93	351			96	365		
Ethnicity			3.68	0.055			0.05	0.832			0.12	0.735			0.10	0.750
Other/prefer not to say	78	71			95	86			92	82			96	85		
White British	86	369			94	402			93	394			96	408		
Smoking status			63.69	<0.001			40.60	<0.001			36.59	<0.001			24.71	<0.001
Never-smoker	90	402			97	430			96	420			98	432		
Ever-smoker	53	37			77	54			76	53			85	57		
Susceptibility²			26.70	<0.001			10.14	0.001			14.28	<0.001			11.90	0.001
Non-susceptible	95	296			98	307			98	302			99	307		
Susceptible	78	105			92	122			90	117			94	126		

Notes:

¹ Never-smokers only

χ^2 = Pearson Chi Square

Overall reaction: Total score across nine reaction items, binary coded into negative (≤ 26) or neutral or positive reaction (≥ 27).

Table 7.4 Participants who said they would not trial the standard and dissuasive cigarette, and differences by demography and smoking status.

Variable	Standard cigarette				'Smoking Kills' cigarette				Green cigarette				'Toxic' cigarette			
	%	n	χ^2	p	%	n	χ^2	p	%	n	χ^2	p	%	n	χ^2	p
Overall	84	478			89	502			90	508			91	512		
Age			22.12	<0.001			16.93	<0.001			24.47	<0.001			21.09	<0.001
12-13 years	94	180			96	182			98	186			98	186		
14-15 years	78	159			84	170			84	170			86	174		
16-17 years	80	139			86	150			87	152			87	152		
Gender			1.66	0.198			0.03	0.857			0.75	0.389			0.08	0.783
Female	82	251			88	268			91	275			91	275		
Male	86	226			89	233			89	232			90	236		
SES			0.43	0.512			0.38	0.540			0.03	0.868			0.26	0.611
Low and medium	82	116			87	123			89	126			89	126		
High	85	352			89	369			90	372			91	376		
Ethnicity			0.50	0.479			0.97	0.324			1.10	0.295			1.81	0.179
Other/prefer not to say	82	80			86	84			87	85			87	85		
White British	85	393			89	413			90	418			91	422		
Smoking status			155.04	<0.001			126.31	<0.001			69.95	<0.001			120.44	<0.001
Never-smoker	92	443			94	455			94	452			96	461		
Ever-smoker	34	25			49	36			62	45			55	40		
Susceptibility			36.21	<0.001			22.52	<0.001			20.80	<0.001			14.28	<0.001
Non-susceptible	97	327			98	329			97	327			98	330		
Susceptible	80	114			87	124			86	123			90	129		

Notes:

¹ Never-smokers only

χ^2 = Pearson Chi Square

Trial intentions: Binary from original scale variable, No trial intentions (score 4/5) or neutral/positive trial intentions (score 1-3).

7.7 Discussion

7.7.1 Summary of findings

The findings identified that adolescents rated the three dissuasive cigarettes (featuring a text warning, text warning and symbol, or unattractively coloured) more negatively than a standard cigarette, thus supporting Hypothesis 6 (Table 7.5). All three dissuasive designs were rated negatively, in particular, the toxic cigarette which featured both a written warning and pictorial communicating the direct harms of smoking, supporting Hypothesis 7. Younger adolescents and non-susceptible never-smokers were significantly more likely to react negatively than susceptible non-smokers, ever-smokers and older adolescents but no differences on any other demography variable were identified, thus Hypothesis 8 is partially accepted. The majority of adolescents suggested that they would not trial any of the dissuasive designs, Hypothesis 9 is therefore accepted. Adolescents in the youngest age group and non-susceptible never-smokers were significantly more likely to have negative trial intentions compared to the older age groups and susceptible never-smokers and ever-smokers, however, there were no other differences identified for any of the other demographic variables, as a result Hypothesis 10 is partially accepted.

Table 7.5 Hypotheses and outcomes for Chapter Seven

Chapter hypotheses	Hypotheses outcome
H6: Adolescents will react more negatively towards the dissuasive cigarette designs than a 'standard' cigarette.	Hypothesis accepted: Across all reaction measures, the dissuasive designs were rated more negatively than the 'standard' cigarette.
H7: The extent of negative reaction to dissuasive cigarettes will vary dependent on design features and the severity of the message/design.	Hypothesis accepted: Of the three dissuasive designs, the cigarette featuring the combined written 'toxic' warning and image of a skull and crossbones was rated more negatively than the green and 'smoking kills' cigarettes.
H8: Reactions to the dissuasive cigarette designs will vary by demography, smoking status, and susceptibility among never-smokers.	Hypothesis partially accepted: Younger adolescents and non-susceptible never-smokers were more likely to react negatively to the three dissuasive cigarette designs, however, ever-smokers were less likely to have negative reactions. There were little, to no, differences across other demographic groups.
H9: Compared to the 'standard' cigarette, adolescents will be less likely to report trial intentions for the three dissuasive cigarette designs.	Hypothesis accepted: The majority of adolescents suggested that they would not trial any of the cigarettes, with trial intentions lowest for dissuasive designs, in particular, the 'toxic' cigarette.
H10: Trial intentions for cigarettes with dissuasive designs will vary by demography, smoking status, and susceptibility among never-smokers.	Hypothesis partially accepted: Adolescents in the youngest age group and non-susceptible never-smokers had lower trial intentions than older adolescents and susceptible never-smokers. Ever-smokers were more likely to report trial intentions than never-smokers for all three dissuasive designs.

7.7.2 Study findings in relation to past evidence

The findings are consistent with research showing that consumers have negative reactions to dissuasive cigarettes (Hoek and Robertson 2015; Hoek et al. 2016; Lund and Scheffels 2018; Moodie et al. 2016; Moodie et al. 2017; Moodie et al. 2018a; Moodie et al. 2019b). The findings are also consistent with the results presented in Chapter Five, which reported that adolescents in Scotland found that dissuasive cigarettes increased harm perceptions, would be deemed embarrassing and would be considered off-putting. The findings in both Chapter Five and

the current chapter also highlight that adolescents had the most negative reaction to the cigarette featuring the warning ‘toxic’ and the skull and cross-bones image. This suggests that the combination of an image and text warning, and the severity of the message communicated, have a corresponding impact on severity of reactions (discussed further in 7.7.3).

The findings are important given that there are fewer studies with adolescents than adults, even though young people often access single cigarettes from friends, peers or family (Donaghy et al. 2013; Tjelta et al. 2017; Nuyts et al. 2020) and, as a consequence, may avoid exposure to prominent health warnings or unattractively coloured packaging (for those countries with standardised packaging) at the point of experimentation or consumption (Moodie 2018a). As tobacco companies have a long history of using the cigarette as a communication tool (Carpenter et al. 2005; Cook et al. 2003; Doxey and Hammond 2011; Ford et al. 2014;), and they continue to do so in countries with large pictorial health warnings and/or standardised packaging (e.g. through capsule cigarettes and other novel filter designs) (Moodie et al. 2018b; Scollo et al. 2018), dissuasive cigarettes may therefore also further reduce the appeal of smoking by replacing this promotional outlet with a health message.

7.7.3 Potential value of combined written and pictorial messages

Combining pictorials with a concise message has been suggested to increase the chances of attention being paid to the warning, the comprehension and retention of the message (Hammond 2011; Wogalter et al. 2012), and potential impact on preventing smoking imitation (Hammond 2011). Consistent with this, the cigarette with a warning (‘toxic’) and image (skull and crossbones) was perceived most negatively by adolescents; however, all three dissuasive cigarettes were viewed more negatively than the standard cigarette and trial intentions were low for each. These reactions are consistent with the findings in Chapter Five where the ‘toxic’ cigarette also elicited the most negative reactions and in previous research with young adult smokers in France (Gallopel-Morvan et al. 2019a). For instance, Gallopel-Morvan et al (2019a) found that dissuasive cigarettes increased risk perceptions and a reduced the desire to start

smoking, with the greatest effect found for the cigarette that featured a similar pictorial of a skull and cross-bones to that used in this study. The findings highlight that although all three dissuasive cigarettes were viewed negatively, the severity of the message and combining a pictorial warning with a written message increased these negative reactions, specifically the word 'toxic' and an imagery with connotations of harmful substances (skull and crossbones).

7.7.4 Rationale for using rotational dissuasive cigarette designs

As desensitisation occurs with all warnings, as noted by participants in the focus groups in Chapter Five (5.9.4), rotating dissuasive cigarette designs may help maximise impact. There is evidence that recurrent exposure to the same warning style can result in habituation and, as a result, the impact of the warning may decrease (Maynard et al. 2014; Woelbert and d'Hombres 2019; Moodie et al. 2020b). As such, rotational warnings are used on tobacco packaging to increase salience and reduce wear-out of the messages (Institute for Global Tobacco Control 2013), an approach mirroring this could be applied to dissuasive cigarettes. For instance, this could be achieved by requiring text warnings on cigarettes for one year (or other appropriate interval), unattractively coloured cigarettes for the second year, text warnings and symbols on cigarettes for the third year, and then starting the rotation sequence again for subsequent years. While in this study only three dissuasive cigarettes were explored (dark green, 'Smoking kills' and 'toxic'), there are several other message styles that could be included on dissuasive cigarettes on a rotational basis, such as, the 'minutes of life lost' (Hassan and Shiu 2015), the financial and social costs of smoking (Drovandi et al. 2019a) and other unappealing colours (Hoek and Robertson 2015), including the lighter green dissuasive cigarette explored in Study One (Chapter Five). Although in the focus groups reactions to both green cigarettes were negative, with the exception of some female participants that showed preference for the darker green cigarette.

7.8 Study limitations

Regarding limitations, the study was conducted in a school setting with teachers and peers present and, therefore, participants may have felt uncomfortable disclosing their smoking status or may have provided socially desirable responses. Most participants were of high or medium SES, due to a large proportion of the sample being recruited from one school in an affluent area, and the majority were never-smokers. Therefore, very limited insight is provided into reactions and trial intentions among those from low SES backgrounds or ever-smokers. Nevertheless, although the absolute values given may not be representative, that our findings are consistent with previous research suggests that the overall trends are likely to be generalisable to other populations. Future research using a larger and more representative sample would be able to examine to what extent reactions vary by SES (if at all) and how findings differ between never and ever-smokers (or between different levels of smoking heaviness, e.g. experimenters versus established smokers).

Few participants reported trial intentions for any of the dissuasive cigarettes and therefore this distribution of responses, combined with the modest sample size, meant it was not possible to use multivariate models to examine the association between cigarette reactions and trial intentions while controlling for other covariates (e.g. demography and smoking status). To reduce participant burden, only three dissuasive designs were explored. Given that the cigarettes were displayed in the same order; this may have caused an order effect. Randomisation would be beneficial in future research, as would research exploring how reactions vary among participants who are randomised to see only one cigarette design, thus removing any bias or confounding effect from exposure to multiple designs. Further research exploring alternative colours or dissuasive messages, or cigarettes featuring multiple dissuasive features (e.g. a warning, unattractive colour and imagery) (Gallopel-Morvan et al. 2019a), would also be beneficial. Due to a paucity of research, the between group comparisons were limited to those informed by expected differences based on existing

tobacco packaging research, for example by age, gender, and smoking status. Nevertheless, future research may wish to consider how additional intrapersonal and interpersonal factors may also influence reactions, particularly in-depth qualitative methods that can examine the wider interaction between social factors and the warnings on the product. For example, the data show that most participants believed that their parents and peers would be unfavourable to them trying dissuasive cigarettes, however future research may wish to examine how these perceived social norms are influenced by existing family or peer smoking.

7.9 Conclusion

In conclusion, this study found that adding dissuasive features to cigarettes, for example by making them unattractive in colour or adding a written and/or pictorial warning, elicits negative reactions among adolescents in Scotland and reduces interest in trialling these. The findings therefore provide support to the Scottish and Canadian Government's willingness to consider dissuasive cigarettes as a future tobacco control measure. These quantitative findings provide empirical corroboration to the focus group findings of Chapter Five, where adolescents deemed the dissuasive cigarettes unappealing, more harmful and off-putting than a regular cigarette, and in general showed support for this measure. The findings in this Chapter and in Chapter Five will be drawn together and discussed in the final discussion Chapter, Chapter Nine.

Chapter Eight: Adolescents' reactions to replacing the brand and variant name on standardised cigarette packaging with a number

The findings in this chapter are based on a paper currently under review:

*Mitchell, D., Moodie, C., Ford., A., MacKintosh, A.M., Critchlow, N. and Bauld, L. (Under Review) Youth perceptions of brand variant names on standardised cigarette packs, and responses to replacing these with numbers: A focus group study in Britain, *Drugs: Education, Prevention and Policy*.*

8.1 Introduction

This chapter examines how adolescents react to replacing the brand and variant name on cigarette packs with a number. It builds on the findings presented in Chapter Five and Six by considering whether 'numbered packs' could represent a future tobacco control measure (in addition to standardised packaging) to further reduce the appeal of smoking among young people. First, a summary of the importance of tobacco brands and brand variant names is provided (section 8.2), followed by the study aim and which research questions the chapter addresses (8.3). Third, the methods are discussed, including the design, sample and materials used (8.4). As this was an externally funding project, a section dedicated to the role of the PhD candidate (versus other members of the team) is also provided, this is included within the description of the methods (8.4.1). Fourth, the analysis techniques used are detailed (8.4). Fifth, the results are presented, covering six areas: (1) The meaning of brand names (8.6.1); (2) the communicative power of cigarette brand variant names (8.6.2); (3) perception of, and response to, different numbers (8.6.3); (4) attachment to cigarette brand variant name (8.6.4); (5) perceptions of numbered packs (8.6.5); and (6) how adolescents feel consumers would respond to numbered packs (8.6.6). Sixth, the findings are drawn together in the discussion (8.7) and strengths and limitations provided (8.8). Finally, conclusions will be presented (8.9).

8.2 Background

8.2.1 Increasing importance of brand variant name

As discussed in the literature in chapter three, tobacco marketing is a key contributor to smoking related morbidity and mortality (Henriksen 2012). In response, many countries have introduced a variety of tobacco control measures, including bans on advertising, promotion, sponsorship, open display at point of sale, pictorial health warnings, and standardised packaging (Drop et al. 2018). Consequently, in many countries, one of the remaining ways that tobacco companies can still create favourable brand perceptions is through the brand itself (e.g. Marlboro) and brand variant name (e.g. Marlboro Gold). Brand variant names are important to tobacco companies as they help to sustain or increase brand awareness, enable differentiation within a brand portfolio, signal product quality, appeal to different consumer segments, and indicate taste and flavour (Doxey and Hammond 2011; Friedman and Dipple 1978; Hammond et al. 2011; Hammond et al. 2013; Skaczkowski et al. 2017). These are all factors that contribute to constructing and maintaining positive brand equity (Aaker 2009; Aktaş Arnas et al. 2016; Hafez and Ling, 2005; Yoo et al. 2000). It has also been noted that brand preference often begins in childhood, with young people known to be conscious of brands they like to use (Elliott and Wattanasuwan 1998; Achenreiner and John 2003).

8.2.2 The influence of tobacco branding on consumers

Previous research has found that the brand variant name of tobacco products does successfully communicate product information and brand attributes to consumers, and can influence their perceptions of harm and appeal, including among young people (Doxey and Hammond 2011; Moodie et al. 2013; Scheffels and Sæbø 2013; White et al. 2012). For instance, smokers perceive cigarettes in packs with the terms 'light' 'mild' and 'smooth' to be smoother tasting and less harmful than 'regular' brands (Hammond and Parkinson 2009; Ng F. 2011), with identical cigarettes considered less harsh and better tasting when presented in packs with premium brand names rather than value brand names (Skaczkowski et al. 2017).

Findings from the focus groups with adolescents reported in Chapter Five also found that brand variant names are still able to communicate brand image, even once sold in standardised packaging. For example, adolescents thought that names such as 'Legendary Black' communicated coolness, 'Lambert and Butler' sounded classy, and Vogue was associated with fashion (5.6.3).

In markets with standardised packaging for cigarettes, where there is limited scope for tobacco companies to use the pack to create appeal, brand variant name appears to have become even more important (Morton and Greenland 2018). In such markets, tobacco companies have introduced new brand variant names and altered existing names, with these often including colour descriptors (e.g. Mayfair Sky Blue), evocative terms (JPS Legendary Black) (Moodie et al. 2018b; Scollo et al. 2015; Scollo et al. 2018) or both (e.g. Master Blend Blue) (Moodie et al. 2019). The focus groups presented in Chapter Five suggest that this continued use of brand variant name on standardised packaging was noticeable to, and held some resonance with, adolescents. Specifically, participants noted that tobacco companies were making use of the brand variant name as one of the only remaining marketing opportunities on the pack, including suggestions they were using variant name as an opportunity to invoke memories of the brand when still sold in fully branded packaging (5.6.3).

8.2.3 Tobacco control measures concerning brand variant name

There are some restrictions on brand variant name for tobacco products, brought into effect under standardised packaging legislation and the EUTPD. For instance, brand variant name should not create an erroneous impression about characteristics or reference to taste, flavour or smell or communicate that certain brands are less harmful than others (Department of Health 2016). Although these restrictions are in place, tobacco companies have asserted greater focus on using both colour descriptors (e.g. blue, black, orange gold etc.) or evocative terms (e.g. Crushball, St Moritz, Legendary, Triple Flow) in their brand variant names post-standardised packaging, as discussed in Chapter Two (2.5.2).

In recognition of the powerful role of brand variant name, the Government in Turkey proposed that it be removed from cigarette packs and replaced by a number, although, this has not been implemented to date (Mucan and Moodie 2018). Regarding how this would work in practice, numbers would be assigned alphabetically to all brand variants on the market at the time of the legislation; in the UK, for example, American Spirit Blue would be '1', American Spirit Orange '2', etc, with brand variants launched thereafter assigned the next highest available number (Moodie 2016b). Tobacco selling retailers would carry a product list showing the number and corresponding brand variant (Moodie 2016b; Mucan and Moodie 2018). It is important to note that brand variant name will not be entirely prohibited, as it will still be permitted on the brand list that retailers will be able to show to consumers.

To date, there is only one study that has explored reactions to standardised cigarette packs with a number in place of the brand variant name (Mucan and Moodie 2018). Specifically, this focus group research found that smokers aged 18-24 years in Turkey considered brand variant name to be an important and appealing feature of tobacco packaging, and that replacing this with a number may reduce appeal. By removing the brand variant name from the pack, they thought that newer or non-smokers could be deterred as it may be confusing and they may not necessarily be able to distinguish brands from each other and, as such, not be able to associate positive brand imagery with any cigarette brand.

8.3 The current study

The aim of this chapter are twofold. First, to extend the findings presented in Chapter Five concerning reactions to, and perceptions of, cigarette brand variant names (5.8.3). This chapter does so using a sample of adolescents of different age groups and from across the UK, thus helping to broaden the generalisability of the findings presented in the chapter Five (based on adolescents in Scotland only). The second aim is to present the first study exploring

adolescents' responses to the use of a number on cigarette packaging in lieu of brand variant name; to date, existing research has only focused on adult smokers in Turkey. By fulfilling these aims, this chapter also responds to research questions five and six of this thesis (4.3).

8.4 Methods

The findings in this chapter were collected as part of a wider study exploring adolescents' perceptions of standardised tobacco packaging. This study was funded by Cancer Research UK (CRUK) and lead by Anne Marie MacKintosh (AMM, Senior Research at ISMH) and Allison Ford (AF, Research Fellow, ISMH). The results from the main study are not reported here, but were presented as a conference poster by AF (Ford 2019). For the PhD thesis, a separate section was included in this study to explore the concept of numbered cigarette packs and how adolescents respond to this measure.

8.4.1 Role of the PhD candidate

In conducting this study, the PhD candidate joined a research team funded by Cancer Research UK to explore young people's responses to standardised tobacco packaging one year after implementation in the UK. The PhD candidate had the opportunity to supplement the CRUK research with a specific element focusing on numbered packs. The PhD candidate conceived and led on the numbered packs section, which was developed based on discussions with the supervision team and the research team. An established protocol for evaluation contribution is the CRediT taxonomy. For the contributions of the principal investigators of the study and the PhD candidate's supervision team, see table 8.1.

Table 8.1 Contribution of the research and supervision team

Contribution	Danielle Mitchell	Allison Ford	Anne Marie MacKintosh	Crawford Moodie	Nathan Critchlow	Linda Bauld
Conceptualisation	x	x	x	x		x
Data curation	x	x	x			
Formal analysis	x					
Investigation	x	x	x			
Funding acquisition		x	x			
Methodology	x	x	x			
Project administration	x	x	x			
Resources	x	x	x			
Software						
Supervision		x	x	x	x	x
Validation	x	x	x	x	x	x
Visualisation						
Writing -original draft	x					
¹ Writing – Review and editing	x	x	x	x	x	x

Notes: ¹ The findings in this chapter have been written for peer review where the wider research team had greater input, this chapter was led by the PhD candidate alone.

8.4.2 Justification for study design

Study Three also employed a focus group design. The aim of this study was to examine the importance of brand variant name on standardised cigarette packaging to adolescents and how they react when this brand variant name is replaced with a number. The materials were designed by the PhD candidate to explore a range of different numbers and names. By doing so, this study responds to research questions 5-6. It is also the first study to examine replacing brand variant name with a number among adolescents, as existing research has only focused on young adults in Turkey (Mucan and Moodie 2018).

The strengths and limitations of focus group research are discussed earlier in this thesis (see 5.4.1). As opposed to being led solely by the PhD candidate, as per Study One and Two, this study was part of a wider research project being conducted in ISMH. Specifically, a small section was allocated in focus groups conducted as part of a study exploring adolescent's reactions to tobacco marketing and standardised packaging, funded by Cancer Research UK. These groups were conducted in June and July 2018 and took place in Scotland, England and Wales. Anne Marie Mackintosh (AMM) was the Principal Investigator, Allison Ford (AF) was

the lead moderator in most groups, and the PhD candidate, Danielle Mitchell (DM), co-moderated all of the groups with AMM or AF. In all groups, the section on brand variant name and numbered packs – the part of this study reported in this thesis – was led by DM. A full breakdown of involvement, in accordance with the CRediT taxonomy is reported in Chapter Eight (8.4.1).

8.4.3 Justification for recruitment and sampling

Consistent with Study One and Two, Study Three also used a convenience sampling approach, however, market recruiters were used to recruit participants. Market researchers in each location (Scotland, England and Wales) identified and recruited participants via door-to-door recruitment and street intercepts in the local area.

8.4.4 Final sample

Twelve focus groups were conducted with 11-16 year olds ($n=89$) in Scotland (Glasgow), England (Newcastle) and Wales (Cardiff) between May and July 2018, one year post full-implementation of standardised packaging. Group size ranged between five and seven participants (Table 8.2). To gain a diverse sample, groups were organised by age, gender, and social grade. Social grade was determined using the national readership survey, with ABC1 signifying those in a higher social grade and C2DE those in a lower social grade by determining the occupation of the primary income earner of the household (National Readership Survey 2019), an approach consistent with previous tobacco packaging research with adolescents (Ford et al. 2013a). Unlike in the previous focus groups study, groups were not segmented by smoking status given that it would have been difficult to find enough smokers for the young age groups (e.g. 11-12 and 14-15). In England and Wales, participants were provided with a £15 Love2Shop voucher as an incentive for taking part. In Scotland, participants received the monetary equivalent of the voucher in Scotland, due to the recruitment agency having a different policy for incentives.

Table 8.2 Sample demographics

Group	Gender	Age	Social Grade	Country
1	Male	11-12	ABC1	Scotland
2	Female	11-12	C2DE	England
3	Female	11-12	ABC1	Wales
4	Male	11-12	C2DE	Wales
5	Female	13-14	ABC1	England
6	Male	13-14	C2DE	Wales
7	Male	13-14	ABC1	England
8	Female	13-14	C2DE	Scotland
9	Male	15-16	ABC1	Scotland
10	Female	15-16	C2DE	Scotland
11	Female	15-16	ABC1	Wales
12	Male	15-16	C2DE	England

8.4.5 Materials

Participants were shown 20 images of standardised cigarette packs. Ten of these images depicted packs with a range of brand variant names and the other 10 images depicted packs with a range of numbers. All images were designed to be a similar size to cigarette packs (Figure 8.1). The brands chosen represented popular and well-known brands available in the UK (e.g. Marlboro, Mayfair) (Talking Retail 2018) and that had variant names covering a range of product and colour descriptors (e.g. Vogue Blue Capsule) (Figure 8.1). To determine the numbers included, DM and AMM selected a range of numbers, which included those that may hold meaning to people, such as, lucky or superstitious numbers (e.g. 7 and 13) (Figure 8.2), with the rest chosen at random. Unlike past research exploring this measure, where only five numbered cigarette packs were shown (Mucan and Moodie 2018), a larger range of numbers were included to gauge broader reactions to the measure. Furthermore, a larger range of brands variant names were also included to explore differences in perceptions around brand variant name, what effect (if any) removing them may have, and what different numbers may mean (if anything) to young people.

Figure 8.1 Standardised cigarette packs with brand variant names



Figure 8.2 Images of cigarette packs with numbers



Participants were also shown two 'regular' (e.g. straight edges and flip-top lid) standardised cigarette packs which had been modified to show a number (selected at random) rather than brand variant name. The original brand and variant name was covered with paper reflecting the drab brown colour of standardised packaging in the UK, to increase ecological validity, and a number was printed on this covering. Participants were also shown a mock brand list, which included all cigarette brands with a pack size of 20 cigarettes available on the UK market at the time of the study and which number corresponded with which brand variant. The brands and prices were sourced from supermarket websites in the UK (e.g. Tesco, Asda etc.) The mock pack and list were used to show participants how the measure may work in retailers (Figure 8.3).

Figure 8.3 Mock packs and price list

RETAILER CIGARETTE BRAND LIST 2018			
Brand Number	Brand Name	Pack Size	Price
1	American Spirit Blue	20	£10.80
2	American Spirit Orange	20	£10.80
3	American Spirit Yellow	20	£10.80
4	Alluvé Green	20	£8.10
5	Alluvé Lilac (King Size)	20	£8.10
6	Alluvé Lilac (Superslims)	20	£8.10
7	Benson & Hedges Blue (King Size)	20	£7.65
8	Benson & Hedges Blue Superkings	20	£8.00
9	Benson & Hedges Dual (King Size)	20	£8.00
10	Benson & Hedges Gold 100s	20	£11.25
11	Benson & Hedges Gold (King Size)	20	£11.60
12	Benson & Hedges Gold Superkings	20	£11.30
13	Benson & Hedges Sky Blue (King Size)	20	£8.00
14	Benson & Hedges Sky Blue Superkings	20	£8.00
15	Benson & Hedges Silver flip (King Size)	20	£10.05
16	Berkeley Blue (King Size)	20	£8.25
17	Berkeley Blue Superkings	20	£9.25
18	Berkeley Original	20	£8.25
19	Berkeley Superkings	20	£9.25
20	Berkeley Green Superkings	20	£9.65
21	Camel Blue (King Size)	20	£11.55
22	Carlton Bright Blue (king size)	20	£8.00
23	Carlton Bright Blue Superkings	20	£8.00
24	Carlton Red (King Size)	20	£8.00
25	Carlton Superkings Red	20	£8.00
26	Carlton Superkings Green	20	£8.00
27	Chesterfield Blue (King Size)	20	£8.00
28	Chesterfield Green Superkings	20	£8.00
29	Chesterfield Red (King Size)	20	£7.63
30	Chesterfield Red Superkings	20	£8.00
31	Club (King Size)	20	£7.65
32	Dunhill Consulate	20	£11.30
33	Dunhill St Moritz	20	£11.65
34	Dunhill International (King Size)	20	£11.30
35	Dunhill Red (King Size)	20	£11.00
36	Embassy Bright Blue	20	£11.25
37	Embassy Filter (King Size)	20	£11.25
38	Embassy No 1. Red	20	£11.25
39	JPS Crushball	20	£8.54
40	JPS Green Edge (king size)	20	£8.54

8.4.6 Procedure

All 12 focus groups were led by AF or AMM, and co-moderated by DM. As a warm up activity, participants were asked about their general shopping behaviour. They were then asked about their knowledge of, and reactions to, standardised cigarette packaging (findings not presented here), before being asked about brand variant names and their reactions to numbered cigarette packs, with this section lasting, on average, 10 minutes (Appendix 16).

For the section on brand variant name and numbered packs, led by DM, the 20 images were initially laid out on the floor and participants were encouraged to look at them and think about how, if at all, the images could be organised into distinct groups. This approach was used as a means of encouraging discussion and understanding participants' response to the named and numbered packs without being prompted. Once participants had grouped the images, they were asked to explain why they had done so and whether there was anything they noticed about the images. Participants were asked about the different brand variant names and numbers, if they knew of any commercial brands other than cigarette companies (e.g. general products that they purchase) that used numbers in their brand (or brand variant name) and whether, in general, they thought that the brand name is important, and why.

The concept of numbered packs was then explained to the participants, who were shown the price list and mock packs. In six groups, mostly younger groups (11-12 or 13-14 years) who struggled to understand the concept, the example of how this would work in practice (price list and mock packs) was not shown, as it was felt this would cause further confusion. Participants were asked why they thought this idea may have been suggested and why tobacco companies use different variant names (if this had not come up previously). Finally, they were asked for their thoughts on how non-smokers and smokers would respond and were asked for their views on whether this was a good or bad idea. The second moderator took notes during this section and observed participants' verbal and non-verbal responses to the images to help understand reactions.

8.5 Ethical considerations

Ethical approval was obtained from the University of Stirling General University Ethics Panel (GUEP420) prior to recruitment. The ethical approval process was completed by the principal investigator AMM. Study Three presented similar ethical considerations to those already discussed for Study One (5.5).

As participants in Study Three were exposed to a variety of cigarette packs, including fully-branded packs that were available prior to standardised packaging, there were a number of ethical considerations. It was firstly important that participants were informed about the study, which was achieved through the information sheets. They were reminded of the confidential and anonymous nature of the study at the beginning of each group, and given the opportunity to ask any questions at this point. The market recruiters also informed the participant's parents about the study and obtained their consent for their child to take part. At the end of each group, participants were debriefed and informed about why the study was being conducted. They were also provided with a leaflet containing information about the harms of smoking and information on where to seek help or find out more information should they wish to.

8.6 Analysis

All groups were transcribed by external transcribers contracted by the University of Stirling. DM led the analysis concerning brand variant name and reactions to numbered packs (the conducted for the purposes of the PhD research). All of the transcript sections pertaining to the numbered packs were read several times by DM to facilitate familiarisation and were checked against the audio recordings to ensure accuracy. Field notes were taken within the groups to identify any non-verbal cues or comments made not captured on the audio recordings. Findings in this chapter were analysed using a similar thematic approach as the findings in Chapter Five (5.7) and used both an indicative and deductive method. The analysis

was conducted using NVivo version 11, where a thematic coding framework was created using the key areas explored in the groups as the dominant headings (e.g. general perceptions of brand name). From this, recurrent themes across the groups were developed into codes. Once all data had been thematically coded by DM, the initial themes and subthemes identified were reviewed by AF, AMM and the primary supervisors (CM and NC), with these themes then developed further through discussion.

8.7 Results

8.7.1 The meaning of brand names

The consensus was that brand name is important for people in general, and for them personally. One reason was the belief that others may form an image of them based on, for instance, the brands they wear, given that brand name can communicate the price of a product. The youngest (11-12) male groups commented that brand name enables differentiation, e.g. "*It [brand name] separates that brand from other brands*" (Males 11-12 ABC1, Scotland). Some participants agreed that brand name mattered but were unable to offer a rationale as to why, with this most common among females.

Sometimes like a brand name would be like... for instance like North Face [outdoor wear brand], Armani [designer fashion brand] ... quite expensive stuff
(Males 11-12 ABC1, Scotland)

It makes people have an opinion on you, if you wear cheap clothes... if you wear expensive clothes (Males 16-17 ABC1, Scotland)

8.7.2 The communicative power of cigarette brand variant names

Perceptions of the cigarette brand variant names usually occurred through facilitator prompts to look at, or think about, specific names, rather than organically. This may have been, at least in part, because participants were typically drawn to the pictorial warnings on packs instead.

I don't pay attention to the names, just the pictures (Males C2DE 13-15, Wales)

When discussing brand variant names, Marlboro Ice Blast reminded the majority of participants of iced slushy drinks, including specific mention of Tango Ice Blast (a sugary slushy drink), with it suggested that the cigarettes would be menthol or fruity in flavour, e.g. *"It'll be menthol"* (Females ABC1 13-14, England). For American Spirit Orange, some of the youngest participants (11-12) suggested that it sounded like an alcoholic drink, soft drink, or fragrance. Vogue was consistently compared to fashion and the luxury fashion and lifestyle magazine, and considered popular, particularly among ABC1 females.

What about American Spirit Orange? Have you ever heard of that one before, American Spirit? (Moderator)

Sounds like an alcohol

It sounds like a spray

A fizzy drink (Females 11-12 ABC1, Wales)

*If you saw that [American Spirit Orange] on drink, you'd know it was a cool drink
(Males ABC1 13-14, England)*

Vogue for example, does that name, that brand name tell you anything about those cigarettes? (Moderator)

Popular

Isn't it a fashion company? (Females 13-14 ABC1, England)

Several older (15-16) adolescents, mostly ABC1 males, discussed how cigarette brand and variant names could invoke perceptions of product price, quality, and taste. For example, the view that Marlboro, Dunhill and JPS were expensive brands was driven by seeing prices in shops, but also by the name. It was also felt that impressions of quality could be achieved through colour descriptors, such as 'Gold', and impressions of taste through descriptors such as 'Green', which was thought to indicate that the cigarettes were menthol.

Can I just ask something; how do you know if something is expensive or not because they're covered up now in the shops so how do you know? (Moderator)

Just if you buy them

The wee leaflets that tell you (Males 15-16 ABC1, Scotland)

You can tell with the name, like Gold that sounds quite expensive, the same with Dunhill (Male 15-16 ABC1, Scotland)

I would say a lassie, because its menthol, because girls like menthol and all that.

How do you know that one is menthol? (Moderator)

Because it's Green (Males 15-16 ABC1, Scotland)

8.7.3 Attachment to cigarette brand variant name

There were mixed views, particularly among males, regarding the importance of cigarette brand variant name to smokers. While one group of 13-14 year-old C2DE males viewed brand variant name as an insignificant element of the pack, in general males aged 13-14 and 15-16 felt that for smokers it carries meaning and something that they resonate with, and form an attachment to.

Is important [Brand name]? I'd say yes, because you kind of resonate that with your favourite cigarettes (Males 15-16 C2DE, England)

Some people might have an attachment to their cigarette brand, or it might signify something (Males 13-14 ABC1, England)

I don't think it's that important because all it is is a name, and it takes up a bit of space on the packet (Male 13-14 ABC1, Wales)

8.7.4 Perception of, and response to, different numbers

When asked about numbers in general, and whether numbers meant anything to them, participants often discussed lucky or meaningful numbers. This included birthdays, football numbers, or numbers that marked a memorable occasion (e.g. winning competitions).

7 apparently it's a lucky number (Female 13-14 ABC1)

The number 4 because that's when I won my first dancing competition (Female 11-12 C2DE)

Anyone else have a favourite number or...no? You do? What's yours? (Moderator)

18

18, why 18? (Moderator)

It's my birthday (Males ABC1 13-14 England)

There was some awareness of the use of numbers by other non-tobacco related products within the brand name. There was mention, mostly among male participants, about clothing and shoe brands that use numbers, for example, fashion brand 11 degrees and shoe brand Reebok which releases different editions using numbers (e.g. 95's). Several female

participants noted the use of numbers in make-up brands not only in the brand name, but also as a means of categorising different 'shades' (colours), with it mentioned that by using numbers, the make-up brand could be considered non-biased (e.g. Number 7). Some female participants also mentioned other fashion brands such as Forever 21, which they associated with youth. Regarding young male participants (11-14 years), there was mention of soft drinks brands, such as, J20 and 7-Up and the use of numbers by gambling retailers.

95s [Reebok] are the iconic shoes (Male 15-16 C2DE)

What about the numbers, do you guys...why do you think brands would use a number? Think about brands that you buy, think about brands in general not just cigarettes brands of anything, is there any brands that use a number? (Moderator)

Makeup brands like...

Why do you think they do that? (Moderator)

With makeup it's non-discriminatory that's why they do it (Females ABC1 15-16 Wales)

What about the brand number can you think of any? (Moderator)

Forever 21.

Why do you think they use that; why do you think they did that? (Moderator)

I don't know.

Youth I guess, association (Females ABC1 15-16 Wales)

So, think about products you would buy, it doesn't have to be cigarettes or cigarette packs, but can you think of any brands that would use a number? (Moderator)

7Up.

Betting places.

Why do you think they would use numbers? Why do you think companies would use a number? (Moderator)

*Well, because like on a can it's shorter so it looks better as well (Males C2DE 13-14
Wale)*

8.7.5 Perceptions of the concept of, and rationale for, numbered packs

Participants often appeared bemused by the concept of numbered packs, finding it odd, silly, confusing or pointless, particularly C2DE females, and younger ABC1 (11-12 years) participants, e.g. *"It's weird. It doesn't look right"* (Females 11-12 ABC1, Wales). Some females mentioned that smokers may initially be confused, but once they knew what number their brand was they would get used to the change. It was suggested that consumers would have to remember the brand variant numbers, as would retail staff who may accidentally give customers the wrong product. While younger ABC1 males and females suggested the availability of the product list in shops would make the transition from brand variant names to numbers easier, by doing so it would mean that customers would still be exposed to brand variant names, thus questioning the value of replacing brand variant name with numbers in the first place.

Do you think it's a good or a bad idea for...? (Moderator)

Bad.

Bad, why do you think bad?

People will get confused.

Wasting time (Females 13-14 ABC1, England)

But you can easily just read it [the product list], it's much easier (Females 13-14 ABC1, England)

Some government have recommended that the tobacco packs get rid of all the brand names, and they give every brand name a number (Moderator)

That's better.

What's the point in that? (Males 11-12 C2DE, Wales)

Regarding why a government would propose such a measure, several males alluded to it reducing the promotional power of the packaging, e.g. “*So it's not advertising them*” (Males 13-14 ABC1, England), by making all packs equal. While it was commented that people would become accustomed to the change, the removal of brand variant name was thought to help direct further attention to the already prominent pictorial warning.

Yes, it's a good idea. It makes all the packets the same (Males 15-16 C2DE, England)

It gets rid of the final thing on the packet, the actual eye catching... at the same time it's not going to make much of a difference once they find out what number it is (Males 15-16 ABC1, Scotland)

(You would). literally just see the picture and the message and that is it (Males 13-14 C2DE, Wales)

8.7.6 How would people respond to numbered packs?

Several participants, in particular females, felt that smokers would be annoyed or confused if the brand variant name was removed as they would not necessarily know what cigarettes they

had. In addition, males and older (15-16) ABC1 females tended to think that numbered packs would not have any impact on smokers, as the product is unchanged and, as a consequence of addiction, they would only be interested in the cigarette itself, e.g. “*The product is exactly the same*” (Females ABC1 15-16, Wales). In contrast, within several older (15-16) C2DE groups it was suggested that both smokers and non-smokers might be put-off as it is not what they are familiar with and it may be less appealing as the brand variant name provides smokers some reassurance.

If they're used to a specific brand they might not like any other ones, and they might not know which one they could be picking up (Females 11-12 C2DE, England)

I think you feel a lot more, like, confident in your cigarettes if they have a brand on, rather than just a number (Males 15-16 C2DE, England)

Less people would buy it

So you think it might put them off? (Moderator)

Yeah

It makes them feel like less powerful (Females 15-16 C2DE, Scotland)

I think if you already smoke, and obviously they changed the packaging and that, I think you would still smoke, but if you don't smoke I think now that they've done that, it will persuade you not to or it might become less appealing (Males 15-16 C2DE, England)

8.8 Discussion

The findings in this chapter suggest that cigarette brand variant names do appeal to adolescents, consistent with previous research (Hammond et al. 2013; White et al. 2012). Specific brand variants conveyed information about the product, such as cost, and associations with other products, such as drinks or fashion, echoing past research with adolescents (Scheffels and Sæbø 2013), including in Chapter Five. For example, Marlboro Ice Blast was frequently compared to iced drinks and fruity flavours, and colours such as 'Gold' were thought to signal expensive brands. However, responses to brand variant name occurred only when participants were asked directly about this, and not organically. Instead, they were drawn to the pictorial warnings, consistent with eye-tracking research which found that adolescent never-smokers attended to pictorial warnings on cigarette packs more than the branding (including brand variant name), whereas daily smokers attended to the branding more than the pictorial warnings (Maynard et al. 2014). This emphasis on the health warnings on the images is also congruent with findings in Chapter Five, where the health warnings were generally the most salient aspect of standardised packaging (5.6.5).

There was uncertainty among adolescents about how people would respond to numbered packs, with some participants considering it pointless or confusing for smokers and retail staff. Some participants highlighted that the presence of the price list (which would maintain the visibility of the brand variant names to some extent) may mitigate some confusion or difficulties for retailers and consumers. Participants also questioned whether this continued, albeit reduced, visibility would decrease the appeal of cigarettes to established smokers, particularly once consumers knew the number of their usual brand variant. Some participants mentioned that it could limit the ability of tobacco companies to promote their products, making all packs look more uniform, and that should brand variant name be replaced by numbers it may help further increase warning salience. In addition, some felt that people would be less able to establish any thoughts or feelings towards numbered cigarette packs, suggesting that this may

help weaken the power of cigarette branding. Research in Turkey with young adult smokers found, similar to this study, that some participants thought that numbered packs would look more simplistic and may be off-putting for newer smokers (Mucan and Moodie 2018). It is important to consider how tobacco companies may respond to numbered packs, which could transpire in several ways. The price list in this study was indexed in alphabetical order because this is the approach proposed by the Turkish Government, presumably for ease of use and comprehension. It could be argued that this provides an unfair competitive advantage to brands which appear earlier in the list and therefore are most likely to be seen by consumers. However, as smokers tend to have very high brand loyalty, alphabetical brand ordering is unlikely to change brand choice. Furthermore, shops already use product lists that are alphabetically ordered and there is no evidence to suggest that this has benefited brands that begin with letters near the start of the alphabet. Furthermore, given the importance of brand equity, tobacco companies would be extremely unlikely to change a brand name in response to such a policy.

8.9 Study limitations

While participants were shown images of 20 packs to ensure that they were exposed to different brand variant names and numbers but the same warning, this method lacks realism, with the exception of the mock packs used as a prompt to explain the concept, although these were not shown in all groups. Only a limited sample of numbers and brand variant names were shown in the groups. As the groups were recruited using friendship pairs this may have resulted in groupthink, with participants potentially shaping their views and answers based on those of their friends. While the sample comprised adolescents from three major cities in Britain, and accounted for age, gender and social grade, the findings cannot be generalised beyond this study. As this was only the second study to explore numbered cigarette packs, there is value in further exploring the concept with adult smokers in countries where standardised packaging is fully-implemented and where the policy is being considered, as the

removal of brand variant name could be considered as part of future standardised packaging regulations. Further research exploring the role that brand variant name plays in markets where standardised packaging has been implemented would be of significant value (Mutti et al. 2011; Skaczkowski et al. 2017; Skaczkowski et al. 2018), e.g. on perceptions of harm, taste, quality and brand attachment. Future research would also benefit from using experimental methods, where participants are exposed to packs with different brand variant names or numbers. This could be achieved using an experimental online survey.

8.10 Conclusion

Adolescents generally considered brand name an important element of a product, including of the product packaging. However, the most prominent feature of standardised packs was the pictorial warnings, consistent with findings in Chapter Five, with brand variant name being of limited interest. Findings from this study suggest that numbered cigarette packs may have some role to play in deterring newer smokers from continuing to smoke and disassociate any brand perceptions from the pack, communicated by brand variant name. Further research is needed to identify how this measure may work in practice, and be perceived by other groups including adult smokers and non-smokers. Further avenues for research will be discussed in the following discussion chapter, Chapter Nine.

Chapter Nine: Discussion and conclusions

9.1 Introduction

This chapter brings together the findings from the qualitative and quantitative studies presented in this thesis. First, this chapter will summarise key findings in relation to the six research questions and past evidence (section 9.2). Second, the contribution of the findings from this thesis and how they extend past evidence will be outlined (9.3). Third, how the Critical Social Marketing Framework was used in this thesis will be discussed (9.4). Fourth, the implications for future research will be outlined (9.5). Fifth, the implications for tobacco control policy will be described (9.6), including for tobacco control policy in the UK as a result of Brexit (9.7). Sixth, the strengths and limitations of the studies will be discussed (9.8). Finally, reflections on the research process are provided (9.9) followed by an overall conclusion (9.10).

9.2 Summary of findings

The six research questions (RQs), discussed in sections 9.2.1 to 9.2.6, were addressed using a mixed methods design. This involved eight focus groups with 16 and 17 year-old never and ever-smokers in secondary schools in Scotland ($n=41$) (Chapter Five), a cross-sectional survey with 12-17 year-olds in secondary schools in Scotland ($n=594$) (Chapter Six and Seven), and 12 focus groups with adolescents aged 11-16 years in Scotland, England and Wales ($n=89$) (Chapter Eight).

9.2.1 RQ1: To what extent (if at all) are adolescents aware of standardised packaging post full-implementation and what are their reactions to standardised cigarette packs?

In the first set of focus groups (Study One), there was some awareness of standardised cigarette packaging among 16 and 17 year-olds in the first year post full-implementation (2017-2018). This awareness was highest among ever-smokers, likely a result of greater exposure to smoking and cigarette packaging from friends or family that smoke, or

engagement with tobacco products. These findings are consistent with previous qualitative and quantitative research that found awareness of standardised packaging was higher among young ever-smokers (Bogdanovica et al. 2017; MacGregor et al. 2020).

Among those that were aware of standardised packaging in this study, the warnings were consistently mentioned as the defining feature of packs, even before being shown any cigarette packs in the groups. This echoes findings from the only other qualitative study with adolescents post-standardised packaging (MacGregor et al. 2020) and the findings pre-standardised packaging, see Chapter Two (2.4.1). For instance, research with young people has found that the warning is more noticeable on standardised packs (Maynard et al. 2013; McCool et al. 2012; Wakefield et al. 2015). When packs were introduced to the groups in Study One, reactions to these were generally negative, with the packs considered unappealing, boring, and off-putting, again consistent with previous research (MacGregor et al. 2020).

The main findings from the survey (Study Two) were that all four standardised packs were viewed negatively among never-smokers for all pack reaction measures (e.g. attractiveness, coolness, popularity). These findings are consistent with previous research prior to standardised packaging being introduced (Hammond et al. 2009; Ford et al. 2013b; Rootman et al. 1995) and post-implementation (Dunlop et al. 2017; El-Khoury et al. 2019a; El-Khoury et al. 2019b; White et al. 2015; White et al. 2019), where standardised packaging was found to reduce positive appraisal of cigarette packaging.

9.2.2 RQ2: To what extent (if at all) do reactions vary for standardised cigarette packaging with different structural features (e.g. slim packs, bevelled edges)?

In Study One, the cigarette packs with different structural designs (bevelled-edges, rounded-edges, slim pack and shoulder box) were viewed less negatively than the regular straight-edged flip top pack. For instance, the slim pack was considered discrete and the cigarettes

potentially less harmful due to the smaller pack design, and the bevelled pack presented a unique shape that some participants deemed appealing. The shoulder box was consistently considered the most appealing pack, with some thinking that it was appealing because of how it opened.

The findings from the survey corroborate the focus group findings in Study One, because while standardised packaging was generally viewed negatively by participants, the shoulder box was consistently rated less negatively than the regular pack on several attitudinal measures (e.g. attractiveness, cost, fashion and popularity). While there were no significant differences in reactions to the regular pack compared to the slim and bevelled-edged packs, reactions to the regular pack were the most negative across all reaction measures. Furthermore, when asked whether they would select any of the packs, participants that selected a pack were far more likely to pick a pack that differed from the regular pack, most frequently the shoulder box (55%). The findings from both these studies extend previous evidence on structural pack design, including novel opening methods and different edge types, which also suggest that novel pack design can influence adolescent's attitudes and perceptions, with such designs considered cool, attractive, novel and expensive (Borland et al. 2013; Kotnowski and Hammond 2013; Ford et al. 2013b; Moodie et al. 2011).

9.2.3 RQ3: How do adolescents react to dissuasive cigarette designs and how dissuasive features impact their trial intentions?

Regarding reactions to dissuasive cigarettes, in the focus groups all four dissuasive cigarettes (dark green, lighter green, 'smoking kills' warning, and 'toxic' warning with a skull and crossbones image) were viewed more negatively than a standard cigarette with imitation cork filter and white paper casing. The dissuasive cigarettes were consistently deemed to be off-putting, embarrassing and more harmful than the standard cigarette. Participants reacted most negatively to the 'toxic' cigarette, which used iconography associated with other harmful substances (skull and crossbones).

The survey extended the findings from the groups, with reactions to the three dissuasive designs (dark green, 'smoking kills' warning, and 'toxic' message with a skull and crossbones) significantly more negative than for the 'standard' cigarette across all reaction measures (e.g. appeal, attractiveness, stylishness, friend approval, approval of friends, family acceptance, whether they would be nice to be seen with, harmfulness and off-putting). The mean reaction score for all three dissuasive designs was consistently to the lower end of the scale compared to the standard cigarette, however, reactions were most negative for the 'toxic' cigarette.

The finding from both studies are congruent with previous qualitative and quantitative research exploring the potential effect of dissuasive cigarette designs, with all current evidence suggesting that unappealing colours, on-cigarette warnings, or the use of pictorials would be beneficial in reducing the appeal of smoking, increasing cessation-related cognitions, and reducing the perceived likelihood of uptake (Drovandi et al. 2019a; Drovandi et al. 2019b; Drovandi et al. 2019c; Gallopel-Morvan et al. 2019a; Hassan and Shiu 2015; Hoek and Robertson 2015; Hoek et al. 2016; Lund and Scheffels 2018; Moodie et al. 2017; Moodie et al. 2018a; Moodie et al. 2019b).

In the survey, the dissuasive cigarettes reduced trial intentions, in particular, among non-susceptible never-smokers. Out of the four cigarettes tested, the standard cigarette received the least negative response overall, including for trial intentions, predominantly among ever-smokers. That dissuasive cigarettes reduced trial intentions among both ever-smokers and never-smokers is consistent with past work (Moodie et al. 2018a; Moodie et al. 2019b). The findings from this thesis tentatively suggest that impact may be greater when the warning displayed on the cigarette includes both warning text and an image (in this case a skull and crossbones).

9.2.4 RQ4: How do adolescents react to, and perceive, cigarette packs that emit an audio health warning?

In the focus groups, adolescents reacted negatively to cigarette packs with audio warning messages, frequently mentioning that they would be embarrassing and off-putting, particularly if the pack was opened around other people. It was suggested, however, that the cigarettes could be decanted and alternative storage used or the sound device removed. But the messages were considered unavoidable and may become memorised. These findings are consistent with those of previous studies with adults (Moodie et al. 2015a; Mitchell et al. 2019).

9.2.5 RQ5: What are adolescents' responses to brand variant name on standardised cigarette packs?

Despite the legislation in the UK standardising most pack features (e.g. colour and font), brand variant name, even in a standardised font, appeared to influence appeal and product perceptions for some adolescents. Brand variant name was considered important by some adolescents in both focus group studies (Study One and Study Three). Some brand variant names in Study One (5.5.3) were thought to communicate product attributes such as classiness (e.g. JPS Legendary Black), with certain brand variant names in Study Three (8.5.2) associated with other products, such as, iced drinks or fashion (Marlboro Ice Blast and Vogue). The use of descriptors such as 'gold' were thought to indicate that a brand was more expensive. The findings from both sets of focus groups provides some evidence that the emphasis asserted on brand variant name by tobacco companies post-standardised packaging (Moodie et al. 2018b; Scollo et al. 2015; Scollo et al. 2018) resonates with adolescents, in particular, brand variant names that use colour descriptors or evocative terms. These findings add to those from previous research showing that brand variant name can influence product perceptions, including harm, taste, flavour and quality (Doxey and Hammond 2011; Hammond and Parkinson 2009; Mutti et al. 2011; Skaczkowski et al. 2017).

9.2.6 RQ6: How do adolescents react to cigarette packs with a number in lieu of brand variant name?

In the second set of focus groups (Study Three) that focused on the concept of removing brand variant name from packs and using a numbered instead, the numbered packs were generally considered pointless, weird and something that could cause confusion among consumers and retailers. While participants were generally ambivalent to numbered packs, for some they appeared to reduce the attractiveness of the products, with adolescents often unable to draw any meaning from the numbers on the packs. There was, however, no consensus regarding this concept and rationale for it. This was only the second study to explore this measure (Mucan and Moodie 2018), and the first with adolescents. Further research is necessary to explore how this may work in practice, and how adult smokers and non-smokers perceive the measure and whether it may have any attitudinal or behavioural impact on consumers.

9.3 Unique contribution to research

The findings in this thesis extend existing evidence in several ways. This study was the first to explore adolescents' reactions to standardised packaging in the UK post full-implementation using a mixed methods approach. In addition, it was the first to explore reactions to the role of brand variant name and the different standardised pack structures permitted in the UK (and other European countries, such as Ireland, France and Norway) and how this may effect smoking attitudes and behaviour, including susceptibility. Secondly, this study is one of the few to explore adolescents' reactions to dissuasive cigarettes, and directly contributes to the evidence for review by the Scottish Government. Thirdly, this thesis was the first to explore how adolescents' respond to cigarette packs containing audio warning messages and numbered cigarette packs.

9.4 Applications of the findings using the critical social marketing framework

In this section, the four stages of the Critical Social Marketing (CSM) framework developed by Gordon (2011) will be discussed, and how each stage was addressed in this thesis. Stage one was addressed in greater detail in Chapter Four when detailing the research framework (4.2) and in each of the three findings chapters when detailing the methods, as it relates to conducting research from a CSM perspective (section 5.4, 6.4, 7.4 and 8.4).

9.4.1 Step One – Conducting research

Step one of the CSM framework focuses on conducting research from a marketer's perspective. Research from a marketer's perspective should aim to uncover how marketing activities are viewed by a specific group of individuals and to establish how the consumer thinks and feels (Gordon 2011; Gordon et al. 2010). For instance, there is evidence that tobacco companies have conducted market research with consumers as young as 15 years-old to establish their wants, needs and what is important to them in order to create appealing imagery conveyed through marketing activities (Hastings and MacFadyen 2000). In the case of this research, both consumer focus groups and a survey were used to establish how adolescents react to, and perceive, how cigarette packaging is being used by tobacco companies in the UK (e.g. edge type, opening method and brand variant) to promote their products post-standardised packaging. In the focus groups prototype dissuasive cigarettes and cigarette packs with audio warning messages were used to establish reactions to these and how they may affect smoking attitudes and behaviour, techniques commonly used by marketers (Gordon 2011). The findings from the focus groups and survey were very similar, and while both designs have strengths and limitations, collectively they offer a more comprehensive insight into adolescent's views of standardised cigarette packs and dissuasive packaging measures.

9.4.2 Step Two – Dissemination

Step two of the CSM framework focuses on disseminating study findings. In this thesis, dissemination was primarily achieved through peer reviewed articles and presentations. Findings in Chapter Five, Six and Seven were published in moderate to high impact (impact factor: 1.17 - 6.76) journals in the field of tobacco control and public health research. Both the qualitative findings from Study One on adolescents' reactions to standardised cigarette packaging (published in BMC Public Health) and perceptions of dissuasive cigarettes (published in Drugs, Education, Prevention and Policy) were published between September 2019 and March 2020. More recently, both the quantitative findings from Study Two on adolescents' reactions to standardised cigarette packaging varying in structure and the association with smoking susceptibility (published in Nicotine and Tobacco Research), and responses to dissuasive cigarettes and trial intentions (published in Tobacco Control) were published between June and July 2020. A fifth paper co-authored by the PhD candidate alongside colleagues within ISMH (Kathryn Angus and Nathan Critchlow) and led by Crawford Moodie exploring how tobacco companies in the UK prepared for, and responded to, standardised packaging was published in Tobacco Control in 2018. Finally, an article was published in The Conversation, an online academic news source aimed at lay audiences, in December 2018, led by Nathan Critchlow (the second supervisor) with input from the PhD candidate, discussing how the tobacco industry responded to standardised packaging in the UK. Combined, these publications contribute valuable evidence for both standardised packaging post-full implementations and dissuasive cigarette research, including, from the prescriptive of adolescents.

Engaging with academic audiences has also formed a significant aspect of the PhD. The findings from this thesis have been presented at several conferences and meetings. First, qualitative findings on adolescents' reactions to standardised packaging were presented at a health and behaviour conference held at the University of Stirling in June 2019. The same

qualitative findings were also presented at an ASH Scotland PhD and early career researcher (ECR) event in January 2019. Latterly, two abstracts focusing on the findings from the survey in this thesis were presented online at the Society for Research on Nicotine and Tobacco Europe in September 2020.

Two additional international conferences were attended during the PhD, where findings from studies directly relevant to the thesis were presented. First, findings from an on-going study in the Institute for Social Marketing and Health (Tobacco Price Monitor)¹ assessing tobacco company pack and product developments in response to standardised tobacco packaging were presented at the World Conference on Tobacco or Health (WCTOH) in Cape Town, in March 2018. The findings from this study formed an important part of the literature review in Chapter Two (2.7). Secondly, findings on smokers' reactions to audio health warning messages were presented at the Society for Nicotine and Tobacco Research European Conference in Munich in September 2018.

9.4.3 Step Three - Upstream Social Marketing

Upstream social marketing focuses on communicating research findings to advocacy groups and informing policy. To achieve this stage in the CSM framework, since the start of the PhD, a membership was initiated with the Scottish Tobacco-Free Alliance research group at Action on Smoking and Health Scotland (ASH) in 2018, and research group meetings regularly attended. As previously highlighted, findings from Study One were presented at an ECR and PhD event held by ASH Scotland, with representatives from the Scottish Government and academics from other universities in attendance. Furthermore, the published work in this thesis is already contributing to advocacy reports and requests of leading health charities (CRUK 2020b).

² The tobacco price monitor, a study run as part of the Centre for Tobacco Control Research, is an ongoing surveillance of tobacco product developments, conducted by Crawford Moodie, Kathryn Angus, Danielle Mitchell and Nathan Critchlow

Following submission of this thesis the PhD candidate and the supervision team plan to write a policy briefing (based on the findings from this thesis) for the UK government, given that their Post-Implementation Review of standardised packaging must be published by Summer 2021 (UK Government 2018).

9.4.4 Step Four - Social Marketing Interventions

This thesis explored how packaging can be designed and used to attempt to dissuade smoking. The findings have the potential to inform the development of theory for social marketing interventions and policy by providing insight into how adolescents, a key target group to protect from smoking uptake, view measures such as dissuasive cigarettes. The Scottish Government have announced in their latest tobacco control action plan that they aim to review the evidence for dissuasive cigarettes (The Scottish Government 2018a). The findings from this thesis contribute to existing evidence. In addition, because the research was conducted in Scotland with adolescents (the key group for this proposed measure), they will be of value for the Scottish government.

Dissuasive packaging has been used in other sectors to protect young people. One example is laundry capsules, where a bitter flavour is added to stop children consuming them, alongside consumer protection warnings on the packaging (Treacy 2015). Pharmaceutical packaging has also been designed with child resistant properties to reduce the chances of children accessing medication that may be dangerous if consumed by them (Pareek and Khunteta 2014). While the inclusion of bitter flavours to cigarettes would help deter smoking among youth (and adults), and tamper proof cigarette packaging may help prevent youth gaining access to cigarettes, no government has proposed such measures. The use of hazard warning symbols on a range of product categories (e.g. bleach) however may be suitable as a symbol on cigarette sticks, given their toxicity when consumed.

9.5 Relation of the findings to smoking behaviour among adolescents in Scotland

As discussed in Chapter One (1.2), smoking rates among young people have fallen significantly over the last 20 years, with this reduction attributable to the raft of tobacco control measures implemented since the start of the century. Standardised packaging is one of the most recent tobacco control measures introduced, and consistent with past marketing related policies it appears to have further reduced the appeal of smoking to young people (Moodie et al. 2021a), as found in this thesis. Aside from the appearance of the pack, as standardised packaging also required a minimum pack size of 20 cigarettes and 30 grams for rolling tobacco this higher cost is also likely to have reduced the appeal of smoking (Pierce et al., 2012). However, no research in the UK has been able to determine whether standardised packaging and/or increased cost has been a causal factor in reduced smoking rates among youth.

9.6 Implications for future research

9.6.1 Future directions for standardised packaging research

While the evidence for standardised packaging is extensive, there remain gaps in the literature. Until recently, the only longitudinal research on the impact of the measure over time has been conducted in Australia, and France (Young et al. 2014; El-Khoury et al. 2019a; El-Khoury et al. 2019b). Some of the latest evidence provided by the International Tobacco Control (ITC) policy evaluation project (which uses representative cohorts of smokers in 29 countries) found that in Australia and the UK smokers supported standardised packaging, health warnings became more salient and the appeal of tobacco packaging decreased (Aleyan et al. 2020; Moodie, Best, Critchlow et al. 2020). However, there remains a lack of empirical understanding of responses to standardised packaging in the UK. Conducting longitudinal research with adult smokers and adolescents, particularly where there are differences in mandated pack features (e.g. structure, cigarette style etc.) would be of value. Conducting longitudinal research would also allow for any habituation of the policy to be identified, which

could be achieved by tracking calls to quit lines, as has been done in Australia (Young et al. 2014). This would be beneficial should the UK government update the policy following review.

Secondly, no study has explored perceptions of, and responses to, the variations permitted in pack structure in the UK with adults. Further research is needed to address this gap. This could be achieved using the methods employed in this thesis (focus groups and survey), or an online experimental design, where participants would be exposed to, and asked to rate, a range of pack designs (different pack structures and opening methods). Sales data could also be used to identify the percentage of cigarette packs purchased in the UK that have different structural features (e.g. bevelled edges, slim packs etc.). The sales data could be paired with either a consumer survey, focus groups or both to establish consumer purchase habits, and if purchase habits have altered following standardised packaging (e.g. brand or products switching).

Thirdly, as of May 2020, tobacco companies are no longer permitted to sell flavoured cigarettes, including cigarettes with flavour-changing capsules in the filter, under the Tobacco and Related Products Regulation (TRPR) (UK Government 2016). Currently several brands use variant names that reflect the inclusion of a flavour changing capsule (e.g. JPS Crushball), with some adolescents in Study One aware of these. It is important that future research monitors how tobacco companies respond to the flavour ban, with changes to brand variant name or a shift in product focus likely to occur.

Fourthly, this thesis focused exclusively on cigarettes, and did not explore other tobacco product categories. Future research should investigate reactions to roll-your-own (RYO) packaging with the pack size, shape and material often diverging from cigarette packs, although, some RYO brands are sold in similar packaging to cigarettes. There is also a gap in understanding on perceptions of RYO pouches post-standardised packaging and developments in RYO materials, including, the inclusion of flavour capsules in filter tips and

flavoured rolling papers (e.g. mint), likely introduced in response to the ban on flavoured cigarettes in May 2020. Employing focus group research with adult smokers would be beneficial where a range of RYO materials available on the UK market can be explored and their perceptions and possible experiences of using these could be identified.

Finally, there are other tobacco products that should be considered in future research. For instance, cigarillos (that are not included in the standardised packaging legislation in UK and continue to use fully-branded packaging). It should also be noted that some brands of cigarillos have introduced variants with flavour changing capsules (e.g. Burton Purple Crush and Sterling Signature Dual Capsule leaf wrap) (identified via the Tobacco Price Monitor Study¹) possibly to circumvent the recent flavour ban on cigarettes. Following the introduction of standardised packaging, a novel product similar to 'snus' appeared on the market called Nordic Sprit. This product was also identified by the Tobacco Price Monitor research team. Given that this product is more common in Scandinavian countries, such as Sweden, particularly among young people (Scheffels and Lund 2017), exploring responses among this population in the UK would be informative.

9.6.2 Future directions for dissuasive packaging measures

There are several avenues for future research regarding the potentially dissuasive measures explored in this thesis. Firstly, given that there have only been two studies on responses to replacing brand variant name with a number on cigarette packaging, and the second being Study Three, further research would be of value, whether with consumers and/or retailers.

Secondly, research exploring a range of dissuasive cigarette designs, including different warning messages, unappealing colours, and a combination of all dissuasive features (e.g. unappealing colour, dissuasive image and message), would be of value. This could be achieved using an experimental online survey design. Focus groups with smokers would also be beneficial to understand perceptions and potential impact of alternative designs.

In addition, a naturalistic experiment with adult smokers using dissuasive cigarettes would allow for a deeper understanding of potential behavioural outcomes, similar to research conducted with young female smokers in the UK, using mock standardised packs, prior to the implementation of the measure (Moodie et al. 2014).

Also to date there has only been one study to explore smokers' perceptions of different rolling tobacco papers including those that serve a promotional purpose, such as, natural, clear and cone shaped papers and plain papers, which are required in Canada (Moodie and O'Donnell 2020). Even though smokers that use rolling tobacco make their own cigarettes, the rolling paper could be used to display warning messages or be unappealing in colour, similar to research with cigarettes, therefore, there is value in extending the understanding of dissuasive cigarettes from factory made cigarettes (explored in this thesis) to RYO tobacco. Developmental focus groups with adult RYO smokers would provide insight into perceptions on this potential measure and what impact it may have on their smoking behaviour. The focus groups could inform a consumer survey or experimental study with smokers to explore different rolling paper designs building on the findings from both past research and in this thesis using a range of different dissuasive designs and combinations.

Finally, there is potential to use the pack as a multifaceted health communication tool. This could be achieved through the use of multiple measures, such as pack inserts with gain-framed cessation messages and dissuasive cigarettes, combined with standardised packaging. Although cigarette pack inserts were not explored in this study, there is evidence, including from Canada where this measure has been implemented, that inserts encourage quitting behaviour through the use of supportive quit related messages (Thrasher et al. 2015; Thrasher et al. 2016; Mucan and Moodie 2018; Moodie 2018b; Moodie et al. 2018a). There is, however, no evidence on how all three of these measures would work synergistically, but as individual measures. One option would be a randomised control trial, with a number of

conditions, for example: 1) standardised packaging (control group), 2) standardised packaging and health-promoting pack inserts, 2) standardised packaging with dissuasive cigarettes, and 3) standardised packaging with pack inserts and dissuasive cigarettes.

9.7 Implications for tobacco control policy

Given that possible future tobacco control measures, such as dissuasive cigarettes, are only being considered in Scotland within the UK nations (and in Canada), implications for both the UK and Scotland will be discussed separately.

9.7.1 Implications for tobacco control policy in the UK

This section focuses on the implications for tobacco control policy in the UK, as a result of the findings in this thesis. One of the primary issues identified regarding standardised packaging are the inconsistencies across the countries that have implemented the policy. For example, legislation in the UK is called standardised packaging and the Australian and New Zealand legislation is called plain, however, in practice, it is actually the opposite; in the UK packs are plain, but not standardised as different structural features are permitted (e.g. brand colours and logos are prohibited but bevelled and rounded-edges, slim packs and shoulder box openings are allowed) (Moodie et al. 2019a). Whereas, packs in Australia and New Zealand are entirely standardised, not just plain, including a standardised structure and opening method (e.g. straight edges and flip-top lid). Furthermore, Australia limits the use of the cigarette by only allowing alphanumeric codes rather than brand variant name on the cigarette paper, as is currently still permitted in the UK (Moodie et al. 2019a). In light of the findings in this thesis, where certain pack features were preferred by adolescents (e.g. shoulder box), should standardised packaging policy be re-evaluated in the UK, priority should be given to limiting the use of pack structure and countries looking to adopt the policy should standardise all aspects of the pack. Given that standardised packaging aims to increase health warning

salience, encourage cessation and deter smoking uptake, there should be no pack features that continue to hold appeal, particularly amongst young people.

The findings in this thesis also demonstrate that brand variant name still held some meaning (e.g. fashion, classiness) or communicated product features (e.g. taste) with adolescents, even on standardised packs. Although there are restrictions in place in the UK regarding brand variant name, for instance, tobacco companies are not permitted to use descriptors such as 'light' or 'mild' (European Commission 2016; UK Government 2016), policy makers should consider placing greater restrictions on brand variant name, such as, banning the use of colour descriptors.

As discussed in Chapter One, smoking is a leading cause of poor health including 14 types of cancer, with smoking being responsible for the vast majority of lung cancer cases. In light of the COVID-19 pandemic, it has been suggested that smoking may exacerbate the virus given the damage that smoking causes to respiratory health, although there is no conclusive evidence on this association (CRUK 2020a). As a result of the pandemic and the focus being given to the harm caused by smoking, and with smoking continuing to be a leading cause of mortality in the UK, it is possible that the UK government may consider harm reduction measures with regards to smoking a priority. Furthermore, the fact that such a virus has worsened the symptoms experienced by smokers, it may be worth considering as an alternative warning message used on tobacco packaging.

Finally, similar calls have been made for all aspects of the pack to be standardised (eliminate structural variations), applying standardised packaging to all tobacco products (e.g. cigars and cigarillos) and a ban on the use of colour descriptors by leading health charities, such as, Cancer Research UK (CRUK 2020b).

9.7.2 Implications for tobacco control policy in Scotland

Given that the Scottish Government are considering implementing dissuasive cigarettes (The Scottish Government 2018a), and not the rest of the UK, there are some feasibility and practicality issues that should be addressed. Should dissuasive cigarettes be implemented only in Scotland, there is potential for a new black market to emerge, through across border trading from England. As a result, issues around the practicality in terms of exposure to the measure could arise, as people may avoid purchasing cigarettes in Scotland and seek alternative sources, including online or illicit cigarettes. Regarding feasibility, it was noted by marketing experts that dissuasive cigarettes could be designed using affordable vegetable based inks (Moodie 2016a). Furthermore, tobacco companies already use ink on the cigarette, whether that is for the brand variant name printed on the cigarette paper or alphanumeric codes (Moodie 2016a; Moodie et al. 2019a), therefore, printing a health warning on cigarettes or making them unappealing in colour is achievable with minimal burden on manufacturers.

Finally, as a multifaceted policy approach has seen a decline in smoking rates in Scotland (e.g. advertising ban, smokefree policy and point-of-sale ban) (The Scottish Government 2019b), there is value in applying a similar approach to the pack by taking into account all levels of the packaging to deter smoking uptake and encourage cessation. For instance, a combination of measures including standardised packaging, dissuasive cigarettes and cigarette pack inserts communicating cessation advice would be of value (Figure 9.1) discussed previously (9.4.2). Should such a comprehensive measure be considered, ideally, dissuasive cigarettes would be implemented initially, followed by inserts. By implementing both measures separately, evaluation research could be conducted to explore perceptions and the impact of each measure individually, and then together.

Figure 9.1 Multifaceted dissuasive cigarette packaging measure



9.8 Policy implications post brexit

With the UK having left the European Union on 31st January 2020, it is necessary to consider what consequences this may have for tobacco control and tobacco trade. The warnings required on packs in the UK since May 2017 were taken from the TPD, and therefore are within the remit of the European Commission. The European Commission issued a notice on October 7th 2019 to stakeholders following the decision to leave the EU, which stated that the UK will no longer be permitted to use these warnings (European Commission 2019). It was anticipated that should there be a no-deal Brexit, the UK would adopt the pictorial health warnings used in Australia (Dawood 2019). Recent guidance published by the UK government, however, confirmed that from January 1st 2021 there will be only one set of pictorial warnings, those previously used in Australia, with no rotation (UK Government 2020). It is important to explore the impact of these new warnings, both in the short and longer term.

9.9 Strengths and limitations of study

9.9.1 Study strengths

There are several strengths of this thesis. First, all three studies employed established methods for data collection. For instance, using focus groups to gain insights into views and opinions of young people and a survey to establish reactions to standardised packaging and cigarettes. Secondly by using a mixed methods design, the findings could be synthesised using the perspective from a larger sample of adolescents via the survey and the in-depth views from the focus groups to provide holistic insights. Thirdly, the survey benefits from having validated measures used in previous tobacco control research and national surveys. Finally, most of the findings in this thesis have been peer reviewed and now directly add to the evidence base for both standardised packaging and dissuasive cigarettes.

9.9.2 Study limitations

There are several limitations of this thesis. The sample sizes were modest for all three studies, with this partly being due to the challenging nature of recruiting in schools. There were few ever-smokers recruited in all studies, and while this reflects the low smoking rates among young people in Scotland and across Britain, the small proportion of ever smokers makes it difficult to know exactly how this population have responded to standardised packaging or how they would respond to other packaging-related measures, such as dissuasive cigarettes.

The survey was cross-sectional, and therefore, any change in attitudes, perceptions and behaviour over time could not be explored. With the exception of the last study, the research was based in Scotland (with the exception of Study Three) and conducted with adolescents, and therefore the findings cannot be generalised to other countries with standardised packaging or other populations, such as adults.

Only standardised packs were used and shown to participants, with no fully-branded packs used. This omitted the possibility of comparing reactions to the previous pack designs and standardised packaging, although only standardised packs were legally available on the market at the time of the studies.

Finally, in the first set of focus groups, the PhD Candidate moderated and analysed all groups herself, increasing the possibility of researcher bias.

9.10 Reflections on the research process

This section focuses on the personal and professional challenges faced throughout the PhD journey and reflections on the overall process. The personal challenges will be discussed first.

It is important to first reflect on my background prior to the PhD. I completed two degrees with a marketing focus, specifically a BA honours degree in Marketing (2014) and a Master's degree in International Fashion Marketing (2016). As a result, I embarked on the PhD with some understanding of marketing and consumer behaviour. For the PhD I had to expand my thinking and understanding to other viewpoints of marketing, such as critical social marketing, in order to conduct my research. This has been beneficial not only from a research point of view as I continued throughout my PhD and latterly working on other projects within ISMH, but from a personal one, as how I consume products and view marketing has shifted.

It is also important to reflect on my own smoking behaviour and history, particularly being a non-smoker. It was important for me to conduct the research objectively with an open mind to other people's experiences.

A further personal challenge that I faced at many stages throughout the PhD was public speaking, something I have struggled with. One of the most challenging aspects of the PhD

was recruiting in schools, where I had to contact schools and speak to a large number of young people at one time. Although I found this initially challenging, I was supported by my supervisors and the teachers in the schools that helped me recruit participants, and I believe this has been beneficial for subsequent public speaking.

A further reflection relates to how my understanding of best practice in research has evolved during my studies. When I started, my research experience was limited to qualitative work, meaning I underwent a steep learning curve with regards to designing, conducting, and analysing quantitative data. To build my understanding, I attended a statistics course at the Graduate School within the University of Stirling, engaged with relevant literature, and consulted with experienced researchers within the ISMH team. While I am proud of the survey, there are several key learning points I would take forward if repeating the research or conducting similar studies. For example, by observing the best practice of others, I would look to publish study protocols and pre-register the design, procedure, and analyses for my survey. Doing so increases the reliability and credibility of the research, for example, minimising publication bias and providing transparent opportunities for other researchers to replicate or extend the findings (Munafo et al. 2017). It also has practical benefits, such as, increasing the visibility of research, which may facilitate more opportunities for networking and collaboration with others working on similar research. Thankfully, high-reach and open-source opportunities to do this are becoming more widely available through platforms such as the Open Science Framework

Three years of funding were provided for the studentship. As a result of recruitment and fieldwork taking over a year to complete, I required an additional unfunded year, resulting in financial pressures and difficulties in loss of autonomy. However, the fourth year offered me time to focus on writing for peer reviewed journals, with four papers being published from the thesis and a fifth submitted. This has provided me with valuable experience of the peer review process.

Finally, while in the final writing up the stage of the thesis, the University closed as a result of COVID-19 and the advice was to work at home. This was incredibly challenging in terms of the PhD for many reasons. There was the prospect of working at home in isolation for an extended period of time, and therefore having no face-to-face contact with peers, supervisors and other member of the ISMH team, which I have valued throughout my PhD, and also not being able to see friends and family for time away from the PhD. Also the process of creating a suitable working environment at home came at a cost to productivity and writing time, while also causing stress and anxiety. This was overcome by regular conversations via email and meetings using video conferencing with ISMH and the supervision team.

Regarding challenges with balancing work commitments and the PhD, towards the end of the PhD I worked on several ISMH projects (as my funding ran out) as a Research Assistant. These projects included the Tobacco in Prisons Study (TIPs) and the vaping in prison study, both led by Kate Hunt, an e-cigarette marketing study, led by Martine Stead, and a project exploring gambling behaviours and target marketing in young people and sports bettors during the COVID-19 pandemic, led by Kate Hunt. As I was employed on a casual basis, I was able to work flexibly on the projects and also on my PhD. Working on several projects has not only given me invaluable research experience, but also encouraged productivity on the PhD as I felt a sense of increased morale from working as part of a team and had clarity on my own research.

9.11 Conclusion

This thesis suggests that standardised packaging in the UK is reducing the appeal of tobacco products and drawing attention to the health warnings. However, the evidence suggests that it would be preferable to standardise the entire pack, so that only straight-edged flip-top packs are permitted. Furthermore, as brand variant name remains one of the few ways that tobacco

companies can differentiate brands and create appeal or communicate attractive brand features or imagery, the types of variant names permitted could be limited. The findings highlight that standardised packaging is not the last word in tobacco control, particularly if Scotland wants to create a smokefree generation by 2034. There are several opportunities to go beyond standardised packaging to communicate health messages, with dissuasive cigarettes appearing a particularly promising policy option. Scotland has the opportunity to become the first country to implement this measure, building upon standardised packaging and contributing to a smokefree Scotland.

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Appendices

Appendix 1: Ethical approval letter from GUEP University of Stirling

Danielle Mitchell
Faculty of Health Sciences & Sport
University of Stirling
FK9 4LA

20 October 2017

Dear Danielle

Re: Adolescent's perceptions of plain tobacco packaging and novel packaging measures, beyond plain packaging, to deter smoking: Mixed Methods Study – GUEP 273

Thank you for making the requested revisions to your submission of the above to the General University Ethics Panel. I am pleased to confirm that your application now has ethical approval.

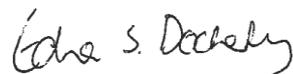
Please note that should any of your proposal change, a further submission (amendment) to GUEP will be necessary.

Please ensure that your research complies with the University of Stirling policy on storage of research data <http://www.stir.ac.uk/is/researchers/data/afteryourresearch/>

If you have any further queries, please do not hesitate to contact the Committee by email to guep@stir.ac.uk.

Good luck with your research.

Yours sincerely,



p.p. On behalf of GUEP
Professor Helen Cheyne
Deputy Chair of GUEP

Appendix 2: PVG Disclosure

STRICTLY PRIVATE AND CONFIDENTIAL

Disclosure

SCOTLAND

PVG SCHEME RECORD

Subject to the provisions of section 12 of the Protection of Vulnerable Groups (Scotland) Act 2010

APPLICANT COPY

Disclosure Number: 2000000735508
Date of Issue: 19/12/15
Page 1 of 1

MISS DANIEL JERUTH MITCHELL
4 BARASSIE CRESCENT
CUMMERNALLD
NORTH ABERKIRKSHIRE
G63 0BP
SCOTLAND



A copy of this disclosure record has also been sent to the registered body which submitted the application and any other relevant regulatory body.

Applicant Personal Details

Surname:	MITCHELL
Forenames:	DANIEL JERUTH
Date of Birth:	26/08/1976
PVG Membership No.:	0012-01732210622

Statement of Scheme Membership

Membership Status

The applicant is a PVG scheme member in respect of regulated work with children and the role excluded from that type of regulated work.

Consideration Status

The applicant has not been considered for listing by the Scottish Ministers for the work/role(s) to which this disclosure relates.

Vetting Information

Convictions and Alternatives to Prosecution

The applicant has no convictions or alternatives to prosecution for disclosure.

Cautions

The applicant has no cautions for disclosure.

Prescribed Court Orders & Sex Offenders Notification Requirements

The applicant has no prescribed court orders or sex offenders notification requirements for disclosure.

Other Relevant Information

The applicant has no Other Relevant Information for disclosure.

END OF DISCLOSURE

COMPLIANCE

54234778

Appendix 3: GDPR privacy notice for the focus groups in Study One

Privacy Notice

Focus groups exploring tobacco packaging and cigarettes

The General Data Protection Regulation (GDPR) harmonises data protection and privacy legislation across Europe. It is designed to ensure that personal information is accurate, appropriate, and properly managed to protect peoples' privacy.

This research study is being conducted by the University of Stirling. We are committed to implementing the GDPR in all of our activities.

This document is our Privacy Notice; it describes why we collect personal information, how we manage this information, and your rights under the GDPR.

We hope the following information is both helpful and reassuring. If you have any questions / concerns or wish to exercise your GDPR rights, please contact us (see below for contact details).

Why does the researcher need any personal data?

We are collecting some basic personal data (your name and age) and some personal data related to smoking (smoking status). All of the focus group questions are optional, so you can choose not to answer a question.

We are holding the focus groups to help us understand young people's attitudes and views on tobacco packaging and cigarettes. We are only collecting the information (data) we need to help us do this.

What is the legal basis for processing any data you choose to give us?

As part of the project we will be recording some personal data relating to you. This will be processed in accordance with the General Data Protection Regulation (GDPR). Using GDPR terminology our legal basis for processing your personal data will be a 'task in the public interest'. Agreeing to take part and answering these questions means you understand, and are OK with this.

Strong measures are in place to keep what you say confidential. The only time we may have to break confidentiality is if:

- we believe that someone could be seriously hurt or there is a serious risk to security

What do we do with the answers that you give?

All focus group answers will be collected, used, and stored (processed) by the researcher at the University of Stirling. The tape-recordings will never be heard by anyone but the researcher and the whole typed up transcripts seen by the researcher and the researcher's supervisor, also an employee of the University of Stirling. Your data will not be shared with anyone external to the University.

All audio recordings of the focus groups and transcripts will be stored on a hard drive at the University, that only the researcher has access to via a password. All paper documents will be securely locked in a drawer that only the researcher can access. Your name will never be used in any of the analysis, including transcripts, or the findings.

The researcher will make sure to take account of everyone's answers to write reports and research articles and give talks as part of the study. The researcher might use some of your words when they write and speak about the study. But they will not include your name or anything else which could identify you.

How long do we keep your data?

Your personal information will be deleted 2 years after the end of the project or once the final report (thesis) is submitted. After this time, all paper and electronic data and permission (consent) forms will be deleted or destroyed.

At the end of the project your focus group answers will be deposited into the University of Stirling's research data archive DataSTORRE for a minimum of 10 years.

What are your rights?

You have the right to request to see a copy of the information we hold about you and to request corrections or deletions of the information that is no longer required. To safeguard your rights, we will use the minimum personally-identifiable information possible. For more information about your rights see the Information Commissioner's Office guidance at: <https://ico.org.uk/for-organisations/guide-to-the-general-data-protection-regulation-gdpr/individual-rights/>

To exercise these rights please use the following contact details.

Contact details

You have the right to lodge a complaint against the University regarding data protection issues with the Information Commissioner's Office (<https://ico.org.uk/concerns/>).

The University's Data Protection officer is Joanna Morrow, Deputy Secretary. If you have any questions relating to data protection these can be addressed to:

Data Protection Officer

University of Stirling

Joanna Morrow

Email: data.protection@stir.ac.uk

Tel:01786 466940

Appendix 4: Letters sent to local authorities

To whom this may concern,

My name is Danielle Mitchell and I am studying for a PhD at the University of Stirling, where my research concerns how tobacco packaging could be used to deter smoking among youth. While smoking rates among 12-17-year-olds in Scotland has declined, statistics show that 3% of 13 year olds and 13% of 15 year olds smoke in Scotland (Ford et al, 2013). National statistics also show that around 15,000 young people take up smoking each year in Scotland (The Scottish Government, 2013), with around two thirds of smokers having started before 18 and around a third before the age of 16. In addition, research in Scotland shows that young people are still gaining access cigarettes either through proxy purchases (i.e. asking someone to buy them), or obtaining single cigarette from friends, family, shops or in school (Donaghy et al, 2013).

It is clear that there remains interest in smoking among youth between the ages of 12-17, and therefore continues to be an important public health issue in Scotland. In an attempt to reduce smoking among young people further, standardised tobacco packaging became mandatory from May 20th this year. The primary focus of my research is to explore youth perceptions of standardised packaging to see what impact, if any, this has had, and also to explore their views of cigarettes that have been designed to be dissuasive. Exploring dissuasive cigarettes is of particular importance given the continued exposure of youth to single cigarettes. I aim to do this through a mixed methods approach, adopting both focus groups and questionnaires. The focus groups will concentrate on pupils aged 16-17 and the questionnaire will focus on all secondary school pupils aged 12-17.

I would like permission to conduct research in schools in the [council area] area to assess the impact of standardised packaging and dissuasive cigarettes, with secondary school pupils. Obtaining permission to carry out the research would provide a valuable opportunity to gain a real-world insight, into whether there is any value in considering dissuasive cigarettes as a further measure to deter smoking among youth, and the impact, if any, of standardised tobacco packaging on this important age group. To my knowledge this would be the first study to explore standardised packaging with adolescents following the implementation in the UK. I have included all accompanying paperwork outlined in the research request document as appendices. The proposed research has received ethical approval from the General University Ethics Panel at the University of Stirling and a PVG from Disclosure Scotland has been obtained for the main researcher (Danielle Mitchell). I would like to thank you for taking the time to read my request, and I hope to hear from you soon. My contact details and those of my primary supervisor are on the following page.

Yours faithfully,

Danielle Mitchell



Researcher

Danielle Mitchell

Faculty of Health Sciences and Sport

Institute for Social Marketing

Pathfoot, Room G10

University of Stirling

FK9 4LA

Tel: 07794687196

Email: Danielle.mitchell1@stir.ac.uk

Primary Supervisor

Dr Crawford Moodie

Faculty of Health Sciences and Sport &
Institute for Social Marketing

Pathfoot, Room J2

University of Stirling

FK9 4LA

Stirling

Email: c.s.moodie@stir.ac.uk

Appendix 5: Letter to schools

Date

Address

Name of Head Teacher,

My name is Danielle Mitchell and I am a PhD student at the University of Stirling, where my research concerns how tobacco packaging could be used to deter smoking among youth. While smoking rates among 12-17 year-olds in Scotland have declined, around 15,000 young people are still taking up smoking each year with approximately a third of regular smokers starting before the age of 16 and two-thirds before the age of 18. Research in Scotland has found that young people typically gain access to cigarettes through someone buying them for them or by obtaining single cigarettes from friends, family, shops or in school. In an attempt to reduce youth smoking, standardised tobacco packaging became mandatory from May 20th this year. The primary focus of my research is to explore youth perceptions of standardised packaging to see what impact, if any, this has had, and also to explore their views on cigarettes designed to be unattractive, given that many children access single cigarettes and therefore do not necessarily see the pack. As there are currently no studies in Scotland exploring the real-world impacts of standardised packaging among young people, the group that this legislation was designed to help most, this study would be of significant value.

The target sample is 12-17 year olds (1st to 6th year pupils), with the study design involving focus groups and a questionnaire. The aim is to conduct eight focus groups with pupils aged 16-17 years, segmented by gender and smoking status (ever smoker, never smoker), with up to 7 pupils in each group. A semi-structured topic guide would be used within groups, which would last up to 90 minutes. The questionnaire, which will be the same for all pupils and should take between 10 and 15 minutes to complete, will explore similar themes to the focus groups (standardised packaging, dissuasive cigarettes). Ideally, data collection would begin between September and October 2017.

Enclosed are copies of the focus group topic guide, questionnaire, parental consent form, participant consent form and information sheets. The parental consent forms only need to be returned if parents do not wish for their child to take part, and are only required for those under the age of 16 unless school policy requires consent from all parents. The participant consent forms will be filled out by participating pupils prior to completing the questionnaire and before each focus group. Given that this study aims to explore measures intended to discourage smoking, the groups will conclude with a debrief of the harms of smoking, with similar information given to pupils (in the form of a leaflet) following completion of the questionnaire.

I would be grateful if you would grant permission for me to conduct this low risk research within your school. It would be ideal to involve your school in both stages of the research (focus groups and questionnaire), however if only one is possible then that would be greatly appreciated. The delivery of the materials can be flexible to fit in with existing school commitments or schedules to minimise disruption. The proposed research has received ethical approval from the General University Ethics Committee at the University of Stirling and a PVG from Disclosure Scotland has been obtained for the main researcher (Danielle Mitchell).

Thank you for you taking time out of your busy schedule to read my request. Contact details are provided below should you wish to get in touch with me or my supervisor, but I will follow up this letter within a week to discuss the request further, either via email or telephone. I hope to hear from you soon.

Yours Thankfully,

Danielle Mitchell

Researcher

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Tel: 01786 466456

Appendix 6: Teacher information sheet for focus groups recruitment

Teacher information sheet

Study description:

The University of Stirling is conducting a study to find out young people's attitudes and opinions on cigarettes and cigarette packaging. The researcher (Danielle Mitchell) is looking to recruit participants aged 16 and 17 ONLY to be involved in focus groups. These groups will include between 5 and 7 participants in each, will involve you being asked a range of questions and shown a variety of materials, that you will be able to discuss together as a group.

The study is completely voluntary and you are not obligated to take part.

If you would like to take part, I have information sheets for you to read, consent forms and a pre focus group questionnaire for you to complete. The purpose of the pre group questionnaire is to allow the researcher to organise the groups, as these will be organised based on gender and smoking status. These have been provided with envelopes so that only the researcher sees your response. A new data protection law has also recently been put in place in the UK (GDPR), therefore, I also have a privacy statement for you to take away with you and keep. This privacy statement tells you about how the researcher will use and keep your personal data and your rights to access this data.

Process:

- Information sheet – Pupils should be given 5-10 minutes to read and decide if they wish to take part. This should also be taken home by pupils to keep.
- Consent form – to be read carefully by pupils and signed by both the pupils and teacher taking consent (should not be put in envelope so that teacher can sign)
- Pre focus group questionnaire – to be completed and put into small white envelope provided
- Privacy statement – pupils that are taking part in the study should take the privacy statement home with them.

Appendix 7: Focus group participant information sheet and consent form

Focus Group Research: Opinions on Tobacco Packaging and Cigarettes

PARTICIPANT INFORMATION SHEET

You are being invited to take part in a study that is being run by the University of Stirling. Before you decide, it is important to understand why the research is being done and what it will involve. Please take time to read this information sheet carefully and discuss it with others if you wish. If there is anything that you are not clear about, or if you would like further information, please ask.

What is the study about?

We want to find out young people's opinions and attitudes towards tobacco packaging and cigarettes.

What will the study involve?

A good way for us to find out what people think about tobacco packaging and cigarettes, is to use group discussions. This will involve groups with 7 people in each where a guide will be used to ask you questions. You will also be shown cigarette packs and cigarettes in the group as this allows us to get your opinions and attitudes towards them first hand, and allows you to discuss them as a group. The groups will be held in the most convenient location for participants and will last around 50 minutes.

Is the research confidential?

All of the information that you provide will be confidential and anonymous. Your name will not be used in the writing up of the groups and in any publications that come from the research, you will not be identified.

The discussion will be audio-recorded to ensure that the researcher does not miss anything and to make the process as quick as possible. All material (including audio recordings) will be stored safely at the University of Stirling and only the researcher will have access to it.

The research will be distributed in various ways, such as reports, articles for scientific journals, conference talks, and the researcher's thesis, but individuals will never be named.

Do I have to take part?

No. It is up to you whether you take part. Attendance at the discussion group is completely voluntary.

Can I withdraw from the study?

Yes. If at any time you feel that you do not wish to continue, you may withdraw from the study.

How do I take part?

If you would like to take part, then complete and return the consent form provided.

What if I change my mind?

You are not obliged to participate in this study and you can choose to opt out at any time.

Are there any risks to me if I take part?

In any study there is a possibility that you may feel uncomfortable talking about some of the topics or there is the risk that you share some personal or confidential information, by chance. However, we do not wish for this to happen. You do not have to answer any question that you feel is too personal or makes you uncomfortable.

What do I get in return?

If you take part in the study you will have the opportunity to put your name into a prize draw to win a silver 32GB iPad Mini 2.

Who can I contact for further information?

If you have any questions or would like to discuss the study further, contact Danielle Mitchell (researcher) if queries relate to the study. Should you wish to discuss the research with someone out with the study, please contact the Dean of Faculty:

Researcher

Danielle Mitchell

Faculty of Health Sciences and Sport &

Institute for Social Marketing

Pathfoot, Room G10

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FK9 4LA

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Tel: 07794687196

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Professor Jayne Donaldson

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CONSENT FORM (PARTICIPANT)

**Focus Group Research:
Opinions and Attitudes on Tobacco Packaging and Cigarettes**

Please initial box

- | | |
|--|--------------------------|
| 1. I confirm that the above study has been explained to me and I have had the opportunity to ask questions. | <input type="checkbox"/> |
| 2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason. | <input type="checkbox"/> |
| 3. I agree to the audio-recording of the discussion group. | <input type="checkbox"/> |
| 4. I agree to take part in the discussion group. | <input type="checkbox"/> |
| 5. I understand that any information I give will be confidential and that only the researcher will have access to this information which will be stored safely at the University of Stirling and destroyed after 10 years. | <input type="checkbox"/> |
| 6. I understand that what I say may be quoted when the researcher writes about the project, but I will not be identified by name. | <input type="checkbox"/> |

Name of Participant	Date	Signature

Name of Person taking consent	Date	Signature

(if different from researcher)

Researcher	Date	Signature

Appendix 8: Focus groups pre-group questionnaire

Thank you for agreeing to take part in the focus group. There are just a few short questions for you to answer in order for the groups to be organised. The answers that you provide will be completely confidential and only the person carrying out the research will see them.

Q1 what is your name? (Write Below)

Q2 what is your age?

16 years old	
17 years old	

Q3 What is your gender

Female	
Male	

Q4 which of the following best describes you? Tick one only.

I have never smoked, not even a puff or two	
I have smoked a few times before	
I smoke at least once a month	
I smoke at least once a week	
I smoke every day	

Thank you for your time. Please put your answers into the envelope provided and seal the top. This will ensure that no one will see your answers, apart from the researcher.

Appendix 9: Parent information sheet for West Lothian Schools

Focus Group Research: Opinions on Tobacco Packaging and Cigarettes

PARENT INFORMATION SHEET

Your child is being invited to take part in a study that is being run by the University of Stirling. It is important to understand why the research is being done and what it will involve. Please take time to read this information sheet.

What is the study about?

In Scotland, 15, 000 young people take up smoking each year, with most regular smokers starting before 18. In an attempt to reduce smoking rates among young people, the UK government recently implemented standardised tobacco packaging. This study seeks to explore young people's opinions and attitudes towards standardised tobacco packaging and cigarettes designed to be unattractive.

What will the study involve?

A good way for us to find out what people think about tobacco packaging and cigarettes, is to use group discussions. This will involve groups with 7 people in each where a guide will be used to ask your child questions. They will also be shown cigarette packs and cigarettes in the group as this allows us to get their opinions and attitudes towards them first hand, and allows them to be discuss the topic within a group. The groups will be held in the most convenient location for participants and will last around 50 minutes.

Is the research confidential?

All of the information that your child provides will be confidential and anonymous. Their name will not be used in the writing up of the groups and in any publications that come from the research, they will not be identified.

The discussion will be audio-recorded to ensure that the researcher does not miss anything and to make the process as quick as possible. All material (including audio recordings) will be stored safely at the University of Stirling and only the researcher will have access to it.

The research will be distributed in various ways, such as reports, articles for scientific journals, conference talks, and the researcher's thesis, but individuals will never be named.

Does my child have to take part?

No. It is up to your child whether they wish to take part. Attendance at the discussion group is completely voluntary.

Can my child withdraw from the study?

Yes. If at any time your child feels that they do not wish to continue, they may withdraw from the study.

What if my child changes their mind?

Your child is not obliged to participate in this study and they can choose to opt out at any time.

Are there any risks to my child if they take part?

In any study there is a possibility that participants may feel uncomfortable talking about some of the topics or there is the risk that they may share some personal or confidential information, by chance. However, we do not wish for this to happen. Your child does not have to answer any question that they feel is too personal or makes them uncomfortable.

What does my child get in return?

If your child takes part in the study they will have the opportunity to put their name into a prize draw to win a silver 128GB iPad 4.

Ethical approval

The study has received ethical approval from the University of Stirling.

Who can I contact for further information?

If you have any questions or would like to discuss the study further, contact Danielle Mitchell (researcher) if queries relate to the study. Should you wish to discuss the research with someone out with the study, please contact the Dean of Faculty:

Researcher

Danielle Mitchell
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Tel: [0044 1786 466345](tel:00441786466345)

Appendix 10: Focus group topic guide

Introduction

Thank you all for coming along today, my name is Danielle and I am a researcher based at the University of Stirling. Has anyone been to a group like this before? **If yes, ask what the group was about.**

Today I want to show you different types of cigarette packs, and cigarettes from the UK, and get your views on these. I want to hear what you think so just say whatever comes to mind, there are no right or wrong answers. Feel free to say as much or as little as you like, but I expect that you'll be doing most of the talking. When answering you should not be influenced by anyone else within the group or by me. If there are any questions that you don't want to answer, then you don't need to. And just a reminder that the study will be confidential and anonymous so if the findings are published you'll never be identified.

Finally, the discussion will be recorded so I don't miss what you say, so please try and talk one at a time. Are there any questions?

PRESS RECORD ON THE DIGITAL RECORDER AND MAKE SURE IT'S RECORDING

Warm up

To start off I would like to go around the group and for each of you to give your name, and say something about yourself, for example, what you like to do in your spare time.

TAKE NOTE OF THEIR NAMES

PART 1: GENERAL PERCEPTIONS OF CIGARETTE PACKAGING: (CRITICAL SECTION, ALLOW TIME AND FOLLOW-UP ON ANY RESPONSES) (APPROX: 10 MINS)

I would now like you to think about cigarettes and the way that they are packaged

How often do you see cigarette packs?

Where do you see them?

Who do you see them with?

What are they like?

What is the first thing that comes to mind when you think about cigarette packs?

How do you feel about cigarette packaging? **Why?**

Is there anything about cigarette packaging (SMOKERS any cigarette packs) that you like or dislike? **Why?**

PART 2: PLAIN PACKAGING (APPROX: 15 MINS)

I would now like to show you some cigarette packs and get your thoughts on them.

HAND OUT FIRST 5 PLAIN PACKS (VARIANT NAME)

Variant name: (1-JPS Legendary Black, 2-Mayfair Sky Blue, 3-L&B Crushball, 4-JPS Triple Flow, 5-Embassy Number 1 Red)

Have a close look at these packs and pass them around. **Give them some time to look at them and follow-up on any interesting comments.**

What do you think about these packs?

What do you think about the colour? Does it remind you of anything?

What kind of person do you think would use these packs?

Do you think that these packs would make you feel differently about smoking? **Why?**
How would you feel walking about with and displaying these packs? **Why?**
How do you think others would react to you using a pack like this?
Are they off-putting? **Why and to who?**
Do you think that they would have an impact on smokers? **Why and what impact?**
Are there any that you particularly like or dislike? **Why?**

Health warning salience:

What do you think about the warnings?
Are they clear on the pack?
How do the warnings make you feel?
Do they make you think differently about smoking? **Why?**
Do you think that they would have an impact on smokers? **Why and what impact?**
What do you think about the names?
Is there anything about the names that stands out?
Are there any that you particularly like or dislike? **Why?**
Take in the 5 packs and keep them in front of you

HAND OUT 5 PLAIN PACKS (SHAPE)

Shape: (1-Regular (Sterling Red), 2-Slim (Vogue Green), 3-Bevelled (Silk Cut Silver), 4Rounded (Marlboro Gold), 5-Shoulder)

Follow up on any comments about them looking or feeling different, or noticing the bevelled edge, slim, and shoulder pack. If no-one notices, ask:

Are there any differences between any of the packs?
What do you think of the packs with these edges compared to these ones? **(Show bevelled and standard packs)**
What do you think about this pack compared to this pack? **(Show standard and slim pack)**
What about this pack **(Show standard pack and shoulder pack)**? What do you think about the warnings on these packs?

PART 3: AUDIO PACKS (APPROX: 10 MINS)

We are now going to look at something a bit different, I have some different packs to show you.

BRING OUT AUDIO PACKS AND PLAY MESSAGES ONE AT A TIME

Message 1: "Smoking makes your breath and clothes smell. Everyone can smell a smoker"
Message 2: "Smoking is toxic. Why poison yourself?"
Message 3: "The average smoker spends over two thousand pounds a year on cigarettes. What could you do with that money?"

What do you think of these packs?
What do you think of the messages?
How do you think people your age would react to the messages? **Why?**
Do you think that they are off-putting? **If so, who would be put off and why?**
Do you think that they would have an impact on smokers, if so what impact? **Why?**
Would they impact non-smokers? **Why?**

PART 4: DISSUASIVE CIGARETTES (APPROX: 10 MINS)

We are now going to look at something a bit different again. I have some cigarettes to show you. I would firstly like you to think about cigarettes and what they look like.

How often do you see cigarettes?

Where do you see them?

Who do you see them with?

What are they like?

I will now show you some cigarettes. **Bring out white cigarette and ‘smoking kills’ cigarette and pass them out. Then hand out the toxic cigarette and finally both green cigarettes.** I would like you to have a good look at the cigarettes and pass them around. **Follow-up on any interesting comments.**

(1-Standard imitation cork filter cigarette with warning horizontally on paper, 2 - All white cigarette with warning horizontally on paper, and 3 - dark green cigarette, 4 – cigarette with ‘TOXIC’ warning and symbol)

What do you think of these?

Are there any that you particularly like or dislike? **Why?**

If each of the cigarettes was a person what would they be like? **Why?**

Do they make you feel differently about smoking? **Why?**

Do you think all cigarettes should have a warning on them or be this colour? **Why?**

Do you think any these would appeal to people your age? **Why?**

Do you think that they are off-putting? **To who and why?**

Cigarette Activity:

We are now going to do a couple of activities with the cigarettes now.

I would firstly like you to order the cigarettes by those that you think are the most attractive and the least attractive. **Bring out two pieces of paper one stating most appealing and one least appealing. Give them 5 minutes to complete task. Take in pieces of paper.**

I would finally like you to order them in terms of their strength, by putting them in order of those that you think are the strongest and the weakest. **Bring out two pieces of paper one stating strongest and one weakest. Give them 5 minutes to complete task. Take in pieces of paper.**

I would now like you to order them by those that you think are the most harmful and the least harmful. **Bring out two pieces of paper one stating most harmful and one least harmful. Give them 5 minutes to complete task. Take in pieces of paper.**

Debrief

Ok, you'll be glad to hear that's us finished, so thank you for coming along to the group today and taking part. Before you all head off I would like to very briefly explain what the purpose of the group was today. Tobacco companies design cigarette packs to appeal to certain groups, particularly younger people. The aim of the brown packs that you saw earlier, that have been introduced in the UK, is to put people off from starting to smoke, encourage smokers to think about quitting, and increase the effectiveness of the health warnings on the pack. Tobacco control measures like the packs are important due to smoking being the number one cause of avoidable death in the UK, and with 15,000 young people still taking up smoking each year in Scotland.

Dissuasive cigarettes and talking packs were also discussed to see if there is anything worth considering beyond the unappealing packs in order to make the message on the outside of the pack more prominent.

I have a leaflet for you all to take away with you today, which provides you with information about smoking and the health risks that it comes with. I would like to thank you all again for coming to the group today, you have all been very helpful and I hope you enjoy the rest of your day.

TURN OFF RECORDER AND HAND OUT LEAFLET AND PRIZE DRAW SHEETS

Appendix 11: Teacher information sheet for survey recruitment

Teacher information sheet

Study description:

The University of Stirling is conducting a study to find out young people's attitudes and opinions on cigarettes and cigarette packaging. The researcher (Danielle Mitchell) is looking to recruit participants aged 12-17 to be involved in completing a survey. The survey should take no longer than 20 minutes to complete.

The study is completely voluntary and you are not obligated to take part. Even if you decide to take part now, you do not need to complete the survey, and can withdraw at any time.

If you would like to take part, I have information sheets for you to read, and an information sheet and consent form for you to take home to your parent or guardian. A new data protection law has also recently been put in place in the UK (GDPR), therefore, I also have a privacy statement for you to take away with you and keep. This privacy statement tells you about how the researcher will use and keep your personal data and your rights to access this data.

Process:

- Information sheet – Pupils should be given 5-10 minutes to read and decide if they wish to take part. This should also be taken home by pupils to keep.
- Parent information sheet to be given to pupils to take home, and return within 1 week. However, should any parent opt out after this time, the pupil should not be included in the survey.
- Privacy statement – pupils that are taking part in the study should take the privacy statement home with them.
- The researcher will share the link for the online survey or bring in paper copies after a few weeks of recruitment, and interested pupils, who have not been opted out by parents will have the options of continuing to complete the survey

Appendix 12: Survey participant information sheet

Questionnaire Research: Opinions on Tobacco Packaging and Cigarettes PARTICIPANT INFORMATION SHEET

You are being invited to take part in a study that is being run by the University of Stirling. Before you decide, it is important to understand why the research is being done and what it will involve. Please take time to read this information sheet carefully and discuss it with others if you wish. If there is anything that you are not clear about, or if you would like further information, please ask.

What is the study about?

We want to find out young people's opinions and attitudes towards tobacco packaging and cigarettes.

What will the study involve?

A good way for us to find out people attitudes and opinions is to use a questionnaire. The questionnaire will involve a series of sections and questions asking your opinions on various things including tobacco packaging and cigarettes. The questionnaire should take no longer than 15-20 minutes to fill out. We are also interested in how aspects of your personal life affect how you feel about smoking, so we will also ask you questions about your gender, ethnicity and the types of life you have.

Is the research confidential?

All of the information that you provide will be confidential and anonymous. Your name will not be used on the questionnaire itself or in the analysis and writing up of the results, you will not be identified.

All material such as consent forms and filled out questionnaires will be stored safely at the University of Stirling and only the researcher can access it.

The research will be distributed in various ways, such as reports, articles for scientific journals, conference talks, and the researcher's thesis, but individuals will never be named.

Do I have to take part?

No. It is up to you whether you take part. Filling out the questionnaire is completely voluntary.

Can I withdraw from the study?

Yes. If at any time you feel that you do not wish to continue, you may withdraw from the study.

How do I take part?

If you would like to take part, then complete and return the consent form provided.

What if I change my mind?

You are not obliged to participate in this study and you can choose to opt out at any time.

Are there any risks to me if I take part?

In any study there is a possibility that you may feel uncomfortable talking about some of the topics or there is the risk that you share some personal or confidential information, by chance. However, we do not wish for this to happen. You do not have to answer any question that you feel is too personal or makes you uncomfortable.

Who can I contact for further information?

If you have any questions or would like to discuss the study further, contact Danielle Mitchell (researcher) if queries relate to the study. Should you wish to discuss the research with someone out with the study, please contact the Dean of Faculty:

Researcher	Primary Supervisor
Danielle Mitchell	Dr Crawford Moodie
Faculty of Health Sciences and Sport & Institute for Social Marketing	Faculty of Health Sciences and Sport & Institute for Social Marketing
Pathfoot, Room G10	Pathfoot, Room J2
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Tel: 07794687196	Email: c.s.moodie@stir.ac.uk
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Appendix 13: Parental information sheet and opt-out consent form

CONSENT FORM (PARENT)

Adolescent's attitudes and opinions on tobacco packaging

Dear Parent/Guardian,

My name is Danielle Mitchell and I am studying for a PhD at the University of Stirling. My area of research concerns the use of tobacco packaging to deter smoking among youth. The current study seeks to investigate the impact of tobacco packaging on young people, particularly the age group of the pupils within your child's school (12-17 years). The school that your child attends has been contacted regarding the study and has granted me permission to carry out the research within the school, which I am extremely grateful for. I would now like to take the opportunity to request your permission, for your child to take part in the study.

Although smoking rates have declined among youth in Scotland, it is estimated that 15,000 young people take up smoking each year. National statistics also highlight that 42% of those aged 13-15 thought that it was ok to try smoking. It is clear that smoking remains a public health issue among the young people of Scotland, particularly those between the ages of 12-17. As of May 20th 2017 standardised tobacco packaging became fully enforced. The aim of standardised packaging is to reduce the ability of tobacco packaging to appeal to youth, mislead people about the harms of tobacco and increase the salience of the health warning messages. Given the importance of the age group being investigated, the research presents a valuable opportunity to investigate whether standardised packaging is having the intended impact on one of the key target groups. The research would also provide insight into whether further measures such as dissuasive cigarettes have potential to put youth off smoking, and whether there is value in considering them as a further tobacco control measure.

Your child would be provided with a questionnaire, which will take only 15-20 minutes to complete. The questionnaire will be completely confidential and anonymous, as their name will not be asked at any point other than on the consent form. Which will be filled out before the questionnaire study takes place. Given the importance of deterring this age group from smoking and continuing the decline in prevalence among youth, I would be extremely grateful if you would allow your child to take part in the study.

Danielle Mitchell
PhD Student

Dr Crawford Moodie
Primary Supervisor

Should any parent or guardian NOT grant permission for their child to participate in the study, please fill in this page and have your child return it to the school.

ONLY SEND BACK IF YOU DO NOT WANT YOU CHILD TO TAKE PART

NO, I / We do give permission for our child to participate in Danielle Mitchell's study looking at tobacco packaging to deter smoking

NAME OF CHILD (IN CAPITALS)

.....

NAME OF PARENT OR GUARDIAN (IN CAPITALS)

.....

Appendix 14: Survey participant consent form and questionnaire

CONSENT FORM (PARTICIPANT)

**Questionnaire:
Opinions and Attitudes on Cigarette Packaging and Cigarettes**

Please initial box

1. I confirm that the above study has been explained to me and I have had the opportunity to ask questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.

3. I agree to take part in filling out the questionnaire.

4. I understand that any information I give will be confidential and that only the researcher will have access to this information which will be stored safely at the University of Stirling and destroyed after 10 years.

5. I understand that the findings may be used in articles, but I will not be identified as the study is anonymous.

By signing below you are consenting to taking part in this study. This consent form will be removed from the questionnaire once the researcher collects them to keep your responses anonymous. Once you have signed the consent from continue onto the questionnaire on the following page.

Signature:

Date:

IN CONFIDENCE

Cigarette Packaging and Cigarettes

Self-Completion Booklet

(Please **DO NOT** write your name anywhere on this questionnaire)

Information and Instructions

I would like to find out about young people's opinions on cigarette packaging and cigarettes. These questions are for you to answer on your own. Please answer honestly. **Remember your answers are completely confidential and anonymous. Please read each question carefully.**

The questions below are examples. The questionnaire starts on page 3.

Example questions

Most of the questions can be answered by ticking the box next to or below the answer that applies to you

Q1: Do you like to play video games? Tick one box only

Definitely	Maybe	Not Sure	Maybe Not	Definitely Not
✓				

Some questions may allow you to tick more than one box:

Q2: Which colours do you like? You can tick more than one box

Red	✓
Pink	
Blue	
Black	
Orange	✓
White	
Yellow	

Sometimes there are arrows next to boxes giving you instructions, about which question to answer next. If there are no special instructions, you should answer the next question. You may also be asked to provide extra information in a space below some questions.

Q3: Do you enjoy swimming? Tick one box only

Yes	✓	→ GO TO Q4
No		

If you said yes, write why in the space below

.....

Section 1: About You

This first section will focus on you and your own cigarette smoking behaviour. Please note that I mean traditional cigarettes that you light with a flame and that burn tobacco, including the ones that people buy in packs (factory-made) and the ones they can roll themselves (roll-ups). I do not mean electronic cigarettes or vaping devices.

Q1 Please select your age group.

11 years	
12-13 years	
14-15 years	
16-17 years	
18 years	

Q2 What is your gender?

Female	
Male	

Q3 Does your family own a car, van or truck?

No	
Yes, one	
Yes, two or more	

Q4 Do you have your own bedroom for yourself?

No	
yes	

Q5 During the past 12 months, how many times did you travel away on holiday with your family?

Not at all	
Once	
Twice	
More than twice	

Q6 How many computers does your family own?

None	
One	
Two	
More than two	

Q7 Which is your ethnic group?

White Scottish		Pakistani	
White British		Bangladeshi	
White Irish		Chinese	
White Gypsy/Traveller		Caribbean or Black	
White Polish		Arab	
White Other		Other	
Rather not say			

Q8 Does anyone in your household or friend group smoke? You can tick more than one box

Mother	
Father	
Guardian(s)	
Brother(s)/Sister(s)	
Friends	
No one	

Section 2: Smoking Behaviour

Q9 Which of the following best describes you? Tick one box only and follow instructions.

I have never smoked, not even a puff or two	
I have only ever smoked once or twice but not anymore	
I smoke at least once a month	
I usually smoke between one and six cigarettes a week	
I smoke more than six cigarettes a week	

→ **GO TO Q12**

} → **ANSWER Q10 & 11**

Q10 Where do you get cigarettes from?

I buy them myself from a shop	
I buy them from a friend	
I ask someone else to buy me them	
Someone I know gives me them	
I take them from my parents	

Q11 Have you ever bought, been given or taken a single cigarette?

Yes	
No	

If yes, where did you buy, take or get them from? Please write in the space below

.....

.....

GO TO Q13

Q12 For each of the following statements, tick one box only that best describes you.

	Definitely Yes	Probably Yes	Probably Not	Definitely Not
If one of your friends offered you a cigarette, would you smoke it?				
Do you think you will smoke a cigarette at any time in the next year?				
Do you think you will be smoking by the time you are 18?				

CONTINUE ON TO QUESTION 13

Q13 How important, if at all, do you think each of these things are to young people that smoke when choosing cigarettes on a scale of 1-5? Tick one box only for each.

	1	2	3	4	5
	Not at all important				Very important
Brand Image					
The price					
What celebrities smoke					
The look of the packaging					
What my family or friends smoke					
The look of the cigarette					

Section 3: Cigarette Packaging

Look carefully at the images of each cigarette pack below.



Q14 What do you think about each of these packs on a scale of 1-5? Tick one representing what you think about each pack.

	1	2	3	4	5
	Unattractive				Attractive
Pack 1					
Pack 2					
Pack 3					
Pack 4					
	Cool				Uncool
Pack 1					
Pack 2					
Pack 3					
Pack 4					
	Cheap				Expensive
Pack 1					
Pack 2					
Pack 3					
Pack 4					



Q15 What do you think the person that smokes each pack would be like on a scale of 1-5? Tick one box only for each pack.

	1	2	3	4	5
	Unfashionable				Fashionable
Pack 1					
Pack 2					
Pack 3					
Pack 4					
	Unpopular				Popular
Pack 1					
Pack 2					
Pack 3					
Pack 4					
	Interesting				Boring
Pack 1					
Pack 2					
Pack 3					
Pack 4					



Q16 How harmful to your health do you think that the cigarettes in each pack would be, if at all, on a scale of 1-5? Tick one box only for each pack.

	1	2	3	4	5
	Harmful				Not Harmful
Pack 1					
Pack 2					
Pack 3					
Pack 4					

Q17 To what extent, if at all, does each pack put you off smoking?

	1	2	3	4	5
	Puts me off smoking				Does not put me off smoking
Pack 1					
Pack 2					
Pack 3					
Pack 4					



Q18 If you were to pick one of the packs, which one would you pick? Tick one box only.

Pack 1	<input type="checkbox"/>
Pack 2	<input type="checkbox"/>
Pack 3	<input type="checkbox"/>
Pack 4	<input type="checkbox"/>
None of the packs	<input type="checkbox"/>

If you selected a pack, why did you pick that one? Please write your answer in the space below.

Section 4: Cigarettes

Please look carefully at the cigarettes below.



Q19 How would you rate each cigarette on a scale of 1-5? Tick one box only for each cigarette.

	1	2	3	4	5
	Unattractive				Attractive
Cigarette 1					
Cigarette 2					
Cigarette 3					
Cigarette 4					
	Stylish				Unstylish
Cigarette 1					
Cigarette 2					
Cigarette 3					
Cigarette 4					

Q20 To what extent, if at all, do you think each cigarette would be nice to be seen with on a scale of 1-5? Tick one box only for each cigarette.

	1	2	3	4	5
	Would not be nice to be seen with				Would be nice to be seen with
Cigarette 1					
Cigarette 2					
Cigarette 3					
Cigarette 4					



Q21 How appealing, if at all, do you think each cigarette would be to people your own age on a scale of 1-5? Tick one box only for each cigarette.

	1	2	3	4	5
	Not appealing to people my age				Appealing to people my age
Cigarette 1					
Cigarette 2					
Cigarette 3					
Cigarette 4					

Q22 To what extent would your friends approve of you smoking each cigarette on a scale of 1-5? Tick one box only for each cigarette.

	1	2	3	4	5
	In general my friends would approve of this cigarette				In general my friends would not approve of this cigarette
Cigarette 1					
Cigarette 2					
Cigarette 3					
Cigarette 4					



Q23 To what extent would you approve of your friends smoking each cigarette on a scale of 1-5? Tick one box only for each cigarette.

	1	2	3	4	5
	In general I would approve of my friends smoking this cigarette				In general I would not approve of my friends smoking this cigarette
Cigarette 1					
Cigarette 2					
Cigarette 3					
Cigarette 4					

Q24 To what extent would your close family members think that it was acceptable to smoke each cigarette on a scale from 1-5? Tick one box only for each cigarette.

	1	2	3	4	5
	Totally acceptable				Totally unacceptable
Cigarette 1					
Cigarette 2					
Cigarette 3					
Cigarette 4					



Q25 How harmful to your health, if at all, do you think each cigarette is on a scale of 1-5? Tick one box for each cigarette.

	1	2	3	4	5
	Does look harmful to my health				Does not look harmful to my health
Cigarette 1					
Cigarette 2					
Cigarette 3					
Cigarette 4					

Q26 If one of your friends offered you one of the cigarettes how likely would you be to try each on a scale from 1-5? Tick one box only for each cigarette.

	1	2	3	4	5
	Very Likely				Not at all Likely
Cigarette 1					
Cigarette 2					
Cigarette 3					
Cigarette 4					



Q27 How effective, if at all, would each cigarette be in putting people off smoking on a scale from 1-5? Tick one box only for each cigarette.

	1	2	3	4	5
	Would not put people off starting smoking				Would put people off starting smoking
Cigarette 1					
Cigarette 2					
Cigarette 3					
Cigarette 4					

Q28 To what extent do you agree or disagree with the following two statements? Tick one box only for each.

	Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree
No cigarettes should have a health warning on them					
No cigarettes should be an unattractive colour					

Section 5: Cigarette Pack Warning Messages

Imagine cigarette packs had the following warnings on them.

Warning Message 1	Smoking makes your breath and clothes smell bad. Everyone can smell a smoker.
Warning Message 2	Smoking is toxic. Why poison yourself?
Warning Message 3	The average smoker spends over two thousand pounds a year on cigarettes. What could you do with that money?

Q29 To what extent, if at all, do you think that each warning would encourage smokers to quit? Tick one box for each message.

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
Warning Message 1					
Warning Message 2					
Warning Message 3					

Q30 To what extent, if at all, do you think that each message would put people off starting to smoke? Tick one box for each message.

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
Warning Message 1					
Warning Message 2					
Warning Message 3					

Q31 Which message, if any, do you think would be the most effective in putting people your age off smoking on a scale of 1-5? Tick one box only for each message

	1	2	3	4	5
	Not at all effective				Most effective
Warning Message 1					
Warning Message 2					
Warning Message 3					

Q32 Do you think that cigarette packs should have messages on them that directly relate to young people? Please tick one box

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>
Not Sure	<input type="checkbox"/>



Write your reason for selecting this

.....

.....

.....

THIS IS THE END OF THE QUESTIONNAIRE

Thank you for taking part today. Remember to put your questionnaire into the envelope provided, seal it and hand it back to the researcher or teacher in charge.

Please read the leaflet given to you explaining the dangers of tobacco and providing you with further information on the subject.

Appendix 15: GDPR Privacy Notice for the survey

Privacy Notice

Survey exploring tobacco packaging and cigarettes

The General Data Protection Regulation (GDPR) harmonises data protection and privacy legislation across Europe. It is designed to ensure that personal information is accurate, appropriate, and properly managed to protect peoples' privacy.

This research study is being conducted by the University of Stirling. We are committed to implementing the GDPR in all our activities.

This document is our Privacy Notice; it describes why we collect personal information, how we manage this information, and your rights under the GDPR.

We hope the following information is both helpful and reassuring. If you have any questions / concerns or wish to exercise your GDPR rights, please contact us (see below for contact details).

Why does the researcher need any personal data?

We are collecting some basic personal data (your name and age), some personal data related to smoking (smoking status) and some data that provides information on socioeconomic status. All of the survey questions are optional, so you can choose not to answer a question.

We are conducting a survey to help us understand young people's attitudes and views on tobacco packaging and cigarettes. We are only collecting the information (data) we need to help us do this.

What is the legal basis for processing any data you choose to give us?

As part of the project we will be recording some personal data relating to you. This will be processed in accordance with the General Data Protection Regulation (GDPR). Using GDPR terminology our legal basis for processing your personal data will be 'a task in the public interest'. Agreeing to take part and answering these questions means you understand, and are OK with this.

Strong measures are in place to keep what you say confidential. The only time we may have to break confidentiality is if:

- we believe that someone could be seriously hurt or there is a serious risk to security

What do we do with the answers that you give?

All survey answers will be collected, used, and stored (processed) by the researcher at the University of Stirling. While the data is being processed, it will be kept on a hard drive at the University that only the researcher can access via a password. Any documents containing personal data such as your name, age, gender etc. will kept separate from your survey answers in a locked drawer only accessible to the researcher.

The researcher will make sure to take account of everyone's answers to write reports and research articles and give talks as part of the study.

How long do we keep your data?

Your personal information will be deleted 2 years after the end of the project or once the final report (thesis) is submitted and any paper copies of consent forms will be destroyed at this time.

Your anonymous survey answers will be kept securely for a minimum of 10 years after the end of the project. Data will be archived in the University's data repository DataSTORRE.

What are your rights?

You have the right to request to see a copy of the information we hold about you and to request corrections or deletions of the information that is no longer required. To safeguard your rights, we will use the minimum personally-identifiable information possible. For more information about your rights see the Information Commissioner's Office guidance at: <https://ico.org.uk/for-organisations/guide-to-the-general-data-protection-regulation-gdpr/individual-rights/>

To exercise these rights please use the following contact details.

Contact details

You have the right to lodge a complaint against the University regarding data protection issues with the Information Commissioner's Office (<https://ico.org.uk/concerns/>).

The University's Data Protection officer is Joanna Morrow, Deputy Secretary. If you have any questions relating to data protection these can be addressed to:

Data Protection Officer

University of Stirling

Joanna Morrow

Email: data.protection@stir.ac.uk

Tel:01786 466940

Appendix 16: Focus groups topic guide for Study three

Opinions of marketing and smoking, 2018 - Focus group topic guide

SECTION ONE: GENERAL AWARENESS, ATTITUDES AND OPINIONS ON TOBACCO PACKAGING

INTRODUCTION

- Who we are
- Explain the purpose of the research
- Format of discussion (tape recorder, reminder of confidentiality etc.)
- Introduce selves (age, hobbies, leisure interests)

WARM UP

- To start off, can we go around the room and if everyone could say what activities you like to do in your spare time?
- What about spending money, what kind of things do you spend your money on?
- How do you shop? (shops, online, catalogues etc.)
- What are your favourite shops?
- What products do you buy? Are there any differences? (quality perceptions etc.)
- How do you decide what products to buy?
- What things do shops/companies do to encourage people to buy certain brands?
- What about the way products are packaged – can you think of any examples of product packaging which you think encourages people to buy a certain product?
- and any examples of packaging which likely puts people off?

GENERAL AWARENESS OF TOBACCO PACKAGING AND TOBACCO BRANDS

- **Explore participant's awareness of tobacco packaging, in particular their unprompted awareness of plain packaging.**
- Now thinking about cigarettes and tobacco and how they are packaged.
- What about packaging for cigarettes or tobacco – can you describe what the packaging looks like on them?
 - – probe for details of colour, images, text, is there anything that stands out on the packaging etc
- Are all packs the same, or are there different kinds?
- Have you noticed any changes in packaging for cigs/tobacco recently – probe for what and how long ago and any understanding of why it has changed.
- Can you name any brands of cigarettes or tobacco? Probe for how find out about brands, can they describe what each brand looks like etc
- If a new brand of cigarettes was being launched, how do you think people would get to know about it?
- Where do you see cigarette packs and cigarettes?
- Who do you see with cigarette packs?
- When you're in a shop how do you know cigarettes and tobacco products are for sale?

Follow up on any mention of plain packs, point-of-sale (POS), health warnings, different brands etc. (Do they mentioned e-cigs?)

GENERAL AWARENESS OF TOBACCO PACKAGING SIZES

Explore participant's awareness of pack sizes and changes in rules on this

- Do you know how many cigarettes are in a pack?
- Has this always been the case or has it changed recently?
- Probe for understanding of reasons on pack sizes and views on this.

MAPPING EXERCISES WITH BRANDED V PLAIN

SHOW RANGE OF OLD FULLY BRANDED PACKS AND NEW PLAIN PACKS

Allow time for participants to look at the packs and discuss them, following up on any interesting comments and reactions. Allow respondents time to sort the packs into groups and get them to explain why they have grouped some together and how they differ from those in other groups.

- What do you think of these packs?
- Are there any that you particularly like or dislike?
- If you had to choose a favourite pack from these, which would it be? **Why?**
- Is there anything about the packs that particularly stands out?
- Get each person to pick a plain and a branded pack and put one in each hand – describe how it feels having the branded pack in their hand and then how it feels having the plain pack
- Personification exercise based on 2 branded packs and 2 plain packs based on packs they've got in their hands.
- What is the most noticeable thing on/about each pack – probe for salience of brand name, health warning, design etc.
- Showcards – rank on attractive; harm; tempts to smoke; like
- Probe for understanding of reasons behind plain packaging and support for/against plain packaging

Follow up on any comments about differences (plain vs. branded), warnings, names, colours, pack size and shape etc.

Projective activities: Show cards

HEALTH WARNINGS - BRANDED V PLAIN

SHOW RANGE OF OLD FULLY BRANDED PACKS AND NEW PLAIN PACKS

Continue with mapping and ranking exercises, getting participants to focus on health warnings.

- Look at the range of warnings –
 - what do you notice about them,
 - what differences do you notice, why think they might be different
 - what thoughts/feelings occur to you when you look at each warning?
- Rank the warnings in terms of which ones stand out most / stand out least – use showcards
- Showcards on reactions to warnings – understanding, put off smoking, credibility, make me think about health risks etc
- Probe understanding of and support for warnings and different styles of warnings

Projective activities: Show cards

SECTION TWO: INNOVATIVE TOBACCO PACKAGING TO DETER SMOKING

MAPPING EXERCISES WITH PLAIN PACKS WITH NUMBERS AND NAMES

General perceptions of brand name

I would like you to in general, think about brand names.

- What do you think about brand names?
- Do you think that brand name is important? *Why?*
- Who is brand name important to? *Why?*

I am now going to hand you out a number of images of cigarette packs for you to have a look at. Feel free to pass them around and discuss them together.

HAND OUT IMAGES OF PACKS WITH BRAND NAMES AND PACKS WITH NUMBERS

Mapping and Show card activity

Like before with the other packs, we are going to do a few activities.

GIVE THEM RANGE OF IMAGES OF NAMES AND NUMBERED IMAGES

Lay the images on the mat on the floor and allow time for participants to have a brief look at them. What do they notice about the images? Can they sort them in any way? Allow respondents time to sort the images into groups and get them to explain why they have grouped some together and how they differ from those in other groups.

Are there any names they have come across before?

For a small selection of packs – get them to look at all the information on the image – what, if anything, does it tell them about the cigarettes? Can they imagine what the cigarettes would be like?

I would now like you to order the images in terms of: Like/dislike, Cheap/expensive, tells you a lot about a brand/tells you nothing about a brand.

- So with regards to these two packs, what does this name and number communicate to you? Do they tell you anything about the cigarettes? (e.g. number 1 and Marlboro Ice Blast) (***Use personification techniques if necessary. This will help you establish whether they can draw meaning from the names/numbers or whether they react similarly to all of them***)
- Are there any products that you can think of that use numbers in their brand name? What do their numbers tell you about the product/brand?
- Why do you think companies would use numbers?
- Do numbers mean anything to you?

Numbered packs

There is a reason that some of the packs I am showing you have numbers rather than names. Recently governments in other countries have suggested that the brand name on cigarette packaging should be replaced by numbers. Retailers selling cigarettes would be provided with a price list with all of the brands available. These would be in alphabetical order and would

show the number that will replace each brand name, the number of cigarettes in each pack and the price, but the pack given to customers would have a number and no brand name.

This is what would be the price list given to retailers and the packs given to consumers.

HAND OUT PRICE LIST

- Why do you think that removing the brand name from the pack has been suggested?
- Thinking about the variant name, for example, you have JPS Green Edge and Marlboro Ice Blast, why do you think that tobacco companies use these different variant names, e.g. Green Edge and Ice Blast (**If not already mentioned by participants**)
- How do you think smokers would respond if brand names were removed and numbers introduced instead?
- How do you think non-smokers would respond?
- Do you think that it is a good or bad idea? **Why?**

CONCLUSION AND DEBRIEF

- Thank participants for their time and participation in the group
- Get them to complete short questions on smoking behaviour
- Deliver debrief