An exploration of socioeconomically disadvantaged smokers’ responses to three tobacco control strategies

Ashleigh Guillaumier, BPsyc(Hons)

Submitted for the Degree of Doctor of Philosophy

Submitted June, 2014

School of Medicine and Public Health, University of Newcastle.
Statement of Originality
This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to this copy of my thesis, when deposited in the University Library **, being made available for loan and photocopying subject to the provisions of the Copyright Act 1986.
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Statement of Authorship
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I hereby certify that this thesis is in the form of a series of published papers of which I am a joint author. I have included as part of the thesis a written statement from each co-author, endorsed by the Faculty Assistant Dean (Research Training), attesting to my contribution to the joint publications.

Candidate Signature: _______________________ Date: ____________
List of publications included as part of this thesis


**Paper two:** Guillaumier A, Bonevski B, Paul C, D'Este C, Durkin S, Doran C. What type of anti-smoking advertisement is perceived as more effective? An experimental study with a sample of Australian socially disadvantaged welfare recipients. *Under Editorial Review.*


**Paper six:** Guillaumier A, Bonevski B, Paul C. “Cigarettes are priority”: a qualitative study of how Australian socioeconomically disadvantaged smokers respond to rising cigarette prices. *Under Editorial Review.*
Statement of Contribution: Paper One

I attest that Research Higher Degree candidate Ashleigh Guillaumier contributed substantially in terms of study concept and design, data collection and analysis, and preparation of the manuscript entitled:

“Anti-tobacco mass media and socially disadvantaged groups: A systematic and methodological review”

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“What type of anti-smoking advertisement is perceived as more effective? An experimental study with a sample of Australian socially disadvantaged welfare recipients”

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I attest that Research Higher Degree candidate Ashleigh Guillaumier contributed substantially in terms of study concept and design, data collection and analysis, and preparation of manuscript entitled:

“Paying the price: A cross-sectional survey of Australian socioeconomically disadvantaged smokers’ responses to hypothetical cigarette price rises”

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<th>Description</th>
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<tbody>
<tr>
<td>B&amp;H</td>
<td>Benson and Hedges</td>
</tr>
<tr>
<td>FCTC</td>
<td>Framework Convention for Tobacco Control</td>
</tr>
<tr>
<td>HWL</td>
<td>Health warning label</td>
</tr>
<tr>
<td>IRSD</td>
<td>Index of Relative Socio-economic Disadvantage</td>
</tr>
<tr>
<td>ITC-4</td>
<td>International Tobacco Control Four-Country Survey</td>
</tr>
<tr>
<td>MMC</td>
<td>Mass media campaign</td>
</tr>
<tr>
<td>NRT</td>
<td>Nicotine Replacement Therapy</td>
</tr>
<tr>
<td>NSW</td>
<td>New South Wales</td>
</tr>
<tr>
<td>RA</td>
<td>Research Assistant</td>
</tr>
<tr>
<td>SCSO</td>
<td>Social and Community Service Organisation</td>
</tr>
<tr>
<td>SEIFA</td>
<td>Socio-economic Index for Areas</td>
</tr>
<tr>
<td>SES</td>
<td>Socioeconomic status</td>
</tr>
<tr>
<td>TAFE</td>
<td>Technical and Further Education</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organisation</td>
</tr>
</tbody>
</table>
Synopsis

Although coordinated tobacco control approaches have been successful in reducing population prevalence rates of smoking, tobacco continues to account for significant morbidity and mortality. There also persists an inverse relationship between socioeconomic status and smoking prevalence that is evident both within and between countries. In Australia smoking rates are disproportionately high among groups who experience multiple levels of social and economic disadvantage such as those with low-income, indigenous populations, the long-term unemployed, individuals who are homeless and those with a mental illness. Limited research has assessed the impact of tobacco control interventions among highly socioeconomically disadvantaged groups with high smoking rates. The aim of this thesis was to explore how socioeconomically disadvantaged smokers in Australia respond to and engage with three tobacco control measures (mass media campaigns, plain packaging and health warning labels, and price). Participants were clients accessing non-government social and community service organisations for the provision of crisis aid and social and financial welfare assistance.

Paper one “Anti-tobacco mass media and socially disadvantaged groups: a systematic and methodological review” presents the results of a literature review examining evidence of the differential effectiveness of mainstream and targeted mass media campaigns according to socio-demographic group. Findings varied across studies and outcome measures. While socioeconomically disadvantaged smokers may be less likely to recall general population campaigns compared to more advantaged groups, they may be equally likely to perceive these campaigns as effective and to quit in
response. Overall, there is a lack of methodologically rigorous research investigating the effectiveness of anti-tobacco mass media campaigns, particularly among highly socioeconomically disadvantaged groups. It appears that some mainstream campaigns have the potential to be effective among socioeconomically disadvantaged smokers, however more research is needed.

This paper has been published in the journal ‘Drug and Alcohol Review’.

**Paper two** “What type of anti-smoking advertisement is perceived as more effective? An experimental study with a sample of Australian socially disadvantaged welfare recipients” evaluated responses to key anti-smoking message types (‘why-to-quit’ and ‘how-to-quit’ messages) among highly socioeconomically disadvantaged smokers (n = 354). The influence of nicotine dependence and cessation cognitions on ratings of message effectiveness was also assessed. To effectively promote cessation among socioeconomically disadvantaged smokers, mass media campaigns should include a high rotation of ‘why-to-quit’ television advertisements featuring negative emotive content and graphic imagery. Socioeconomically disadvantaged smokers reported high interest in quitting, but had limited quit success. Research on ways to improve the ‘how-to-quit’ message to capitalise on quit interest, motivate quit attempts and support cessation among socioeconomically disadvantaged groups with high smoking rates is needed. This paper is under editorial review.

**Paper three** “Tobacco health warning messages on plain cigarette packs and in television campaigns: A qualitative study with Australian socioeconomically disadvantaged smokers” describes a qualitative study using six focus groups to explore how socioeconomically disadvantaged smokers engage with health-risk and cessation-benefit messages communicated via
mass media campaigns and cigarette pack health warning labels. Some tobacco warning messages may not be resonating with disadvantaged smokers. Participants reported message avoidance behaviours, self-exempting beliefs towards warning message content and considered themselves to be desensitised to tobacco-related health warnings. Warning messaging should continue to use emotive content and address false beliefs about tobacco health-effects, but might also explore featuring more immediately relatable health concerns and providing more practical cessation advice. Discussions also indicated cigarette plain packaging negatively impacted on product perceptions and experience. This paper is published in the journal ‘Health Education Research’.

**Paper four** “Socioeconomically disadvantaged smokers’ ratings of plain and branded cigarette packaging: an experimental study” tested the potential impact of cigarette plain packaging among socioeconomically disadvantaged smokers (n=354) prior to policy implementation in Australia. The experimental quantitative study used computer touchscreen survey methodology. Plain cigarette packs stripped of branding elements and featuring larger health warning labels were associated with reduced positive brand appeal and purchase intentions. This is the first study of its type providing evidence of the potential effectiveness of cigarette plain packaging policy among disadvantaged smokers. The paper has been published in the journal ‘BMC Public Health’.

**Paper five** “Paying the price: A cross-sectional survey of Australian socioeconomically disadvantaged smokers’ responses to hypothetical cigarette price rises” assessed the use of strategies to minimise the impact of cigarette price rises across two hypothetical price rise scenarios, and measured the
possible influence of financial stress. Consistent intended use of price-
minimisation strategies to manage smoking costs was reported, and financial
stress appeared to have little effect. Larger cigarette price increases (i.e. 20%)
are significantly more likely to motivate smokers to consider quitting compared
with smaller price rises (i.e. 10%). Smokers who indicated they would not
change their smoking behaviour in response to price rises had heavy nicotine
dependence, large weekly tobacco expenditures, and made fewer quit attempts
in the past year indicating they may require additional cessation support. This
paper has been published in the journal ‘Drug and Alcohol Review’.

**Paper six** “Cigarettes are priority”: A qualitative study of how Australian
socioeconomically disadvantaged smokers respond to rising cigarette prices”
used qualitative interviews with socioeconomically disadvantaged smokers
(n=20) to further examine the wider social and economic impacts of increasing
cigarette taxes. To maintain smoking despite rising prices, socioeconomically
disadvantaged smokers reduced household spending, consequently leading to
further social and economic deprivation. Participants reported going without
meals, substituting meal choices and not paying bills. The provision of
additional assistance to smokers who may find it difficult to quit unaided,
particularly during times of tobacco taxation increases, should be considered.
This paper is currently under editorial review.

In **conclusion**, the research contained within this thesis is the first in
Australia to recruit highly socioeconomically disadvantaged smokers to examine
responses to population-level tobacco control measures. The findings highlight
ways current tobacco control interventions might be improved to increase
effectiveness among socioeconomically disadvantaged smokers. Increasing the
effectiveness of tobacco control strategies and adequately monitoring the impact of these interventions among highly disadvantaged groups with the highest smoking rates and documented poor quit success is pivotal to addressing the social gradient in smoking rates.
1. Introduction

Tobacco Control Strategies and Social Disadvantage
1.1 Tobacco-related burden of disease

Tobacco use is the single most preventable cause of death in the world, is listed as a risk factor for six of the eight leading causes of death worldwide, and accounts for approximately five million deaths per year.\(^{(1)}\) Globally, tobacco is responsible for 5% of the burden of disease; more than 11% of deaths from ischemic heart disease and 70% of deaths from lung, trachea and bronchus cancers are attributable to tobacco. In Australia, tobacco is responsible for 7.8% of the total burden of disease, with cancer, COPD and ischemic heart disease accounting for more than three-quarters of this burden.\(^{(2)}\) One-fifth of all cancer deaths and 80% of lung cancer deaths in Australia are attributable to tobacco.\(^{(3)}\) Tobacco use also incurs substantial health care costs and lost productivity each year, impacting on local and global economies.\(^{(4)}\) In Australia alone, the 2004-05 tangible social cost of tobacco use was estimated to total $12 billion dollars, a 30% increase from 1998-99 estimates of just over $9 billion.\(^{(5)}\) Therefore, a need remains for continuing tobacco control efforts, both nationally and internationally.

1.2 Smoking in socially disadvantaged groups

The adult smoking prevalence in many high-income countries, such as Australia, UK, US, Canada and New Zealand, has fallen over the past few decades to levels of around 20%.\(^{(1, 4, 6)}\) However, there is an inverse relationship between socioeconomic status (SES) and smoking prevalence that is evident both within and between countries. Within countries, those with a lower SES report higher levels of smoking (see Table 1). Between countries, less affluent countries report higher smoking rates than more affluent countries\(^{(7)}\) (see Table
The research included in this thesis focuses on the former. That is, high smoking rates among lower SES groups within more affluent countries. As the research for this thesis was conducted in Australia, the remainder of the introduction will focus on describing the Australian situation.

**Table 1.1 Smoking prevalence among low-, mid- and high-SES groups across countries**

<table>
<thead>
<tr>
<th>Country</th>
<th>Low SES</th>
<th>Mid SES</th>
<th>High SES</th>
<th>Total Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OECD High income countries</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia(^{(1/4)})</td>
<td>24.6</td>
<td>17.7</td>
<td>12.5</td>
<td>18.1</td>
</tr>
<tr>
<td>Canada(^{(9/5)})</td>
<td>19.5</td>
<td>17.5 – 18.1</td>
<td>10.2</td>
<td>16</td>
</tr>
<tr>
<td>New Zealand(^{(10/3/c)})</td>
<td>28.2</td>
<td>18.2</td>
<td>10.8</td>
<td>18.4</td>
</tr>
<tr>
<td>United Kingdom(^{(11/3)})</td>
<td>27</td>
<td>20</td>
<td>13</td>
<td>20</td>
</tr>
<tr>
<td>United States(^{(12/3/e)})</td>
<td>31.5</td>
<td>23.4 – 27.4</td>
<td>10.4</td>
<td>22</td>
</tr>
<tr>
<td><strong>OECD Low and middle income countries</strong> (data for men only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mexico(^{(13/f)})</td>
<td>39</td>
<td>38.9</td>
<td>29.5</td>
<td>36.2</td>
</tr>
<tr>
<td>South Africa(^{(13/f)})</td>
<td>43</td>
<td>41.3</td>
<td>37</td>
<td>38.7</td>
</tr>
<tr>
<td>India(^{(13/f)})</td>
<td>46.7</td>
<td>37.8</td>
<td>37.8</td>
<td>35.3</td>
</tr>
<tr>
<td>Vietnam(^{(13/f)})</td>
<td>66.9</td>
<td>43</td>
<td>46.7</td>
<td>51.4</td>
</tr>
</tbody>
</table>

\(^{1}\)Defined by socioeconomic quintile (based on Australian Bureau of Statistics Socioeconomic Index Areas (SEIFA)). \(^{2}\)Defined by education level (<secondary; completed secondary – completed college; completed university). \(^{3}\)Defined by neighbourhood deprivation quintile (based on NZDEP2006quintile). \(^{4}\)Defined by National Statistics Socio-Economic Classification (routine and manual; intermediate; managerial and professional). \(^{5}\)Defined by education level (<High school; high school graduate – some college; college graduate). \(^{6}\)Defined by wealth quintiles (richest; middle; poorest). OECD, the Organisation for Economic Co-operation and Development.

**Defining disadvantage**

In Australia, socioeconomic disadvantage is commonly assessed using Socio-Economic Indexes for Areas (SEIFA). SEIFA comprises four different indexes that measure a number of domains including household income, education, employment, occupation, housing, and other indicators of people’s access to
material and social resources, and their ability to participate in society. SEIFA provides a ranking system that scores each geographic area in Australia in terms of how disadvantaged that area is compared with other areas/regions.\(^{(14)}\) One SEIFA index that shows a strong relation to smoking is the Index of Relative Socio-economic Disadvantage (IRSD). The IRSD measures disadvantage-related variables such as low income, low educational attainment, unemployment, and dwellings without motor vehicles. Siahpush and Borland found a consistent gradient in the relationship between the IRSD and smoking, with the odds of smoking being 99% higher for men and 90% higher for women who lived in the most disadvantaged areas compared to those in the least disadvantaged areas.\(^{(15)}\)

However, the SEIFA measure fails to capture those most at risk of multiple forms of disadvantage in Australia as it uses broad area level indices of disadvantage. Alternatively, the Australian Government’s Productivity Commission report ‘Deep and Persistent Disadvantage’\(^{(16)}\) details the use of income, deprivation and social exclusion and inclusion indicators as methods of defining disadvantage. Overall, these approaches identify individuals experiencing multiple and overlapping forms of disadvantage, which limit their ability to participate in society. The report identifies individuals who are dependent on income support, unemployed people, Indigenous Australians, migrants from a non-English speaking background, public housing tenants, people with a long-term health condition or disability, lone parents and people with low educational attainment as being at highest risk of experiencing deeper or multiple forms of disadvantage.\(^{(16)}\) For the purposes of this thesis, the term
‘socioeconomically disadvantaged’ will be used to describe those individuals and population groups that experience multiple types of disadvantage, deprivation or social exclusion.

Smoking rates for disadvantaged groups within the Australian community are high. For example, 26% - 30% of individuals with low income\(^\text{(8, 17)}\), 50% of indigenous populations\(^\text{(18)}\), 69% - 73% of individuals who are homeless\(^\text{(19, 20)}\), and 35% - 90% of individuals with a mental illness\(^\text{(21-23)}\) are reported to smoke.

### 1.3 What is tobacco control?

The release of the landmark 1964 US Surgeon General’s report on the health consequences of smoking laid the foundation for tobacco control efforts. Since the release of the report many nations have been striving towards a coordinated and comprehensive method for countering the tobacco epidemic. Tobacco control encompasses policies and programs aimed at eliminating or reducing exposure to and use of tobacco in all its forms. Tobacco control efforts can be implemented at the community, state and national level. To combat the tobacco epidemic on a global level the World Health Organisation (WHO) developed a treaty to promote international cooperation and a framework to guide national tobacco control action.\(^\text{(24)}\)

**A coordinated approach to tobacco control: The World Health Organisation’s Framework Convention on Tobacco Control**

The Framework Convention on Tobacco Control (FCTC) was the first global treaty brokered under the auspices of the WHO, entering into force on 27
February 2005. The FCTC aims to uphold the right of all people to the highest standard of health by providing a framework for implementing tobacco control measures that protect present and future generations from the detrimental health, social, economic and environmental impact of exposure to and consumption of tobacco.\(^{(25)}\) To date, 178 states worldwide have become parties to the treaty.\(^{(26)}\) Australia signed the treaty on 5 December 2003, ratifying on 27 October 2004. The treaty was developed in response to the growth and spread of the tobacco epidemic, designed to promote international cooperation and national regulatory action on curbing tobacco use and exposure. The FCTC addresses both demand reduction strategies as well as tobacco supply. Articles 6 – 14 of the WHO FCTC contain the primary demand reduction strategies, including: price and tax measures; protection from exposure to tobacco smoke; regulation of product content, disclosures, and packaging and labelling; education and public awareness programs; bans on advertising and sponsorship; and treatment for tobacco dependence and cessation. Articles 15 – 17 contain the principal supply reduction measures, which cover: illicit trade; sales to and by minors; and support for economically viable alternative activities.

**An overview of tobacco control strategies: The MPOWER Package**

To aid countries in rolling out evidence-based comprehensive tobacco control programs the WHO developed MPOWER, a package of the six most effective tobacco control policies corresponding to one or more of the demand reduction strategies included in the FCTC. These strategies, proven to reduce tobacco use, include: Monitoring tobacco use and prevention policies; Protecting people
from second-hand smoke; **Offering help to quit tobacco use;** **Warning about the dangers of tobacco;** **Enforcing bans on tobacco advertising and sponsorship;** and **Raising taxes and prices of tobacco.** Approximately one-third of the world’s population is now covered by at least one of these tobacco control strategies.\(^{(27)}\)

Table 1.2 briefly outlines each of the six MPOWER policies and their implementation in the Australian context.

Tobacco control program expenditure is independently associated with reductions in adult\(^{(28)}\) and youth\(^{(26)}\) smoking prevalence, indicating the importance of on-going government investment in this area. A recent modelling study suggested that had MPOWER been implemented globally in 2010, the then estimated global adult cigarette smoking prevalence of 23.7% would reduce to 15.4% in 2020 and 13.2% in 2030.\(^{(29)}\)
<table>
<thead>
<tr>
<th>Strategy</th>
<th>Description</th>
<th>Implementation in Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring tobacco use and prevention policies</td>
<td>Article 20 of the WHO FCTC advises that tobacco surveillance should be integrated into national, regional and global health surveillance programs to provide comprehensive and comparable data. Tracking of tobacco use prevalence, exposure to second-hand smoke, evaluation of tobacco control interventions and tobacco industry activities are recommended for effective monitoring systems.</td>
<td>• Tracking of tobacco use prevalence, exposure to second-hand smoke and health and social outcomes of tobacco use is conducted via a number of national health surveys published by the Australian Bureau of Statistics. • Australia submitted reports to the WHO in 2007 and 2010 outlining implementation of FCTC.</td>
</tr>
<tr>
<td>Protecting people from tobacco smoke</td>
<td>Article 8 of the WHO FCTC calls for Parties to adopt, implement and promote smoke-free policies for protection from exposure to tobacco smoke in indoor workplaces, public transport, indoor public places, and other public places, as appropriate.</td>
<td>• In Australia every state and territory bans smoking in enclosed public places, and indoor places such as public transit, office buildings, shopping centres, schools and cinemas are smoke-free. • However, exemptions from indoor bans vary under the different jurisdictions, and local governments also have the power to enact local laws banning smoking in outdoor areas not covered by other state legislation.</td>
</tr>
<tr>
<td>Offering help to quit tobacco</td>
<td>The WHO advises that three types of treatment should be included in any tobacco prevention effort: (i) tobacco cessation advice incorporated into primary health-care services; (ii) easily accessible and free telephone quit lines; and (iii) access to low-cost pharmacological therapy.</td>
<td>• The Smoking Cessation Guidelines for Australian General Practice encourage use of the brief intervention approach known as the ‘5As’ (ask, assess, advise, assist, arrange follow-up) to address smoking with patients in a timely manner as part of routine consultations. • Australia has a quit line service, with a common telephone number, in each state and territory that provides evidence-based information and assistance in a single call (reactive) as well as repeated calls from trained counsellors (proactive). • In Australia nicotine replacement therapies such as patches, lozenges, gum and inhalers are readily available as over-the-counter treatments. o Nicotine patches are listed on the Pharmaceutical Benefit Scheme in Australia, providing low-cost access to this treatment. o Medications such as bupropion and varenicline require a doctor’s prescription for administration and use in Australia.</td>
</tr>
<tr>
<td>Warning about the</td>
<td>The WHO stresses the critical importance of using anti-tobacco counter-advertising campaigns across all forms of media to</td>
<td>• Australia has made use of anti-tobacco mass media campaigns since the 1970s. The first national campaign, the National Tobacco Campaign, was</td>
</tr>
</tbody>
</table>
**Dangers of Tobacco Use**

Educate the public on the full extent of the danger of tobacco. Mass media campaigns and pack warnings play important roles in informing about the dangers of tobacco use, and working to change the image of tobacco. Article 12 of the WHO FCTC suggests countries undertake comprehensive educational and public awareness programmes that advise of the health risks of tobacco consumption and exposure to second-hand smoke, the addictive nature of the product, the benefits of cessation, information on tobacco industry tactics, and access to further information and assistance.\(^{(25)}\)

Article 11 of the WHO FCTC provides international guidelines for cigarette health warnings, requiring highly visible, multiple rotating health warnings that take up no less than 30% of the principal display areas with the suggestion that the warnings should be larger and may include pictures.\(^{(25)}\)

Launched in 1997, and produced significant increases in smoking and health related knowledge and positively influenced attitudes about smoking risks.\(^{(33)}\)

National, as well as state-based campaigns are a fixture of Australian tobacco control.

- Australia first introduced text-based health warning labels in 1973, with the addition of supporting pictorial warnings in 2006.
- With the recent introduction of plain packaging for cigarettes in Australia in 2012, a new set of pictorial and supportive text warnings were introduced, occupying larger portions of the pack.
- Plain packaging was implemented in Australia in December 2012 with the aims of reducing the attractiveness/appeal of the product, increasing the effectiveness of health warnings, reducing misperceptions about the harms of smoking, and reducing smoking rates in the long term.\(^{(34)}\)

**Enforcing Bans on Tobacco Advertising, Promotion and Sponsorship**

Article 13 of the WHO FCTC provides guidelines for comprehensive bans of all direct and indirect forms of tobacco industry advertising, promotion and sponsorship activities.\(^{(25)}\) Bans must extend to all forms of marketing; otherwise the industry will simply redirect resources to other forms of unregulated marketing. The bans are expressly designed to reduce tobacco consumption, as well as protect people, particularly youth, from tobacco marketing activities.

- Australia introduced national bans on tobacco print and media advertising in 1992, and sports sponsorship was prohibited under the Tobacco Prohibition Advertising Amendment Act passed in 2000.
- All Australian states and territories have retail display bans of tobacco products.

**Raising Taxes and Prices of Tobacco**

Article 6 of the WHO FCTC requires countries to implement tobacco taxation and price policies.\(^{(25)}\) Most countries that implement tobacco taxation use an excise duty that sets a required amount payable per specified quantity of product (usually per x number of sticks).\(^{(31)}\) Tobacco taxes are one of the easiest tobacco control policies to implement, facing little opposition from the public, as well as providing government revenue that can be allocated to tobacco control and other health programmes.

- In Australia in 2012, taxes accounted for up to 60% of the purchase price of a pack of cigarettes, and the Australian Government received up to 2.5% of its total revenue from taxes paid on tobacco products.\(^{(31)}\)
1.4 Focus on three tobacco control strategies

The ‘Warning about the dangers of tobacco use’ and ‘Raising taxes and prices of tobacco’ components of MPOWER will be addressed here. This thesis will focus on smokers from socioeconomically disadvantaged groups and three tobacco control strategies: mass media campaigns, plain packaging and taxation.

1.4.1 Mass Media Campaigns in Australia

The behaviour change rationale behind mass media campaigns for health

Mass communication interventions are one of the strategies that can be used to counter messages from the tobacco industry, as well as inform and educate the public about tobacco-related health issues. Mass media anti-tobacco campaigns (also called counter-marketing campaigns) are interventions that involve mass delivery of information through print media, television, radio, outdoor advertising (e.g. billboards), and increasingly, the Internet. An advantage of mass media campaigns is their ability to disseminate well defined behavioural messages to large audiences repeatedly over time, at relatively low cost per head.\(^{(35)}\) The main appeal of communication via mass media is that it reaches a large audience to potentially influence societal norms, knowledge and awareness.\(^{(35)}\)

Mass media campaigns may affect behaviour change through both direct and indirect pathways. Campaigns may aim to directly affect individuals’ decision-making processes by causing cognitive or emotional responses. Educational characteristics of these tobacco control-related advertisements include
highlighting risks of smoking and benefits of quitting, including a quit line telephone number, and reinforcing the positive social norms associated with quitting.\(^{(35)}\) Health behaviour change theories, such as the health belief model, the theory of planned behaviour, and the social cognitive theory, suggest that exposure to persuasive campaign messages will likely provoke self-relevant reactions and behavioural intentions that will eventually lead to behaviour change.\(^{(36)}\) Other indirect pathways for behaviour change include diffusion of the message through institutions that influence social norms and discourse, as well as through an individual’s social network that may in turn then influence their attitudes, beliefs and intentions.\(^{(36)}\)

**Types of mass media campaigns for tobacco control**

Mass communication messages are designed to be both educational and motivational. Anti-smoking media campaigns have generally used four broad message themes: 1) ‘Why’ messages - providing rationale for why to quit usually using serious health effects; 2) ‘How’ messages - providing how to quit practical information; 3) anti-industry messages - using messages to counter or expose tobacco industry behaviour and 4) second-hand smoke messages - demonstrating the detrimental effects of second-hand smoke.\(^{(37)}\) Typically Australia’s mass media campaigns have used graphic negative imagery or personal stories to deliver the ‘why’ message theme.\(^{(35, 38-40)}\) More recently campaigns have coupled advertisements using ‘why’ themes with those delivering ‘how’ information as research shows that these two concepts may be complementary.\(^{(41)}\)
Use of mass media campaigns in the Australian context

In Australia in the last 20 years, government-funded national mass media campaigns have been a prominent feature of public health strategies for tobacco control.\(^{(31, 39)}\) It is estimated that since 2007, $61 million of government funding has been spent on anti-smoking campaigns in Australia.\(^{(38, 40)}\) Anti-tobacco mass media campaigns first appeared in Australia in the early 1970s as a series of low-budget advertisements developed by the then Anti-Cancer Council of Victoria.\(^{(31)}\) State-based campaigns, sponsored by government and non-government organisations, were implemented in the 1980s, with the first national mass media campaign, the National Tobacco Campaign, launching in 1997.\(^{(31)}\) During the period 1997 – 2000, the National Tobacco Campaign produced six advertisements focused on emphasising the health effects of tobacco use and one advertisement depicting a call to the Quitline, all targeted toward smokers aged 18 – 40 years. State-wide and national mass media campaigns continue to be a central part of Australia’s tobacco control strategy. The current National Tobacco Campaign aims to ‘contribute to a reduction in the prevalence of adult daily smoking from 15.9 percent currently, to 10 per cent or less by 2018.’\(^{(42)}\)

Evidence of the effectiveness of mass media campaigns in changing smoking-related knowledge, attitudes and behaviours

Anti-tobacco mass media campaigns have been found to reduce overall tobacco consumption,\(^{(43-45)}\) and can also be used to gain support for the introduction of other tobacco control policies.\(^{(41)}\) Observational research indicates that anti-tobacco mass media advertisements arouse strong negative
emotions, which increase cessation attempts.\textsuperscript{(35, 39, 40, 46, 47)} Awareness of tobacco-related health issues,\textsuperscript{(35, 48)} negative thoughts about smoking,\textsuperscript{(49)} intentions to stop smoking,\textsuperscript{(49)} and calls to national Quitlines\textsuperscript{(50)} have all been found to increase with exposure to national advertising campaigns. Observational studies in Australia have linked increased exposure to ongoing anti-tobacco televised advertising to reductions in adult population smoking prevalence.\textsuperscript{(45, 51)}

**Evaluations have overlooked socioeconomic differences in outcomes**

Despite numerous large-scale observational studies measuring the impact of mass media campaigns on smoking behaviours, attitudes and knowledge, only a limited amount of research has reported differences according to SES. A systematic review assessing evidence on the effectiveness of media campaigns in socially disadvantaged populations across the US, Australia, Canada and similar Western European nations noted a lack of investigation into effectiveness by SES. Three-quarters of the studies reviewed failed to test for differences in intervention effectiveness by SES. Based on the small amount of available evidence, the authors concluded that general population media campaigns are often less effective, sometimes equally effective and rarely more effective in low SES groups compared to groups of higher advantage.\textsuperscript{(52)} A more recent integrative review suggested that while general population campaigns of at least moderate intensity and duration are likely to be effective in motivating quitting across SES groups, further investigation into effective message components is needed as some studies indicated certain messages may increase disparities.\textsuperscript{(43)}
The importance of assessing mass media campaigns among disadvantaged groups

Among socioeconomically disadvantaged smokers, anti-tobacco mass media campaigns may contribute to feelings of social exclusion\(^{(53)}\) and can have unintended impacts, such as presenting cues to smoke.\(^{(54)}\) Smokers from disadvantaged groups are also more likely than other smokers to report an exaggeration of health effects in mass media campaigns,\(^{(55)}\) and to hold self-exempting beliefs in response to health effect messages.\(^{(56)}\)

Consequently, as little is known about campaign responses amongst highly socioeconomically disadvantaged groups, it is possible that mass media campaigns are both failing to reduce, and also contributing to the social gradient in smoking prevalence in Australia. If current mass media campaigns commonly promote messages that have limited effect or are counter-productive for disadvantaged groups, existing campaign messages may need to be modified. Alternatively, new campaigns, which specifically target highly disadvantaged groups, may need to be developed and tested. There is a need for research to help understand the relative effects of the various current mass media campaigns on socioeconomically disadvantaged groups in Australia.

1.4.2 Packaging Regulations: Health Warning Labels and Plain Packaging

Product packaging as a marketing tool

Packaging is an integral component of the marketing strategy for most consumer products. It provides visual communication with the consumer, aids
differentiation of relatively homogenous products, serves to develop brand image and identity, and is used as a form of product advertising.\(^{(57)}\) Packaging is particularly important for tobacco products, which are often referred to as ‘badge products’ given their high degree of social visibility.\(^{(58)}\) Use of badge products associates a user with the brand image, wherein the user takes on some of the character of the brand.\(^{(59)}\) Packaging is a particularly important form of marketing for products, such as tobacco, that face increasing regulations regarding promotion. Tobacco companies have long recognised and exploited the potential of packaging in communicating with and selling to consumers. In the past the tobacco industry has shown that it can partially subvert advertising restrictions by using the pack as promotion.\(^{(58, 60, 61)}\)

**Pack design and how the tobacco industry has used it to promote the product**

The cigarette pack is considered an important tool by the tobacco industry for product promotion and brand ingratiation, particularly in countries with tighter restrictions on tobacco marketing.\(^{(58)}\) Increasingly in Australia the point of sale is the only remaining overt avenue of advertising left to promote tobacco products. In the period following the introduction of advertising restrictions in the UK, the tobacco industry simply diverted their marketing dollars to focus on the pack as promotion. Instances of pack changes and innovation increased markedly following introduction of other forms of marketing restrictions.\(^{(62)}\) The tobacco industry has experimented with various aspects of the pack. For example, colour, descriptors and pack construction (shape and opening) can be used to communicate with consumers, build brand image and identity, and increase
product consumption and market share.\(^{(57, 58)}\) Novel shapes and pack constructions increase consumer attention at the point of sale.\(^{(57, 62, 63)}\) Product descriptors and pack colours impact on perceptions of cigarette strength and taste.\(^{(64-66)}\) Pack design and brand imagery can be used to appeal to consumer target groups such as women, low-income smokers and young adults.\(^{(57, 58, 63)}\)

Tobacco industry use of pack aspects such as colour and descriptors has been found to mislead consumers about the health risks of tobacco use by influencing perceptions about product harm.\(^{(67)}\) In markets with increasing advertising regulations and restrictions, tobacco packaging is critical for product promotion and the communication of brand imagery. Consequently, the tobacco industry has strongly opposed any regulations to their product packaging.

**Introduction of health warning labels**

Health warnings on tobacco product packaging are guaranteed to reach most if not all product users and contribute to countering the marketing impact of the pack design.\(^{(30)}\) Although packs have been the ‘silent salesman’ of the tobacco industry, packaging space can also be appropriated under tobacco control regulations and used as a vehicle to deliver warning messages about the health effects of tobacco. Health warnings on tobacco packaging also have the added advantage of disrupting brand image communication\(^{(68)}\) and reducing the appeal of tobacco products among adults and youth.\(^{(69)}\) The text-based general health warning statement “Warning – smoking is a health hazard” first appeared on tobacco product packaging in Australia in 1973, and further expanded to four rotating warnings occupying 15% of the front of pack in 1985.\(^{(31)}\) In 1995 warning statements were strengthened requiring six rotating text warnings on
the top 25% of the front of pack, corresponding explanatory health warning information on the top 33% of the back of pack, information about the tar, nicotine and carbon monoxide content of cigarettes, and the national quit line number printed on packs. Finally, in 2006, graphic picture health warnings were implemented. Fourteen rotating warnings comprising graphics, warning statements and explanatory messages covered 30% of the front and 90% of the back of cigarette packs, with graphics appearing on both front and back of packs. The warnings were implemented with the aims of increasing consumer knowledge of health effects of smoking, encouraging smoking cessation and discouraging uptake or relapse.\(^{(70)}\)

**Evidence on health warning labels**

In a comprehensive review of the available evidence on the impact of health warning labels, Hammond (2011) concluded health warning labels increase knowledge of health effects, promote cessation among smokers, and discouraging uptake among youth.\(^{(69)}\) Following the introduction of stronger and more prominent health warning statements on Australian cigarette packs in 1995, awareness of warnings, knowledge about constituents of tobacco smoke, and belief about warnings increased among smokers compared to non-smokers.\(^{(71)}\) Additionally, smokers reported being affected by warnings, reducing their consumption.\(^{(71)}\) Similarly, the implementation of graphic health warning labels in Australia in 2006 was accompanied by an increase in smoker awareness of pack warnings and knowledge of specific health consequences of smoking.\(^{(72-74)}\) Graphic health warnings also encouraged cessation with smokers reporting increased thoughts of quitting,\(^{(73, 74)}\) a reduction in cigarette
consumption, and reporting that warnings aided in quit attempts. Health warning labels that are larger and use graphic images are significantly more effective than smaller text-only warnings.

The latest tool against tobacco marketing: plain packaging

Standardised, homogenous packaging is a formidable threat to the marketing of tobacco products. The tobacco industry has subverted promotion and advertising restrictions by engaging the pack as promotion, and using pack design elements to undermine the effectiveness of health warnings that appear on the pack. Plain packaging for tobacco products has been suggested in response to such activities. Plain packaging, also known as standardised or generic packaging, restricts the use of brand-related colours, brand imagery, corporate logos and trademarks on tobacco packaging. Tobacco manufacturers can print brand names in a mandated size, font and location, in addition to required health warnings and other legally mandated product information such as toxic constituents, tax seals or package contents.

In 2010 the Australian Government announced legislation mandating plain packaging for tobacco products. The Tobacco Plain Packaging Act 2011 requires that tobacco products sold in Australia from 1 December 2012 must be sold in plain packaging. The Australian plain packaging policy was implemented with the aims of improving public health by discouraging uptake and use of tobacco products, encouraging cessation, discouraging relapse and reducing exposure to tobacco smoke by: reducing product appeal; increasing the
effectiveness of health warning labels; and reducing misperceptions about the harms of smoking. \(^{34}\)

**Evidence on plain packaging**

Evidence from experimental plain packaging studies conducted in Australia, \(^{78, 79}\) New Zealand, \(^{80}\) the US, \(^{64}\) and the UK \(^{66}\) shows that various examples of plainer tobacco packaging featuring larger health warnings and fewer branding elements result in reductions of false beliefs about health risk, increases in cessation intentions, increased awareness of health warnings, and reductions in perceived product appeal and attractiveness when compared to existing branded packs.

**Importance of examining strategy with socioeconomically disadvantaged groups**

Regulating tobacco packaging to prevent product promotion and effectively communicate the risks and health effects of tobacco use is extremely important. There is also a need to examine the impact of this strategy among socioeconomically disadvantaged smokers. All research informing the development of plain packaging policy was conducted with general population samples, and there is currently no research evaluating this measure with socioeconomically disadvantaged groups. Additionally, there is limited research into differential effects of health warning labels among socioeconomically disadvantaged groups. Based on the findings of his systematic review Hammond (2011) suggested that the use of pictorial health warnings may reduce SES differences in impact compared to text-only warnings due to the
requirements of adequate literacy levels in text-based warnings.\(^{(69)}\) Hammond (2011) also noted that due to social and individual contextual factors, larger numbers of rotational packet health warnings may allow for the targeting of sub-populations.\(^{(69)}\) In summary, graphic health warnings on tobacco packaging are the most direct way of communicating risk to smokers, and plain packaging for tobacco products has the potential to increase the effectiveness of this message delivery. However, it is currently unclear how vulnerable, disadvantaged groups with high smoking rates, who have been an identified target group of the tobacco industry, might respond to plain packaging and what elements of health warning messages have the most impact with these smokers.

1.4.3 Tobacco Taxation and Pricing Increases

*Rationale for taxation and pricing policies: a behavioural perspective*

A fundamental aspect of economic theory is the principle of the downward sloping demand curve demonstrating that as the price of a good or commodity increases, the consumption or demand for that commodity decreases.\(^{(81)}\) Price elasticity refers to the extent that consumption or use of a product falls after prices are increased.\(^{(31, 82)}\) Demand for tobacco products is not as elastic as that for other consumer products, owing to its addictive nature. Despite this, modelling studies and comprehensive reviews of the evidence estimate that price elasticity in high-income countries ranges from approximately -0.2 to -0.6, indicating that a 10% increase in prices would result in reduced tobacco consumption of about 4%.\(^{(82-84)}\) Tobacco taxation policies also have the
advantage of raising revenue that can be used to support other tobacco control and health promotion efforts.

**History of cigarette taxation and pricing in Australia**

Typically, tobacco taxation involves applying an excise duty that sets a required amount payable per specified quantity of product; a number of ad valorem taxes may also be applied. In Australia in 2012, taxes made up around 65% of the final purchase price of a typical pack of cigarettes, consisting of an excise duty tax of approximately 54.7% and a 9.1% goods and services tax.\(^{(31)}\) As outlined below, this figure is set to increase over the 2013 – 2016 period.

Excise taxes have been imposed on tobacco products by the Australian Government since 1901. Up until 1999, excise duty was levied according to the weight of the manufactured product (excluding packaging). From 1 November 1999, cigarettes have been subject to a per stick excise duty, and at that time cigarette prices rose as a result of the change in the taxing structure. A further price increase occurred with the introduction of the Goods and Services Tax (GST) on 1 July 2000.\(^{(31, 85)}\) Additionally, since the Australian Government linked federal excise and customs duty with the Australian Consumer Price Index in 1983, excise duty has increased every six months in line with the index. In 2010, the Australian Government implemented a 25% increase in the excise and custom duty applied to tobacco products.\(^{(31, 85)}\) The 2010 tax rise increased the real price of cigarettes by around $2.20 for a pack of 30 cigarettes. In August 2013, the Australian Government announced it would introduce staged 12.5% tobacco tax increases beginning on 1 December 2013, with further
increases applied on 1 September 2014, 1 September 2015 and 1 September 2016.

Evidence for pricing policies

There is sufficient evidence of the effectiveness of increased tobacco taxes and prices in reducing consumption and prevalence of use by way of promoting cessation and reductions in current tobacco use, and preventing smoking initiation among youth.\textsuperscript{(86)} In Australia, Scollo et al.\textsuperscript{(87)} assessed the impact of tobacco tax reforms during the National Tobacco Campaign in the late 1990s. Through observation of industry retail prices and population telephone surveys, the authors found the recommended retail price and actual price rises of 25\% during the National Tobacco Campaign period resulted in reductions of smoking prevalence, heaviness of smoking, and consumption. More recently, the impact of a 25\% tobacco tax increase in Australia in 2010 was monitored via a continuous tracking telephone survey and found that smokers’ cessation cognitions and quit attempts increased following the price hike.\textsuperscript{(88)}

Evidence with low socioeconomic status samples

In addition to effectiveness in the general population, there is strong evidence to suggest that low SES groups are more responsive to price increases, with this policy having the potential to reduce the existing socioeconomic disparity in smoking rates.\textsuperscript{(86, 89-91)} A comprehensive review found strong evidence that tobacco use in lower SES populations is more responsive to tax and price increases than higher SES populations, indicating that while some studies find no difference, the majority show differential effectiveness for SES.\textsuperscript{(86)} Thomas et
al.’s\(^{(91)}\) systematic review came to similar conclusions, indicating that increasing
tobacco prices had the strongest evidence for a social gradient in effectiveness
favouring lower SES groups. For a closer inspection on the relationship
between price and smoking prevalence, Siahpush et al.\(^{(90)}\) analysed Australian
monthly smoking and price data across income groups over the period 1991 –
2006. The study found a significant negative association between cigarette
prices and smoking prevalence, strongest for lower income groups. A $1
increase in the price of tobacco was associated with smoking prevalence rate
decreases of 2.6%, 0.3% and 0.2% in low-, middle- and high-income groups
respectively. Hence, while price increases are an effective population-wide
tobacco control strategy, there is strong evidence to suggest that increases in
the real price of tobacco are more effective in reducing the smoking prevalence
in low compared to high SES groups.

**Unwanted consequences**

Low SES populations are more likely to experience higher levels of financial
stress,\(^{(92)}\) and this is negatively associated with cessation.\(^{(93)}\) A modelling study
predicted impact of proposed price increases in the US and Australia on
smoking prevalence rates. While taking into account the effect of financial
stress on cessation, the study concluded that increasing levels of taxation on
tobacco products may result in greater levels of financial stress for those who
are least equipped to deal with it.\(^{(89)}\) The authors predicted that this increase in
financial stress in lower SES groups would likely reduce the effectiveness of this
strategy in disadvantaged groups as financially stressed smokers are less likely
to quit.\(^{(89)}\) Thus, whilst increases in taxes that raise the price of tobacco are an
effective measure for reducing smoking prevalence, particularly in lower SES
groups, they also increase the financial stress experienced by disadvantaged
smokers. Given that financial stress is negatively associated with cessation, and
that low SES smokers are more likely than higher SES groups to engage in
price minimising behaviours in the face of rising tobacco costs in order to
continue smoking,\(^{(94)}\) investigation into the wider impact of price rises on those
continuing to smoke is needed.

1.5 Research Aims
The overall aim of this thesis was to explore aspects of three tobacco control
strategies used in Australia (mass media campaigns, plain packaging and
product price) with smokers from socioeconomically disadvantaged groups. The
intention is to add to the evidence base regarding the potential impact of these
strategies with groups that continue to report high levels of smoking. A series of
inter-linked approaches including literature review, cross-sectional surveys and
experimental and qualitative research studies is presented in six publications
which form the basis of this thesis. In all studies, samples were recruited from
socioeconomically disadvantaged groups accessing various forms of welfare
support from Australian non-government social and community service
organisations. In addition to low income, the samples recruited in this research
received welfare support for homelessness, mental illness, rehabilitation
following incarceration, unemployment and substance use, providing unique
information on the tobacco control strategies investigated.
Specifically this dissertation aims to:

1. Critically review the literature of the effectiveness of mass media campaigns with smokers from socioeconomically disadvantaged groups (Paper One)

2. Examine which type of anti-smoking mass media campaign message is perceived as effective in promoting cessation among highly socioeconomically disadvantaged smokers (Paper Two)

3. Explore how disadvantaged smokers relate to health-risk and cessation-benefit messages communicated via television advertisements and health warning labels on tobacco packs (Paper Three)

4. Assess the potential impact of Australian plain cigarette packaging policy on perceptions of brand appeal and purchase intentions among socioeconomically disadvantaged smokers (Paper Four)

5. Measure the use of price-minimisation strategies to maintain smoking during price increases and the potential impact of the experience of financial stress (Paper Five)

6. Explore how the cost of smoking is managed on very limited budgets, and the impact this has on material deprivation, financial stress and cessation cognitions (Paper Six)

A large sample of participants was recruited to complete one touchscreen computer cross-sectional survey, providing data for Papers Two, Four and Five. The survey included questions on a number of topics presented in the following order: demographics, smoking profile and quit history, self-exempting beliefs,
tobacco control strategy – mass media campaigns, tobacco control strategy – price, tobacco control strategy – plain packaging, and, survey acceptability. A random sub-sample of participants who completed the survey was invited to participate in face-to-face interviews presented in Paper Six. A separate, independent sample of participants was recruited for the focus groups presented in Paper Three. Where necessary, additional information is provided linking the papers and an overall discussion of the research and its implications is presented at the end of this thesis.
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2. Anti-tobacco mass media and socially disadvantaged groups: a systematic and methodological review (PAPER ONE)

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The definitive version is available at:


Associated appendices:
14. Appendix A: Systematic literature review materials
   14.1 – Review search strategy table
   14.2 – Quality assessment tool for quantitative studies
   14.3 – Quality assessment tool for quantitative studies dictionary
2.1 Abstract

Issues. Only a limited amount of research has been conducted to explore whether there are socioeconomic status differences in responses to mass media. However, the methodological quality of this evidence has not been assessed, limiting confidence in conclusions that can be drawn regarding study outcomes. A systematic review of the effectiveness of anti-tobacco mass media campaigns with socially disadvantaged groups was conducted, and the methodological quality of included studies was assessed.

Approach. Medline, The Cochrane Library, PsycInfo, Embase and Web of Science were searched using MeSH and keywords for quantitative studies conducted in Western countries prior to March 2012. A methodological quality assessment and narrative analysis of included studies was undertaken.

Key Findings. Seventeen relevant studies (reported in 18 papers) were identified; however, weak study designs and selection bias were common characteristics, limiting strong conclusions about effectiveness. Using predominantly non-cessation related outcome measures reviewed papers indicated mixed results for mass media tobacco control campaign effectiveness among various social groups. Most studies assessed mass media impact on low socioeconomic status groups rather than highly socially disadvantaged groups.

Implications. Methodological rigour of evaluations in this field must be improved to aid understanding regarding the effectiveness of mass media campaigns in driving cessation among disadvantaged groups.
**Conclusion.** The results of this review indicate a gap in methodologically rigorous research into the effectiveness of mass media campaigns among socially disadvantaged groups, particularly the highly disadvantaged.
2.2 Introduction

Despite significant falls in general population smoking prevalence rates in Australia, smoking is responsible for 7.8% of the national burden of disease.\(^{(1, 2)}\) Smoking-related morbidity and mortality is an acknowledged cause of significant population health disparities.\(^{(3)}\) A central aim of comprehensive tobacco control programs is to identify and eliminate tobacco-related disparities among population groups.\(^{(4-7)}\)

Mass media (e.g. radio, television, billboards and newspapers) is a persuasive tool for communicating messages to the community, shifting attitudes, and in some cases influencing health behaviours.\(^{(8)}\) Campaigns are designed to either directly change individual smoking behaviour or to spur a process of change in social norms around smoking.\(^{(9)}\) Awareness of tobacco-related health issues,\(^{(10, 11)}\) negative thoughts about smoking,\(^{(12)}\) cessation intentions\(^{(12)}\) and calls to quitlines\(^{(13)}\) have been found to increase with exposure to national advertising campaigns. In Australia, observational studies link increased exposure to ongoing anti-tobacco televised advertising to the reduction in adult population smoking prevalence rates.\(^{(14)}\)

In order to avoid exacerbating smoking-related health inequalities, mass media campaigns must have equal or greater impact with lower socioeconomic groups than they do for higher socioeconomic groups. Niederdeppe et al.\(^{(15)}\) reviewed the literature examining media campaigns to promote cessation among low socioeconomic status (SES) populations. While noting a clear lack of
investigation in this area, the review concluded that media campaigns are often less effective, sometimes equally effective and rarely more effective among low SES relative to high SES groups.\textsuperscript{(15)} The authors identified a logic framework specifying variations in access and exposure, motivational response and opportunities to act following mass media interventions may lead to SES disparities in campaign effects on sustained smoking cessation.\textsuperscript{(15, 16)} Campaigns successful for low SES smokers were implemented alongside larger tobacco control programs.

The Niederdeppe et al.\textsuperscript{(15)} review, while important and influential, did not assess the methodological quality of the evidence used to evaluate effectiveness of cessation campaigns among low SES populations. Methodological quality is a key consideration for interpreting empirical evidence and providing practice recommendations.\textsuperscript{(17)} Poor methodological quality may lead to type I or type II error,\textsuperscript{(18)} limiting confidence in conclusions that can be drawn regarding study outcomes. In addition to examining the methodological quality of this literature, it is important to include the relevant studies published since the Niederdeppe et al. review.

The aim of this paper is to:

1. Systematically review the published evidence of the effectiveness of mass media campaigns (with the primary purpose of encouraging smokers to quit) with smokers from socially disadvantaged groups in terms of:
a. The differential effectiveness of mass media campaigns according to sociodemographic group
b. The effectiveness of campaigns targeted towards disadvantaged groups.

2. Critique the methodological quality of the evidence for the effectiveness of mass media campaigns with disadvantaged groups.

2.3 Method

Search Strategy
The electronic databases Medline, The Cochrane Library, PsycInfo, Embase and Web of Science were searched for relevant studies published prior to March 2012. ‘Smoking’, ‘disadvantage’ and ‘mass media and social marketing’ related Medical Subject Heading terms and keywords were combined using the AND command (see Appendix 14.1 for complete list). Previous reviews in the area and reference lists of retrieved articles were manually searched.

Inclusion Criteria
We conducted a search for literature presenting original data assessing the effects of anti-tobacco mass media campaigns and equity with adults aged over 18 years in western countries (Australia, US, UK, Canada and Western Europe). To meet inclusion, studies were required to assess general campaign impacts by some measure of equity or disadvantage, or investigate campaigns targeted towards disadvantaged groups. We restricted the review to quantitative studies published in English. The Cochrane Collaboration definition of mass media was used where mass media are channels of communication such as
television, radio, newspapers, billboards, posters, leaflets or booklets intended to reach large numbers of people, and which are not dependent on person-to-person contact. The purpose of the mass media campaign must be primarily to encourage smokers to quit.\(^{(19)}\)

**Defining Socially Disadvantaged Groups**

Social disadvantage can be measured many ways.\(^{(20)}\) In this review studies were included if they described their sample according to social class, income, education, occupation, ethnic/racial group and/or socioeconomic status (measured as a global construct), or if they described samples with characteristics associated with high smoking prevalence and socio-economic disadvantage such as: people with a mental illness and homeless people.

**Data Extraction**

The titles and abstracts of all identified papers were assessed for relevance independently by two reviewers and rejected on initial screening if the study did not meet the inclusion criteria. Studies meeting the inclusion criteria were subject to a full text review, and the reference lists of these studies were searched.

**Methodological Quality Assessment**

The methodological quality of studies was summarised using the Effective Public Health Practice Project Quality Assessment Tool\(^{(21)}\) for quantitative studies (see http://www.ephpp.ca/Tools.html). This tool is recommended for use with public health, health promotion and prevention research\(^{(22, 23)}\) and although
it has limitations when used with studies describing behavioural outcomes or population-level interventions (e.g. inability to blind, limited validity of self-report), it is the most appropriate tool available. Studies are rated as ‘weak’, ‘moderate’, or ‘strong’ against six components: selection bias (sample representativeness and consent rate); study design; control of confounders; blinding (whether assessors were blind to participant condition and whether participants were blind to the research question); data collection methods (whether data collection tools used were shown to be valid and reliable), and; withdrawals and drop-outs (whether reasons for attrition and final follow-up numbers were reported).

**Data Synthesis**

Due to variations in outcome measures between studies, a narrative analysis was undertaken. To address Aim (i) studies were defined as either assessing the differential effectiveness of general mass media campaigns or the effectiveness of campaigns targeted to disadvantaged population sub-groups. A campaign was deemed successful if it produced statistically significant differences between groups in 1) campaign exposure, e.g. awareness, recall, Gross Rating Points or Targeted Audience Rating Points, 2) campaign-related perceptions, e.g. perceived effectiveness, 3) motivational responses, e.g. quit interest and intentions, calls to quitlines, quit attempts and/or 4) cessation. To address Aim (ii) studies were rated as ‘weak’, ‘moderate’, or ‘strong’ against the six components of the quality assessment tool with the exception of the ‘blinding’ category which was not applicable for mass media interventions as generally participants cannot be blinded to whether or not they have received a
mass media message. Due to this exception, the global rating (weak, moderate or strong) based on the sum of ratings across the six components, was not employed.

### 2.4 Results

**Search Results**

A total of 529 references were found from the original literature search, with 52 papers identified as potentially eligible. A search of the reference lists of these papers produced an additional ten papers. Following full-text review 17 studies (reported in 18 papers) were included in the review (see Figure 2.1).

![Flow chart of search strategy and study selection.](image)

**Figure 2.1** Flow chart of search strategy and study selection.
Description of Included Studies

Of the seventeen studies included, ten were conducted in the US,\(^{(24-34)}\) five in Australia,\(^{(35-39)}\) and two in New Zealand.\(^{(40, 41)}\) The primary marker of disadvantage was ethnicity, reported in ten papers.\(^{(24, 25, 27-29, 32-35, 39-41)}\) Ethnic groups included African Americans, Hispanic Americans, Vietnamese Americans, Australian Aboriginals and New Zealand Māori. Disadvantage was also defined by education in seven papers,\(^{(25, 29-34, 36)}\) income in two studies\(^{(30, 31)}\) and a global measure of SES in two studies.\(^{(26, 37, 38)}\) The main outcomes assessed were campaign exposure and perception measures, motivational response and cessation.

Effectiveness of general anti-tobacco campaigns according to socio-demographic group

The studies assessing comparative effectiveness of general anti-tobacco campaigns amongst socio-demographic groups are summarised in Table 2.1. Two studies used measures of campaign exposure and were either less likely\(^{(29, 30)}\) or equally likely\(^{(30)}\) to be recalled by disadvantaged versus more advantaged smokers. Four studies looked at campaign perceptions: three found no differences in the perceived effectiveness of campaigns regardless of socio-demographic group,\(^{(25, 29, 30)}\) and a fourth found Indigenous Australians perceived a variety of TV ads as more effective than did non-Indigenous Australians, with the exception of two graphic health warning style ads that were perceived equally effective.\(^{(39)}\) Motivational responses of smokers were assessed in five studies, with mixed results. Siahpush et al.\(^{(37)}\) found low SES smokers were less likely to call a quitline in response to seeing an anti-tobacco
campaign, while Durkin et al.\textsuperscript{(38)} reported that although higher emotion narrative ads increased quitline calls, there was no significant difference across SES groups. Niederdeppe et al.\textsuperscript{(31)} reported a campaign that featured ‘keep-trying-to-quit’ and ‘how-to-quit’ messages was equally effective in promoting quit attempts among smokers regardless of income or education, and Stewart et al.\textsuperscript{(39)} reported a variety of TV ads were equally effective in increasing quit intentions amongst Indigenous and non-Indigenous smokers. Pierce et al.\textsuperscript{(34)} also recorded quitline call rates and caller demographics; however no significance testing on effectiveness was conducted. Finally, four studies assessed the effectiveness of campaigns in promoting cessation: three campaigns were equally effective,\textsuperscript{(28, 31, 36)} and one campaign was more effective\textsuperscript{(26, 32, 33)} in reducing smoking rates in disadvantaged smokers compared to more advantaged smokers.
Table 2.1: Studies assessing differential effectiveness of mass media campaigns according to socio-demographic group.

<table>
<thead>
<tr>
<th>Study Year Country</th>
<th>Study type</th>
<th>Socio-demographic groups compared</th>
<th>Intervention</th>
<th>Exposure &amp; Outcome Measures</th>
<th>Analyses</th>
<th>Results (differences found in compared groups?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Davis et al., 2011 US (25)</td>
<td>Observational</td>
<td><strong>Ethnicity</strong>: W (81.9%), AA (5.3%), H (5.7%), unknown (7.2%). <strong>Education</strong>: &lt;high school (2.2%), high school (20.4%), some college (41.1%), college graduate + (36.4%)</td>
<td>P’s viewed anti-smoking TV ads from each of 4 categories: 1) why to quit – graphic images, 2) why to quit – testimonial, 3) how to quit, and 4) anti-industry.</td>
<td><strong>Campaign perceptions</strong>: 4-item perceived effectiveness scale (persuasiveness, believability, processing).</td>
<td>Descriptive and multivariable analyses</td>
<td><strong>Campaign perceptions</strong>: Ethnicity: (+) Education. (0)</td>
</tr>
<tr>
<td>Durkin et al., 2009 US (26)</td>
<td>Observational</td>
<td><strong>SES</strong>: low SES (24.6%), mid SES (30.9%), high SES (29.8%).</td>
<td>134 anti-smoking ads aired during baseline data collection (1999-2002). Ads categorised as: 1) highly emotional or personal testimonial ads; 2) comparison ads</td>
<td><strong>Cessation</strong>: 1-month point prevalence abstinence (measured at 2-year follow-up)</td>
<td>Multivariate logistic regression</td>
<td><strong>Cessation</strong>: (+) for emotionally evocative ads only.</td>
</tr>
<tr>
<td>Durkin et al., 2011 Australia (38)</td>
<td>Observational</td>
<td><strong>SES</strong>: low SES (18.6%), mid-low SES (16.19%), mid-high SES (28.53%), high SES (36.68%).</td>
<td>During the period 10 December 2006 – 31 December 2008, 13 ads designed to motivate smokers to quit (and included the Quitline number) were aired in the state of Victoria. Ads categorised as: 1) high emotion narrative; 2) high emotion non-narrative; 3) low emotion narrative; 4) low emotion non-narrative</td>
<td><strong>Motivational response</strong>: number of calls to Quitline during study period by ad type</td>
<td>Negative binomial regression</td>
<td><strong>Motivational response</strong>: (0) (non-significant trend for interaction between SES and high emotion narrative TARPs)</td>
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<tr>
<td>Study Year Country Ref. #</td>
<td>Study type</td>
<td>Socio-demographic groups compared</td>
<td>Intervention</td>
<td>Exposure &amp; Outcome Measures</td>
<td>Analyses</td>
<td>Results (differences found in compared groups?)</td>
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<tr>
<td>Macaskill et al., 1992 Australia (36)</td>
<td>Observational</td>
<td>Pre (conducted 1983) and post (conducted 1988) cross-sectional surveys</td>
<td>Education: 1) Up to 9yrs; 2) Intermediate high school; 3) Completed high school; 4) Some university</td>
<td>Mass media-led anti-smoking campaigns conducted in the 1980s in two cities: Sydney and Melbourne.</td>
<td>Cessation: 5 year declines in smoking prevalence</td>
<td>Multiplicative regression models as well as Mantel-Haenszel age-adjusted rate ratios and 95% CI</td>
</tr>
<tr>
<td>McAllister et al., 2004 US (28)</td>
<td>Quasi-experimental pre/post cross-sectional design.</td>
<td>Followed-up sample</td>
<td>Ethnicity: W (82.9%); AA (8.3%); H/Mexican/Latino (6%); Asian (0.2%); other (2.6%).</td>
<td>Media campaign: combined TV, radio, newspaper and billboard ads. Community programs: cessation counselling services and pharmacological therapy.</td>
<td>Campaign exposure: self-reported frequency of exposure to media messages over last 30 days.</td>
<td>Chi-square analyses</td>
</tr>
<tr>
<td>McCausland et al., 2009 US (29)</td>
<td>Observational</td>
<td>Three cross-sectional telephone surveys that were geographically separate and each targeted one ethnicity.</td>
<td>Ethnicity: W (N = 435); AA (N = 301); H (N = 271) Education: ≤High school: W(40%), AA (54%), H (67%). Some college: W (27%), AA (26%), H (22%). ≥College degree: W(33%), AA (20%), H (11%).</td>
<td>“EX” is a branded, general population adult smoking cessation campaign</td>
<td>Campaign exposure: Confirmed and aided awareness</td>
<td>Chi-square tests</td>
</tr>
<tr>
<td>Study Year</td>
<td>Country</td>
<td>Study type</td>
<td>Socio-demographic groups compared</td>
<td>Intervention</td>
<td>Exposure &amp; Outcome Measures</td>
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<tr>
<td>Niederdeppe et al., 2011</td>
<td>US</td>
<td>Observational</td>
<td>Cross-sectional web-based survey conducted over five waves between 2007 – 2009.</td>
<td>Employment status. Unemployed: W (12%), AA (17%), H (17%). Not in workforce: W (31%), AA (40%), H (38%). Employed: W (57%), AA(42%), H (47%).</td>
<td>P’s exposed to 4 – 6 ads via online multimedia within the survey. Ads came from five categories: (1) Why – graphic; (2) Why – testimonial; (3) How to quit; (4) Anti-industry; (5) Secondhand smoke (not included in analysis)</td>
<td>Logistic regression (to predict aided ad recall)</td>
</tr>
<tr>
<td>Niederdeppe et al., 2008</td>
<td>US</td>
<td>Observational</td>
<td>Longitudinal survey</td>
<td>Education: high school degree or less (47%); Some college education (33%); College degree (20%).</td>
<td>TV smoking-cessation media campaign between May 2002 and December 2003; 2 message approaches: ‘keep trying to quit’ and ‘secondhand smoke’.</td>
<td>Multiple logistic regression</td>
</tr>
</tbody>
</table>

**Notes:**
- **Campaign exposure:**
  - **Education:** (-)
  - **Income:** (0) (one exception – ‘how to quit’ ads)

- **Motivational response:**
  - **Education:** mixed (-) for ‘keep trying to quit’ ads; (0) for secondhand smoke ads.
  - **Income:** (0)

- **Cessation:**
<table>
<thead>
<tr>
<th>Study Year</th>
<th>Country</th>
<th>Study type</th>
<th>Socio-demographic groups compared</th>
<th>Intervention</th>
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<th>Results (differences found in compared groups?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pierce et al., 1992 US (34)</td>
<td>Observational</td>
<td>Assessment of Cancer Information Service phone line call volume, caller demographics and number of public service announcements</td>
<td>Ethnicity. W; AA Education. ≤12 years (high school or less); ≥12 years (some college)</td>
<td>Between 1983 and 1987, 12 different anti-smoking public service announcements aired on US television.</td>
<td>Motivational response: number of smoking-related calls to the Cancer Information Service telephone line during periods of television or no television promotion</td>
<td>No significance testing conducted (number of calls, number of public service announcement spots, demographics presented as percentages)</td>
<td>Education: (0) Income: (0)</td>
</tr>
<tr>
<td>Siahpush et al., 2007 Australia (37)</td>
<td>Observational</td>
<td>Assessment of Quitline call volume, SES and TARPs</td>
<td>SES. Quintiles of SES: first (high disadvantage; 25.8%), second (18.1%), third (14.8%), fourth (17.0%), and fifth (low disadvantage; 24.3%).</td>
<td>Between January 2001 and March 2004 various adverts related to the health risks of smoking (and one anti-industry) that also promoted the Quitline were aired in Victoria, Australia.</td>
<td>Motivational response: number of calls to Quitline during study period</td>
<td>Negative binomial regression</td>
<td>Motivational response: SES: (-)</td>
</tr>
<tr>
<td>Stewart et al. 2011 Australia (39)</td>
<td>Observational</td>
<td>Cross-sectional survey</td>
<td>Ethnicity: Indigenous (Aboriginal &amp; Torres Strait Islander) Australians (N = 143); Non-Indigenous (N = 156).</td>
<td>P’s exposed to 10 anti-smoking advertisements (9 of which had all previously aired in Australia, and one from New Zealand) during a group testing session.</td>
<td>Campaign perceptions: 11-item questionnaire assessing message acceptance, personalised effectiveness, new information, uncomfortable, effective, and discuss categories.</td>
<td>Logistic regression</td>
<td>Campaign perceptions: Ethnicity: (+) (two exceptions – both graphic ads) Motivational response: Ethnicity: (0) (three exceptions: 2 +; 1 –)</td>
</tr>
<tr>
<td>Study Year</td>
<td>Country</td>
<td>Ref. #</td>
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<td>Socio-demographic groups compared</td>
<td>Intervention</td>
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Motivational response: ad most likely to make P want to quit

Results section: (0) = no difference, (+) = more effective, (-) = less effective for disadvantaged vs. more advantaged in statistically significant differences at p<.05 level. AA = African American / non-Hispanic Black; W = White; H = Hispanic; SES = socioeconomic status; P = participants; TARPs = Targeted Audience Rating Points.
Effectiveness of campaigns targeting disadvantaged groups

Studies evaluating the effectiveness of disadvantaged-targeted campaigns are summarised in Table 2.2. One of six studies used a general population sample to assess the differential effectiveness of a campaign targeted to low SES smokers of diverse races. Vallone and colleagues\(^{32,33}\) found that the nationally broadcast “EX” branded campaign was more likely to be recalled and more effective in promoting cessation cognitions, quit attempts and reducing smoking rates in disadvantaged smokers compared to more advantaged smokers. The five remaining studies\(^ {24, 27, 35, 40, 41}\) evaluated targeted anti-tobacco campaigns with socially disadvantaged samples only; disadvantage was defined by ethnicity in all studies. Two studies used control groups to evaluate the effectiveness of campaigns developed specifically for disadvantaged populations, finding exposure to targeted interventions resulted in positive increases in recall and motivational response.\(^ {24, 27}\) The campaign targeting African American smokers resulted in a significant increase in calls to quitlines in intervention compared to control communities,\(^ {24}\) while the campaign targeting American Vietnamese males found the intervention group had lower odds of being a smoker at follow-up compared to the controls.\(^ {27}\) Two studies compared the effectiveness of disadvantage-targeted campaigns (Australian Aboriginal people\(^ {35}\) and New Zealand Māori\(^ {41}\) ) and general population campaigns, finding that general campaigns were more effective than targeted interventions in promoting awareness and motivational response amongst socially disadvantaged samples. A similar study assessing the same Māori-targeted campaign as Wilson et al.\(^ {41}\) found that although between one half to three-quarters of both Maori smokers and their family rated the campaign as
effective, there was no change in smokers’ motivation to quit across the study period.\textsuperscript{(40)}
<table>
<thead>
<tr>
<th>Study Country</th>
<th>Study Type</th>
<th>Target Population</th>
<th>Intervention</th>
<th>Exposure &amp; Outcome Measures</th>
<th>Analyses</th>
<th>Results</th>
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</thead>
<tbody>
<tr>
<td>Boyd et al., 1998 US (24)</td>
<td>Randomised pre-post control group Monitoring of calls to Cancer Information Service (CIS)</td>
<td>Ethnicity: AA smokers 14 communities (7 pairs) matched on demographics (AA, income, gender, age, education, below poverty line, dwellings with telephones) 4/19 CIS regional offices consented to involvement (21%).</td>
<td>QuitToday! Campaign developed for and marketed to AA audience program timeslots and channels. Intervention N=7 communities. 10 weeks paid TV and radio advertising across two waves (1. Aug – Sept 1994; 2. April – May 1995). Control N=7 communities. No intervention.</td>
<td>Motivational response: number, proportion and sources of calls to CIS offices from AA smokers.</td>
<td>Ordinary least squares regression model</td>
<td>Motivational response: Intervention period calls from AA smokers: 81.8% (I) vs. 25.9% (C) (p&lt;.008). Intervention only: AA CIS calls/week: baseline (1.9); wave 1 (86) (vs. baseline, p=.0001); wave 2 (40) (vs. baseline, p=.0001). QuitToday! source: radio - AA (53.70%) vs. other (21.5%); TV -AA (41.63%) vs. other (61.68%)</td>
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<tr>
<td>Boyle et al., 2010 Australia (35)</td>
<td>Observational Personal intercept survey in July 2008 Convenience sampling in various locations across three sites (Perth metropolitan area; non-metropolitan towns)</td>
<td>Ethnicity: Aboriginal smokers Aboriginal smokers, N = 198, 45% male, 18-50+yo</td>
<td>“Bubblewrap” ad broadcast over 7 week campaign periods in May – June 2008 as part of state-wide general population ‘Make Smoking History’ campaign. Original 30-sec TV ad and 60-sec radio ad (both aired on metropolitan, regional and indigenous (TV ad only) stations); plus new 60-sec radio ad specifically targeting adult Aboriginal smokers (aired on regional</td>
<td>Campaign exposure: awareness Campaign perceptions: believability, relevance Motivational response: impact on smoking behaviour</td>
<td>Chi-square tests</td>
<td>Campaign exposure: Higher for TV vs. radio (p&lt;.01). Unprompted: TV 83.3% vs. radio 29.9%. Prompted: TV 89.9% vs. radio 34%. Campaign-related perceptions: No difference between TV and radio. ‘Believable’ – TV 87.6% vs. radio 82.5%. ‘Relevant’ – TV 83.7% vs. radio 77.4% Motivational response:</td>
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<tr>
<td>Study Country</td>
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<td>Kalgoorlie and Broome)</td>
<td>Observational</td>
<td>and indigenous stations only).</td>
<td>“It’s About Whānau” television campaign depicting Māori smokers and family of Māori ex-smokers delivering testimonial messages of what it was like to quit smoking.</td>
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<td>As result of seeing ad: 81.1% thought about cutting down amount smoked; 68.1% thought about quitting; 59% discussed quitting with friends/family; 26.5% got more info from health professional</td>
</tr>
<tr>
<td>Grigg, et al., 2008 New Zealand (40)</td>
<td>Pre (July 2001) and post (September 2002) cross-sectional surveys: computer-assisted telephone interview questionnaires</td>
<td>Ethnicity: Māori Māori Smokers Baseline: N = 254, Follow-up: N = 404 Family of Māori smokers (Whānau) Baseline: N = 219 Follow-up: N = 251</td>
<td>Campaignt exposure: Unprompted and prompted recall Campaign-related perceptions: campaign perceptions at follow-up Motivational response: Change in motivation to quit (stage of change) between baseline and follow-up; ad prompting discussions about</td>
<td></td>
<td>Campaign exposure: Total recall (unprompted and prompted) for ad at follow up: smokers 78% vs. family 73% Campaign perceptions: Thought-provoking: smokers 48% vs. family 54%; Believable: smokers 73% vs. family 75%; Relevant: smokers 67% vs. family 64%; Influence quitting: smokers 54% vs. family 51% Motivational response: No change in smokers’ motivation to quit. Ad prompted discussions</td>
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<tr>
<td>Study Country</td>
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<td>Jenkins et al., 1997 US (27)</td>
<td>Quasi-experimental Cross-sectional telephone surveys</td>
<td>Ethnicity: American Vietnamese males</td>
<td>Intervention area: 1) Vietnamese-language anti-tobacco TV ad; 2) health education materials; activities targeting: 3) physicians, 4) youth, 5) businesses. (Plus usual state tobacco control activities). Control area: Houston, Texas. No intervention implemented, usual state tobacco control activities.</td>
<td>Campaign exposure: Aided recall Cessation: 1) change in proportion of current smokers from pre- to post-test; 2) proportion who had quit smoking during the 2 years prior to either the pretest or posttest interview.</td>
<td>Multiple logistic regression</td>
<td>Campaign exposure: Increased for 4/5 elements of campaign (not newspaper articles) for intervention community vs. control (p&lt;.05). Smokers more likely than non-smokers to recall campaign elements in both intervention (p&lt;.01) and control (p&lt;.01). Cessation: Current smokers: No change in either intervention or control; [post-C (40.9%) vs. post-I (33.9%, p=.017)]. Quit during prior 2yrs: Increased in intervention, no change in control; [post-C (7.4%) vs. post-I (10.2%), p=.017].</td>
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<tr>
<td>Vallone et al., 2011 US (32)</td>
<td>Observational Longitudinal survey</td>
<td>Consent rate: 66% of eligible P’s participated; 73% 6-month follow-up</td>
<td>Ethnicity. W(74.1%); AA (11.5%); H(7.4%) Education. &lt;High school (19.6%); high school diploma (43%); some college (26.6%); ≥college degree (10.7%). “EX” campaign: 6-month (March – Sept 2008) national smoking cessation advertisements. Branded mass media campaign aimed to encourage disadvantaged adult smokers to quit.</td>
<td>Campaign exposure: confirmed awareness Motivational response: Changes in cessation-related cognitions index; quit attempts</td>
<td>Multivariate logistic and linear regression analyses</td>
<td>Campaign exposure: Ethnicity: (+) Education: (+) Motivational response: Ethnicity: (+) Education: (+) Cessation: Ethnicity: (+)</td>
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<td>Study Country</td>
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<td>Target Population</td>
<td>Intervention</td>
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<tr>
<td>Niederdeppe et al., 2011 US (33)</td>
<td>response rate; 48% overall response rate.</td>
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<td>(≥24hrs; between baseline and follow-up).</td>
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<td>Cessation: 30-day point prevalence abstinence at 6-month follow-up.</td>
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<td>Education: (0)</td>
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<tr>
<td>Wilson et al., 2005 New Zealand (41)</td>
<td>Observational Assessment of Quitline call data, TARPs, expenditure on TV campaigns, ethnicity</td>
<td>Ethnicity: Māori Quitline calls registered as coming from Māori during years 2002 and 2003</td>
<td>Two campaigns, each advertising Quitline “Every cigarette is doing you damage” (EC) campaign “It’s about whānau” (IAW) campaign</td>
<td>Motivational response: Monthly Quitline call data and calls within one hour of a television commercial</td>
<td>Rate ratios reported – method of analysis not stated; possibly logistic regression.</td>
<td>Motivational response: Monthly calls. During 6 ‘intense’ months (over 480 TARPs/month): 15.2% increase in Māori callers Campaign effectiveness. EC vs. IAW generated more calls to Quitline within one hour of a commercial airing (rate ratio = 1.26; 95% CI = 1.08 to 1.46).</td>
</tr>
</tbody>
</table>

Results section: (0) = no difference, (+) = more effective, (-) = less effective for disadvantaged vs. more advantaged in statistically significant differences at $p<.05$ level. AA = African American / non-Hispanic Black; W = White; H = Hispanic; SES = socioeconomic status; EC = ‘Every cigarette is doing you damage’ campaign; IAW = ‘It’s About Whānau’ campaign; CIS = Cancer Information Service; TARPs = Targeted Audience Rating Points; C = control group; I = intervention group.
Methodological Quality Assessment

Table 2.3 summarises the methodological quality of the included studies. Strong conclusions regarding study quality are difficult to make, as although the tool offers a global study rating, the ‘blinding’ criterion was not always applicable. Only four\textsuperscript{(24, 34, 37, 38)} of the seventeen studies were rated as ‘strong’ or ‘moderate’ for all applicable assessment criteria. Fourteen studies (reported in 15 papers) were observational in nature,\textsuperscript{(25, 26, 29-41)} while three studies utilised quasi-experimental designs.\textsuperscript{(24, 27, 28)} Weak study designs and selection bias were common limitations. Most studies reported using an appropriate statistical test, although seven of the 17 studies had a unit of allocation that differed from the unit of analysis. The integrity of interventions evaluated is likely to be moderate as although consistency of intervention implementation was reported in the majority of studies, co-intervention is likely to have occurred in most cases.
### Table 2.3 Assessment of methodological quality.

<table>
<thead>
<tr>
<th>Selection Bias</th>
<th>Study Design</th>
<th>Confounders</th>
<th>Blinding</th>
<th>Data Collection</th>
<th>Withdrawals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boyd et al., 1998&lt;sup&gt;1&lt;/sup&gt;&lt;sup&gt;(24)&lt;/sup&gt;</td>
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<td>Pierce et al., 1992&lt;sup&gt;(34)&lt;/sup&gt;</td>
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<td>Stewart et al., 2011&lt;sup&gt;(39)&lt;/sup&gt;</td>
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<td>Wilson et al., 2005&lt;sup&gt;(41)&lt;/sup&gt;</td>
<td>W</td>
<td>W</td>
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</tr>
</tbody>
</table>

*The rating category does not apply to the study reviewed (note this is not the same as “N/A” which is a rating tool label).<sup>1</sup> These studies assessed only socially disadvantaged samples. W = Weak; M = Moderate; S = Strong*
2.5 Discussion

The primary finding of the paper is that few studies have assessed the effectiveness of anti-tobacco mass media campaigns with socially disadvantaged groups in a methodologically rigorous way. Although the literature suggests mass media may sometimes be effective with disadvantaged groups, and that the relative effectiveness of mass media across SES-groups is variable, it is difficult to make confident conclusions regarding campaign impact on cessation rates. A lack of sound experimental design limits this review from making a general assessment of campaign effectiveness among socially disadvantaged smokers. Only five\(^{(26-28, 31, 36)}\) of the seventeen studies included used measures of smoking cessation as their primary outcome.

The only previous similar review, conducted by Niederdeppe et al.\(^{(15)}\) included interventions involving elements outside the Cochrane definition of a mass media intervention such as financial incentives (quit-to-win contests) and community health programs. Niederdeppe et al. reported that disadvantage-related disparities in campaign effectiveness may arise through differences in exposure, response, and opportunity to act, but that general population campaigns are most often less or equally effective among low relative to high SES populations. Niederdeppe et al. did not include a methodological critique of their included studies, thus limiting the validity of their results. The results of the current methodological review suggests there is insufficient evidence to confidently state mass media campaigns are effective in promoting cessation for socially disadvantaged groups, or similarly effective for groups of high versus low SES.
Keeping the methodological limitations of this field in mind, while socially disadvantaged smokers may be less likely to recall general population campaigns compared to more advantaged groups, they may be equally likely to perceive these campaigns as effective and to quit in response. The findings in relation to disadvantage-targeted campaigns are mixed. Campaigns developed for, marketed to, and evaluated with disadvantaged groups-only were successful in achieving recall and response. Assessed using a general population sample, the ‘EX’ branded national campaign targeting low SES smokers of diverse race\(^{32, 33}\) reached and was more effective with low versus higher SES smokers. However, when general population and targeted campaigns, both airing nationally, were compared in disadvantaged-only samples, disadvantaged smokers were more likely to recall and respond to the general compared to the disadvantage-targeted campaigns. These findings suggest that general population campaigns have the potential to be effective with disadvantaged population sub-groups.

**Implications for research, practice and policy**

A key observation of this review was literature in this area tends to focus on disadvantage in terms of low SES. Given disadvantage ranges from those who experience low-moderate SES to those who experience multiple forms of socioeconomic disadvantage, assessment of mass media campaign effectiveness for the highly disadvantaged is absent from the literature. While smoking rates for low SES groups are 24.6%,\(^{42}\) rates are much higher for highly socially disadvantaged groups such as Indigenous populations (38 –
50%), (42-44) homeless people (77 – 93%), (2, 45) and those with substance misuse problems (74 – 100%) (2, 46) and severe mental illness (70 – 88%), (2, 46) many of whom experience multiple forms of disadvantage. Although these groups are viewed as hard-to-reach, a greater onus should be placed on accessing and incorporating population sub-groups in future evaluations of media campaigns. Currently, the evaluative literature in this area is most often based on population-level telephone or web-based surveys and highly disadvantaged groups are under-represented.

The results of this review support the call made by Lawrence and colleagues (47, 48) for more rigorous methodology to improve evaluation of population-based tobacco control approaches. Quality assessment of the papers included in this review showed most studies in this area are methodologically weak, with the majority using observational designs. Although large and costly, it may be useful to examine the effectiveness of mass media campaigns using rigorous methodology such as community-based cluster randomised trials or multiple baseline design studies in order to first establish high level evidence for their effectiveness before wide-spread dissemination. (49, 50) Examples of this type of research exist in other areas of public health, e.g. randomised control trial to increase HIV testing rates, (51) sequential randomised trials to evaluate mammography screening interventions, (52) and controlled time series designs to assess the effectiveness of drink driving advertisements (53) and public service announcements to increase condom use. (54) We recognise, as many have argued, (55, 56) that it is not always practical or possible to implement such
designs, however the minimum level of evaluative evidence needs improvement.

**Limitations**

Due to the high amount of variability across study designs and outcome measures, a meta-analysis of the results of studies could not be conducted limiting the review to a qualitative synthesis of the data. Grey literature was not pursued and therefore some studies may have been omitted. However, grey literature is not likely to contain large numbers of studies reporting rigorous evaluation designs. While the tool we used for the methodological assessment is validated\(^{(21)}\) and commonly accepted,\(^{(22, 23)}\) we were unable to apply the global study ratings as not all assessment criteria could be applied across studies. There is clearly a need for a methodological quality assessment tool for studies reporting population-level approaches. In addition, due to the inclusion of disadvantage-related search terms, it is possible that studies assessing differences across socio-demographic variables may have been missed if assessment of disadvantage was not a key aim or outcome of the paper. It should also be acknowledged that ‘real world’ evaluations such as those for mass media are likely to have ecological validity which was not assessed as part of methodological quality in this review.

**Conclusion**

The results of this paper suggest that the methodological rigour of campaign evaluation studies must be improved before strong conclusions regarding the effectiveness of mass media campaigns in driving cessation among
disadvantaged groups can be reached. It is also recommended that future research in this area focus on including highly socially disadvantaged populations, as these individuals are currently under-represented in the literature.
2.6 References


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47. LAWRENCE D, MITROU F, ZUBRICK SR. Global research neglect of population-based approaches to smoking cessation: time for a more rigorous science of population health interventions. Addiction. 2011;106:1549-54.


56. GARTNER C, HALL W. Beware of allowing the ideal to be the enemy of the good. Addiction. 2011;106:1555-6.
3. Introduction to Paper Two

The review of anti-smoking mass media literature presented in Paper One identified a lack of conclusive evidence regarding the impact of this strategy on socioeconomically disadvantaged groups. Specifically, the review identified a need for higher levels of evidence regarding cessation outcomes for campaign evaluations. Paper Two focuses on a recommendation from the review, that research efforts be focused on highly disadvantaged smokers. A small number of studies reviewed in Paper One suggested comparable effect across SES groups for general population tobacco control campaigns. Therefore, the current study (Paper Two) was designed to focus specifically on socioeconomically disadvantaged smokers and identify which type of campaign message has the greatest impact. Determining the most effective types of message content and how messages can be tailored to high-risk subgroups has been identified as a research need for Articles 11 and 12 of the WHO Framework Convention on Tobacco Control.\(^{(1)}\)

The Social and Community Service Organisation (SCSO) setting was used to recruit participants, as it represents a unique opportunity to access otherwise hard-to-reach groups.\(^{(2)}\) SCSOs are typically non-government services offering financial counselling and welfare support to underserved members of the community. The main eligibility criteria for the provision of SCSO emergency relief include individuals being recipients of government welfare-based pensions or having very low income, who are also experiencing financial crisis or hardship. Compared to the general population clients of SCSOs include groups experiencing multiple forms of disadvantage such as the long-term unemployed,
individuals experiencing homelessness, single-parent families, people suffering from addiction or mental illness, and Aboriginal and Torres Strait Islanders.\(^{(3)}\)

Therefore, SCSOs are an appropriate setting for identifying and surveying highly socioeconomically disadvantaged smokers. The study presented in Paper Two involved surveying disadvantaged smokers attending a SCSO with the aim of determining which type of mass media campaign message these smokers perceive to be most effective.
3.1 References


4. What type of anti-smoking advertisement is perceived as more effective? An experimental study with a sample of Australian socially disadvantaged welfare recipients. (PAPER TWO)

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Citation: Guillaumier A, Bonevski B, Paul C, D'Este C, Durkin S, Doran C. What type of anti-smoking advertisement is perceived as more effective? An experimental study with a sample of Australian socially disadvantaged welfare recipients. Under Editorial Review

Associated appendices:
15. Appendix B: Touchscreen computer survey materials
   15.1 – Ethics approval: touchscreen computer survey
   15.2 – Information statement
   15.3 – Touchscreen computer tobacco control survey
4.1 Abstract

**Background.** Socially disadvantaged groups with high smoking rates are a difficult population to reach, not often included in mass media campaign evaluations. Consequently, there is little research investigating the impact of anti-smoking advertisements with these smokers. Research using innovative methodology suited to this population is needed. The aim was to evaluate the perceived effectiveness of key anti-smoking message types among socially disadvantaged smokers, and assess the impact of nicotine dependence and cessation cognitions on message processing.

**Method.** An experimental cross-over trial randomly exposing welfare recipients of a Community Service Organisation in NSW, Australia to two of three anti-smoking advertisements delivered via touchscreen computer was undertaken between March–December 2012. Participants rated the perceived effectiveness of: why-to-quit (graphic imagery), why-to-quit (personal testimonial) or how-to-quit advertisements.

**Results.** N=354 smokers (79% response rate). Among participants 52% resided in government rental housing, 72% earned <AUD$400/week, and 95% received their income from a government benefit. Why-to-quit advertisements were rated higher than the how-to-quit advertisement on measures of message acceptance and perceived message effectiveness (all p values<0.0001). No difference was found between why-to-quit (graphic imagery) and why-to-quit (personal testimonial) advertisements for message acceptance (p=0.1744) or perceived message effectiveness (p=0.9555). Smokers with positive cessation cognitions were more likely to accept anti-smoking messages (p=0.0003) and
perceive them as effective (p<0.0001), however nicotine dependence level did not influence message acceptance (p=0.7322) or effectiveness (p=0.8872).

Conclusion. Highly emotive advertisements providing good reasons to quit may be the most effective in promoting the anti-smoking message among groups with high smoking rates.
4.2 Introduction

Tobacco use is the leading cause of preventable mortality and morbidity worldwide.\(^{(1)}\) Socially disadvantaged groups, especially those experiencing multiple adversities, demonstrate very high smoking rates. For example: Indigenous populations (32% - 50%),\(^{(2,3)}\) the unemployed (28% - 39%),\(^{(4,5)}\) individuals with serious mental health issues (35% – 90%),\(^{(6-8)}\) homeless individuals (69% – 73%),\(^{(9,10)}\) and individuals accessing welfare and crisis aid (59%).\(^{(11)}\)

In Australia mass media campaigns have been one of the most widely used strategies for tobacco control.\(^{(12,13)}\) Although anti-smoking campaigns require substantial financial outlay,\(^{(14)}\) their wide reach and repetition means a low cost per person. Simulation studies indicate savings from averted health care costs exceed campaign costs.\(^{(15,16)}\) Anti-smoking mass media campaigns have been effective at reducing population smoking prevalence rates in Australia and other Western countries.\(^{(17,18)}\) However, most evaluations of mass media campaigns are population-wide observational studies aimed at capturing a broad sample. While some evaluations examine differences across socioeconomic status (SES), most fail to include the groups experiencing multiple disadvantage and the highest smoking prevalence rates.\(^{(19)}\) As a result, the impact of campaigns among socially disadvantaged smokers is less clear. One review concluded, media campaigns to promote smoking cessation are rarely as effective or more effective amongst disadvantaged groups relative to more advantaged populations.\(^{(20)}\)
Anti-smoking mass media advertisements have generally used four broad message themes: 1) a rationale for why to quit using serious health effects; 2) practical information on how to quit; 3) countering tobacco industry behaviour and 4) the detrimental effects of second-hand smoke. Among general population adult smokers more support has been found for the impact of ‘why’ advertisements, using visceral negative imagery or personal stories to arouse strong negative emotion, compared to how-to-quit and anti-industry messages. Among socially disadvantaged groups, responses to different advertisement message types are poorly understood. One US study found a campaign focussed on learning how to avoid triggers to smoke was successful in promoting cessation-related thoughts and behaviours in disadvantaged groups. Evidence from other studies suggest that emotionally evocative advertisements and testimonials are more effective among lower than higher SES groups and with Australian Indigenous people compared to the general population. There is a paucity of research regarding which anti-smoking message types are perceived as most effective and most likely to impact cessation-related behaviour among highly disadvantaged groups.

Research used to develop tobacco media campaigns typically examines respondents’ attitudes, perceived effectiveness and other non-behavioural outcomes as perceived effectiveness can predict reduced smoking behaviour. The effectiveness of media campaigns is partly determined by the receptivity of the target audience. Socially disadvantaged smokers are more likely to hold self-exempting beliefs compared to the general population, and people with psychotic disorders view visceral graphic images as cues to
Smoke. Smokers interested in quitting, or who smoke fewer cigarettes, may be more likely to accept the anti-smoking message. Smokers who are not interested in quitting may be less motivated to process messages. If processing of the advertisements differs according to smokers’ cessation cognitions, addiction level and quitting history, improved knowledge of how different types of smokers respond to varying cessation messages can inform the development of anti-smoking campaigns.

Given the limited evidence of how highly socially disadvantaged smokers perceive anti-tobacco mass media advertisements, the study aims were to:

a) Compare three types of televised anti-smoking media advertisements on perceived effectiveness ratings among socially disadvantaged smokers. The message types compared were 1) why - graphic imagery of serious health effects; 2) why - personal emotional testimonial and 3) how to quit message.

b) Assess whether nicotine dependence and cessation cognitions are associated with perceived effectiveness ratings of advertisements among socially disadvantaged smokers, adjusting for potential confounders.

4.3 Methods

Design
An experimental cross-over trial (incomplete block design) randomly exposing participants to two of three advertisements delivered on a touchscreen computer was undertaken. Data were collected between March and December
2012. The study was approved by University of Newcastle’s Human Research Ethics Committee.

**Setting and Sample**

The study was conducted at a single site of a nationwide non-government social and community service organisation (SCSO) in NSW Australia. The SCSO provides counselling and financial assistance to those experiencing financial, social or other forms of hardship. Eligible participants were clients attending the SCSO for a pre-scheduled Emergency Relief interview for financial and material aid, aged 18 years or more, who could comprehend English and were well enough to participate.

**Recruitment**

Following their appointment, service staff informed eligible clients about an independent survey taking place. Interested clients were introduced to a research assistant who explained the survey was about smoking and provided technical assistance. The survey was voluntary, anonymous, self-administered via a touchscreen laptop computer, and participants were reimbursed for their time with a $20 grocery voucher.

Once smoking status was assessed (see details below), non-smokers exited from the survey. All analyses presented in this paper include smokers only.

**Presentation of experimental conditions and randomisation**
The study used three 30-second television advertisements from the government-sponsored NSW-based campaigns (http://www.cancerinstitute.org.au/prevention-and-early-detection/public-education-campaigns/tobacco-control). Advertisements were chosen to represent the three main types of campaign messages commonly used in the state and national tobacco control strategies. The message types and advertisements were: Ad1) why message - graphic imagery of serious health effects (‘Bronchoscopy’); Ad2) why message - personal testimonial (‘Anthony’), and; Ad3) how to quit message (‘Get Off Cigarettes’).

A Dell Latitude XT3 (2.50 GHz processor) touchscreen computer installed with Digivey version 4 software was used to deliver the advertisements and collect data. Each participant viewed and immediately rated two randomly selected and randomly ordered advertisements. Six allocation sequences were generated within the Digivey software to allow for all possible pairs of advertisement number and order. One of the six combinations was randomly allocated to each participant. The sequences were: 1) Ad1/Ad2; 2) Ad2/Ad1; 3) Ad1/Ad3; 4) Ad3/Ad1; 5) Ad2/Ad3; 6) Ad3/Ad2. When choosing a random path out of the six options, Digivey used a pseudo random number generator provided by the underlying programming language (http://msdn.microsoft.com/en-us/library/system.random(v=vs.90).aspx).

**Measures**

**Smoking status**
Participants were asked “Do you currently smoke tobacco products?” and responded “Yes, daily”, “Yes, at least once a week”, “Yes, but less often than once a week”, or “No, not at all.” Participants were then asked “Have you smoked at least 100 cigarettes or a similar amount of tobacco in your life?” and responded “Yes”, “No”, or “Not sure.” Participants who smoked daily, or who reported smoking occasionally AND at least 100 cigarettes met the definition of current smoker. The touchscreen version of this item has been validated against a biochemical measure in a sample of SCSO clients and found to have high sensitivity (94%) and specificity (92%) when compared to expired CO. (11)

**Smoking behaviours and quitting history**

Participants were asked about the number of cigarettes they smoked per day, the age they started smoking daily, whether they had ever made a quit attempt, and the number of quit attempts made in the previous 12 months.

**Perceived effectiveness measures**

Perceived effectiveness was assessed following presentation of each advertisement using 11 items rated on a Likert scale of 1 (strongly disagree) to 5 (strongly agree). (25) Participants rated the extent to which they felt the advertisement was “easy to understand”, “believable” and “relevant to me”, whether the advertisement made them “stop and think”, “feel concerned about my smoking”, “more likely to try to quit”, “feel uncomfortable”, “likely to talk to someone else about this ad”, and whether it “provided good reasons to quit smoking”, “taught me something new” and “was an effective anti-smoking ad.”

**Explanatory variables**
The following items were assessed prior to viewing the advertisements.

**Cessation cognitions:** The 8-item Cessation Cognitions Index\(^{(23, 33)}\) was used to assess motivations and readiness to quit. The Index score (Cronbach’s \(\alpha=0.79\)) ranges from -24 to 40 with a higher score on the index representing more favourable thoughts about quitting smoking.\(^{(33)}\)

**Nicotine dependence:** was assessed using the two-item Heaviness of Smoking Index which measures cigarettes/day and time to first cigarette after waking.\(^{(34)}\) The index has good reliability (Cronbach’s \(\alpha=0.72\)) and predictive validity.\(^{(35)}\)

**Demographic factors:** included age, gender, marital status, housing type, highest level of education, personal weekly income, and Indigenous status.

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**Statistical Methods**

All statistical analyses were performed using SAS v9.3. Descriptive characteristics of the sample are presented as numbers and percentages for categorical variables, and means and standard deviations for continuous variables. An exploratory factor analysis was conducted on the 11-item advertisement rating questionnaire, including data from all advertisement viewings, and Cronbach’s alpha was used to assess internal consistency of the scales. Two composite scales were revealed; ‘perceived message effectiveness’ scale comprised nine items: taught me something new; stop and think; uncomfortable; relevant; reason to quit; effective; talk about it; concerned, and; try to quit (\(\alpha=0.90\)). The ‘message acceptance’ scale comprised: easy to understand and believable (\(\alpha=0.59\)).
For aim a) the mean perceived message effectiveness and mean message acceptance scores are reported for each advertisement. Differences in effectiveness across advertisements were examined using generalized linear mixed models, fitted with advertisement type and viewing order as fixed effects and participant as a random effect to adjust for multiple observations per individual. The likelihood ratio test was used as a global test of significance for between advertisement differences, and if significant then pairwise comparison were undertaken, with a conservative Bonferroni adjusted significance level of 0.017 used (two-sided, 0.05 divided by three). The difference between means with 98.3% confidence intervals (to be consistent with significance levels) for each pairwise comparison of advertisements is reported.

For aim b) first, a series of simple linear regressions were undertaken to investigate the relationship between perceived effectiveness subscales and Cessation Cognitions Index and Nicotine Dependence, and between perceived effectiveness subscales and potential confounders: ever quit, number of quit attempts in past 12 months, education, income, housing, indigenous status, gender, age and marital status. Variables with a $p$-value of ≤0.2 for simple regression models were then included in a multiple linear regression analysis. Since there were two observations per subject, a generalized estimating equations framework with an exchangeable covariance structure was used.

Since there could possibly be differential carry-over effects of the advertisements in the first period due to the cross-over design, sensitivity
analyses (not reported here) were conducted using the data from only the first advertisement viewed.

**Sample size**

A sample of 300 participants (600 observations in total or approximately 200 per advertisement) would allow detection of a difference in mean outcomes between groups of approximately 0.4 of a standard deviation and detection of relationships of factors associated with perceived effectiveness of at least 0.4 standard deviations for categorical explanatory variables and correlations of 0.3 or more for continuous explanatory variables with at least 80% power, a significance level of 0.017 (to allow for multiple comparisons among type of advertisement) and a design effect of 1.5 to adjust for correlation among repeated observations for individuals. Assuming, based on previous research,\(^{(11, 36)}\) an approximate 70% consent rate and that 65% of SCSO clients are current (daily and occasional) smokers, it was estimated that 800 SCSO clients should be approached.

### 4.4 Results

**Sample characteristics**

Over the data collection period 787 clients attended SCSO emergency relief appointments, 738 were told about the research, 608 met with the research assistant and 581 were eligible and consented to completing the survey (79% consent). Of the 581 participants completing the survey, 62% \((n = 362)\) were identified as current smokers, 13% were ex-smokers, and 25% were non-smokers. Eight participants who reported normally using other smoked (e.g.
cigars, chop chop) or smokeless (e.g. chewing tobacco, snuff) tobacco were classified as ineligible. The demographic details of the 354 smokers included in analysis are displayed in Table 4.1. Over half of the sample were living in government rental housing (52%) and had not completed high school education (64%). A majority received their primary income from a government benefit (95%), earning less than AUD$400/week (72%).
Table 4.1 Demographic and smoking characteristics of the survey sample (n = 354).

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<th>n (%)*</th>
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<td>30 – 39</td>
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<td>40 – 49</td>
<td>99 (28)</td>
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<td>50+</td>
<td>49 (14)</td>
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<td><strong>Gender</strong></td>
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<td>Yes</td>
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<tr>
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<tr>
<td>Separated or divorced</td>
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<tr>
<td>High school years 7-10</td>
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<td>High school years 11-12</td>
<td>51 (14)</td>
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<tr>
<td>University degree</td>
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<td>$201 - $400</td>
<td>172 (49)</td>
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<tr>
<td>&gt;$400</td>
<td>79 (22)</td>
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<tr>
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<td>19 (5.4)</td>
</tr>
<tr>
<td>Government rental</td>
<td>184 (52)</td>
</tr>
<tr>
<td>Private rental</td>
<td>89 (25)</td>
</tr>
<tr>
<td>Homeless</td>
<td>48 (14)</td>
</tr>
<tr>
<td>Supported accommodation</td>
<td>14 (4)</td>
</tr>
<tr>
<td><strong>Heaviness of smoking index</strong></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>135 (38)</td>
</tr>
<tr>
<td>Moderate</td>
<td>153 (43)</td>
</tr>
<tr>
<td>Heavy</td>
<td>66 (19)</td>
</tr>
<tr>
<td><strong>Ever made quit attempt (Y/N)</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>295 (83)</td>
</tr>
<tr>
<td><strong>Mean (SD)</strong></td>
<td></td>
</tr>
<tr>
<td>Cigarettes per day</td>
<td>16.37 (11.3)</td>
</tr>
<tr>
<td>Age started smoking</td>
<td>15.52 (6.4)</td>
</tr>
<tr>
<td>Quit attempts past 12 months</td>
<td>3.27 (7.7)</td>
</tr>
<tr>
<td>Cessation Cognitions Index</td>
<td>13.40 (9.99)</td>
</tr>
</tbody>
</table>

*Total percentages may not add to 100 due to rounding.
Smoking behaviours, nicotine dependence, and cessation cognitions

Smoking and quitting behaviours of the sample are presented in Table 4.1. On average participants smoked 16 cigarettes/day and began smoking at age 16. The majority of the sample had tried to quit in the past (83%), making an average of three quit attempts in the preceding 12 months. The heaviness of smoking index revealed 19% of the sample was heavily nicotine dependent. Results of the cessation cognitions scale show a mean index score of 13.40 ($SD = 9.99$). Scores on the index ranged from -16 to 40, and scores were slightly skewed to the right, indicating more favourable quit cognitions.

Ratings of perceived effectiveness

The number of participants viewing each advertisement in the first and second viewing periods respectively, were 1) Why–Graphic: 132 (37%) and 107 (30%); 2) Why–Testimonial: 117 (33%) and 138 (39%); and 3) How-to-quit: 105 (30%) and 109 (31%). Perceived effectiveness ratings and mean difference in ratings of the advertisements are presented in Table 4.2. The How-to-quit advertisement had a significantly lower mean score than Why–Graphic and Why–Testimonial advertisements on both Message Acceptance and Perceived Message Effectiveness scales. The mean scores of Why–Graphic and Why–Testimonial advertisements were not significantly different on either scale.

Characteristics associated with ratings of perceived effectiveness

Smokers who thought more about quitting smoking were more likely to perceive anti-smoking advertisements as acceptable and effective. Table 4.3 shows that
Cessation Cognition Index scores were significantly associated with advertisement ratings, with an increase of 0.014 units (95% CI: 0.007-0.020) in Message Acceptance scores and 0.035 units (95% CI: 0.025-0.045) in Perceived Message Effectiveness scores per unit increase in the Index score. Nicotine dependency was not significantly associated with either Message Acceptance ($p=0.7322$) or Perceived Message Effectiveness ($p=0.8872$) scales.
**Table 4.2** Perceived effectiveness for Advertisement 1: Why-to-quit (Graphic); Advertisement 2: Why-to-quit (Testimonial) and; Advertisement 3: How-to-quit.

<table>
<thead>
<tr>
<th>Message Acceptance</th>
<th>Perceived Message Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (95%CI)</td>
<td>p-value*</td>
</tr>
<tr>
<td><strong>Advertisement</strong></td>
<td></td>
</tr>
<tr>
<td>1 (Why – Graphic)</td>
<td>4.70 (4.62, 4.79)</td>
</tr>
<tr>
<td>2 (Why – Testimonial)</td>
<td>4.78 (4.69, 4.86)</td>
</tr>
<tr>
<td>3 (How-to-quit)</td>
<td>4.25 (4.15, 4.34)</td>
</tr>
<tr>
<td><strong>Advertisement Difference</strong></td>
<td></td>
</tr>
<tr>
<td>1 – 2</td>
<td>-0.08 (-0.18, 0.03)</td>
</tr>
<tr>
<td>1 – 3</td>
<td>0.46 (0.34, 0.57)</td>
</tr>
<tr>
<td>2 – 3</td>
<td>0.53 (0.42, 0.65)</td>
</tr>
</tbody>
</table>

*P-value for Wald test from generalised linear mixed models assessing differences in perceived effectiveness between advertisements. CI, confidence interval*
**Table 4.3** Results from simple linear regression examining relationship between perceived effectiveness sub-scale score and smoking characteristics.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Smoking characteristic</th>
<th>Class</th>
<th>Coefficient estimate (95% CI)</th>
<th>Overall p-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Acceptance</td>
<td>Cognition Index</td>
<td></td>
<td>0.014 (0.007,0.020)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Nicotine Dependence</td>
<td>Low</td>
<td></td>
<td>-0.040 (-0.210,0.130)</td>
<td>0.7322</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td></td>
<td>-0.009 (-0.158,0.176)</td>
<td>ref</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>ref</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Message Effectiveness</td>
<td>Cognition Index</td>
<td></td>
<td>0.035 (0.025,0.045)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Nicotine Dependence</td>
<td>Low</td>
<td></td>
<td>0.047 (-0.234,0.329)</td>
<td>0.8872</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td></td>
<td>0.067 (-0.204,0.338)</td>
<td>ref</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>ref</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*P-value for Wald test. CI, confidence interval.
Table 4.4 presents the multiple linear regression models. The Cessation Cognitions Index, gender, Indigenous status, income and number of quit attempts in past 12 months were included in the model examining factors associated with message acceptance scores. The Cessation Cognitions Index was the only variable significant at the 5% level, indicating that smokers who had increasingly more and favourable thoughts about cessation were more likely to accept anti-smoking advertisement messages. The Cessation Cognitions Index, gender, Indigenous status, age, housing, ever quit and number of quit attempts in the past 12 months were included in the multiple regression model predicting perceived message effectiveness. Similarly, the Cessation Cognitions Index was the only variable that was significant, indicating that smokers who had more favourable thoughts about quitting were more likely to perceive the anti-smoking advertisements as effective.

Sensitivity analyses undertaken using only data from the first advertisement demonstrated slight differences in the estimates compared to analyses involving all data, but provided the same conclusions.
Table 4.4 Multiple linear regression results showing the relationship between perceived effectiveness sub-scale score and explanatory variables.

<table>
<thead>
<tr>
<th>Sub-scale</th>
<th>Explanatory Variable</th>
<th>Category</th>
<th>Change in domain score (adjusting for all predictors)(95% CI)</th>
<th>p-value* for comparison</th>
<th>Overall p-value#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Acceptance</td>
<td>Cessation Cognitions Index</td>
<td></td>
<td>0.012 (0.006, 0.019)</td>
<td>0.0003</td>
<td>0.0003</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td></td>
<td>-0.091 (-0.207, 0.024)</td>
<td>0.1221</td>
<td>0.1221</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>ref</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indigenous</td>
<td>Indigenous</td>
<td></td>
<td>0.083 (-0.036, 0.203)</td>
<td>0.1729</td>
<td>0.1729</td>
</tr>
<tr>
<td></td>
<td>Non-Indigenous</td>
<td>ref</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>Less than $200</td>
<td></td>
<td>0.142 (-0.135, 0.419)</td>
<td>0.3153</td>
<td>0.2096</td>
</tr>
<tr>
<td></td>
<td>$201 - $400</td>
<td></td>
<td>0.154 (-0.111, 0.42)</td>
<td>0.2545</td>
<td></td>
</tr>
<tr>
<td></td>
<td>More than $400</td>
<td></td>
<td>0.238 (-0.025, 0.5)</td>
<td>0.0762</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prefer not to disclose</td>
<td>ref</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quit attempts</td>
<td>Zero</td>
<td></td>
<td>-0.162 (-0.321, -0.003)</td>
<td>0.0457</td>
<td>0.1229</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td>-0.248 (-0.442, -0.053)</td>
<td>0.0125</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td>-0.099 (-0.265, 0.067)</td>
<td>0.2429</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 – 5</td>
<td></td>
<td>-0.125 (-0.295, 0.044)</td>
<td>0.1477</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;5</td>
<td>ref</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-scale</td>
<td>Explanatory Variable</td>
<td>Category</td>
<td>Change in domain score (adjusting for all predictors)(95% CI)</td>
<td>p-value* for comparison</td>
<td>Overall p-value#</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------------------------</td>
<td>--------------</td>
<td>-----------------------------------------------------------------</td>
<td>--------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Perceived Message Effectiveness</td>
<td>Cessation Cognitions Index</td>
<td></td>
<td>0.032 (0.022,0.042)</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td></td>
<td>-0.085 (-0.255,0.084)</td>
<td>0.3222</td>
<td>0.3222</td>
</tr>
<tr>
<td></td>
<td>ref</td>
<td>Female</td>
<td>.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indigenous</td>
<td>Indigenous</td>
<td></td>
<td>0.14 (-0.065,0.346)</td>
<td>0.1806</td>
<td>0.1806</td>
</tr>
<tr>
<td></td>
<td>ref</td>
<td>Non-Indigenous</td>
<td>.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quit attempts</td>
<td>Zero</td>
<td></td>
<td>-0.193 (-0.555,0.17)</td>
<td>0.2982</td>
<td>0.0846</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td>-0.023 (-0.407,0.361)</td>
<td>0.9052</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td>0.163 (-0.18,0.507)</td>
<td>0.3506</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 – 5</td>
<td></td>
<td>-0.112 (-0.464,0.24)</td>
<td>0.5330</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;5</td>
<td></td>
<td>.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>18-29yrs</td>
<td></td>
<td>0.155 (-0.167,0.477)</td>
<td>0.3449</td>
<td>0.3478</td>
</tr>
<tr>
<td></td>
<td>30-39yrs</td>
<td></td>
<td>0.249 (-0.069,0.567)</td>
<td>0.1243</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40-49yrs</td>
<td></td>
<td>0.252 (-0.065,0.57)</td>
<td>0.1195</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50+yrs</td>
<td></td>
<td>.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td>Own house</td>
<td></td>
<td>-0.394 (-0.819,0.032)</td>
<td>0.0697</td>
<td>0.0979</td>
</tr>
<tr>
<td></td>
<td>Private Rental</td>
<td></td>
<td>-0.244 (-0.537,0.05)</td>
<td>0.1041</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Government Rental or Supported</td>
<td></td>
<td>-0.061 (-0.318,0.195)</td>
<td>0.6389</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Homeless</td>
<td></td>
<td>.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever quit?</td>
<td>No</td>
<td></td>
<td>0.142 (-0.123,0.408)</td>
<td>0.2930</td>
<td>0.2930</td>
</tr>
<tr>
<td></td>
<td>ref</td>
<td>Yes</td>
<td>.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p-value for Wald test. *p-value for Likelihood Ratio test. CI, confidence interval
4.5 Discussion

This study found socioeconomically disadvantaged smokers rate anti-smoking advertisements with a why-to-quit message as more effective than a how-to-quit message, with no differences found in the delivery of the why message (i.e. negative graphic imagery or personal testimonial). The study also found that while nicotine dependence level did not impact perceived effectiveness of advertisements, smokers who thought more about cessation were more likely to accept message content and find anti-smoking advertisements effective compared to those with fewer thoughts about quitting.

The results of this study are supportive of past research suggesting that advertisements portraying the negative consequences of smoking (why-to-quit) are rated as more effective than other message types among Indigenous Australian\(^{(25)}\) and low SES smokers.\(^{(24)}\) These results also complement general population findings,\(^{(27, 37)}\) and contribute to growing evidence indicating that anti-smoking advertisements designed to evoke strong emotional responses, providing good reasons to quit, may be the most effective, particularly among disadvantaged groups with high smoking rates.

Receptivity to the anti-smoking message was important among participants. Greater thoughts about cessation were associated with positive ratings of message acceptance and effectiveness; future research may consider testing the direction of this effect. Davis et al.\(^{(27)}\) also found that smokers less motivated to quit responded less favourably to a range of advertisement types, concluding
that benefits of specifically targeting campaigns to these smokers are limited. In our study level of nicotine dependence was not associated with advertisement ratings indicating all smokers, despite level of addiction, are open to the anti-smoking message. In combination these results support the suggestion that emphasis should be placed on mainstream anti-smoking advertisements reaching high-risk smoking sub-groups, rather than developing targeted messages.\(^{(22)}\)

**Limitations**

Use of a single SCSO service site is the primary limitation affecting generalizability of study results. However, compared to other tobacco research in SCSO settings, the demographic characteristics are very similar\(^{(11, 36)}\) and it is likely the findings would generalise to other SCSO clients. Furthermore, as Aboriginal and Torres Strait Islanders, single parents, the long-term unemployed and those whose primary income is a government benefit are over-represented among clients of SCSOs,\(^{(38)}\) this sample is likely to be representative of socioeconomically disadvantaged smokers generally. Socially disadvantaged smokers are a difficult-to-reach group and the SCSO presents an ideal opportunity to reach large numbers of socially disadvantaged smokers.\(^{(36, 39)}\) The advertisements used in this study were not new to viewers, however they were not in current use and original campaign impacts are likely to have decayed by time of survey.\(^{(18)}\) Use of only one advertisement to represent each message type limited generalizability and it is recommended that further research uses a range of advertisements. Finally, as there was no
comparison group of high socioeconomic smokers used, we cannot comment on the comparative effectiveness of these advertisements across SES groups.

**Implications**

During times of well-funded campaigns and tobacco control efforts, smoking prevalence may reduce equally across SES groups.\(^{(13, 40)}\) Inequalities in smoking prevalence may not be the result of differing perceptions of the anti-smoking message or interest in quitting, but perhaps differences in cessation success. The current study observed that socially disadvantaged smokers are interested in quitting, and respond positively to anti-smoking messages, but still have poor quit success. Although quit interest was high in this sample the smoking rate outnumbered ex-smokers (13%) and non-smokers (25%). These findings add weight to the argument that this group might need better cessation assistance rather than targeted advertisements to help them quit.

**Conclusion**

Mass media campaigns are one of the most widely implemented and evaluated tobacco control policies, however evaluations have not often included highly socioeconomically disadvantaged groups with very high smoking rates as they are a difficult population to reach. As a consequence there is little research investigating the impact of anti-tobacco mass media advertising with these smokers. This study found that why-to-quit anti-smoking messages were perceived as more effective than how-to-quit messages among highly disadvantaged smokers, and those who thought more about cessation were more likely to perceive anti-smoking advertisements as effective.
4.6 References


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5. Introduction to Paper Three

The study presented in Paper Two found that mass media campaign advertisements containing ‘why-to-quit’ messages were perceived to be more effective than ‘how-to-quit’ messages, with no differences in delivery of the why message. Determining the active content elements of a message, and identifying the information needs of consumers are important research priorities for improving communication of the anti-smoking message. There is a need therefore to understand how smokers avoid or engage with these messages and whether they are being used to aid in cessation or encourage smokers towards being receptive to the ‘quit smoking’ message. Paper Three employed qualitative focus groups to explore these issues. A qualitative approach was chosen to provide more in-depth information to complement the quantitative work conducted in Paper Two and Paper Four. Considerations concerning message types, content, framing, imagery and language are also applicable to textual and graphic health warning labels applied to tobacco packaging. The use of qualitative methods in Paper Three allowed for exploration of these similar concepts across message mediums, i.e. mass media campaigns and tobacco pack health warning labels.
6. Tobacco health warning messages on plain cigarette packs and in television campaigns: A qualitative study with Australian socioeconomically disadvantaged smokers. (PAPER THREE)

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Associated appendices:

16. Appendix C: Focus group materials
   16.1 – Ethics approval: focus groups
   16.2 – Manager Information Statement
   16.3 – Manager Consent Form
   16.4 – Client Information Statement
   16.5 – Client Consent Form
   16.6 – Client Focus Group Survey
   16.7 – Focus Group Discussion Guide
6.1 Abstract

Television advertisements, packaging regulations and health warning labels are designed to communicate anti-smoking messages to large numbers of smokers. However, little research has examined how high smoking prevalence groups respond to these warnings. This study explored how socioeconomically disadvantaged smokers engage with health risk and cessation benefit messages. Six focus groups were conducted over September 2012–April 2013 with adult clients of welfare organisations in regional NSW, Australia who were current smokers (N=51). Participants discussed health warning labels, plain packaging, and anti-smoking television advertisements. Discussions were audio-taped, transcribed verbatim and analysed using thematic analysis. Highly emotive warnings delivering messages of negative health effects were most likely to capture the attention of the study participants, however these warning messages did not prompt quit attempts and participants were sceptical about the effectiveness of cessation programs such as telephone quitlines. Active avoidance of health warning messages was common, and many expressed false and self-exempting beliefs towards the harms of tobacco. Careful consideration of message content and medium is required to communicate the anti-smoking message to disadvantaged smokers who consider themselves desensitised to warnings. Health communication strategies should continue to address false beliefs about smoking and educate on cessation services that are currently underutilised.
6.2 Introduction

One aim of the World Health Organisation’s Framework Convention on Tobacco Control (FCTC) is to educate the public about the risks of tobacco smoking.\(^1\) Article 11 of the FCTC recommends removal of misleading information from tobacco packaging, as well as the inclusion of text and pictorial health warning labels (HWLs) to communicate the harmful risks of tobacco use. FCTC Article 12 recommends widespread public awareness and education programmes about the health risks of tobacco use and exposure to tobacco smoke, as well as promotion of cessation and the benefits of quitting.

The health risks of smoking and benefits of cessation can be communicated to large numbers of smokers through anti-smoking mass media campaigns (MMCs) and cigarette pack regulations. Used together, MMCs designed to support the introduction of new HWLs can enhance awareness of smoking health effects promoted on the HWLs printed on cigarette packs.\(^2\) MMCs, particularly those involving paid television advertisements, have the capacity to reach millions of smokers at relatively low cost per head\(^3\) and are one of the most widely used tobacco control measures in Australia shown to reduce population smoking rates.\(^4, 5\) Campaigns delivering negative health effects messages appear to be more effective than other message types for increasing smoking-related knowledge and beliefs.\(^6\)

Similarly, regulations on what can be included on cigarette packaging have potential for wide influences as cigarette packs are viewed repeatedly and remain with the consumer until the pack is finished.\(^7\) The introduction of large
pictorial graphic HWLs on Australian cigarette packs in 2006 was met with an increase in awareness of the health risks of tobacco use.\(^8\) Larger, graphic and more comprehensive HWLs are more effective in communicating smoking health risks and increasing health knowledge.\(^7,9\) Plain or standardised packaging aims to reduce misperceptions of harms and enhance the impact of health warning messages on tobacco products by removing branded packaging-related responses.\(^10\) Early findings from the implementation phase of plain packaging in Australia suggest the new packaging reduces product appeal and is associated with more urgency to quit among adult smokers.\(^11\) However this study had a low number of low socioeconomic status (SES) smokers and did not consider effects by level of advantage.

Despite the advances that have been made, high smoking rates persist in highly disadvantaged groups.\(^12\) Low SES smokers have lower health literacy levels,\(^13\) poorer knowledge of the health effects of smoking,\(^14\) and hold self-exempting beliefs toward the harms of tobacco use\(^15\) compared to their more advantaged counterparts. As a result they may have different information and communication needs than the general population. Communicating the risks of smoking and benefits of quitting to socially disadvantaged groups may require specialised techniques, language and communication channels. Highly emotive messaging strategies communicating the negative health effects of smoking appear to be more effective than less emotive approaches among low SES smokers.\(^6\) Understanding how disadvantaged smokers perceive and engage with health warning messages and use them in aiding cessation attempts will be
important to improve strategies to reduce smoking rates and smoking-related inequalities, however available research is limited.

In consideration of the research needs for FCTC Articles 11 and 12, Hammond et al.\textsuperscript{(16)} identified consumer information needs and gaps, message content, and message processing, particularly among high smoking subgroups, as research priorities. The aim of this study was to explore how socioeconomically disadvantaged smokers conceptualise and respond to the communication of smoking health risk and cessation benefit messages via cigarette packaging (plain packaging and HWLs) and mass media TV advertisements. Of particular interest were smokers’ self-perceived responses to the information and whether they use it for cessation purposes.

6.3 Methods

Design
Qualitative focus groups were conducted with adult clients attending four social and community service organisations (SCSOs) who were current smokers. Data was collected between September 2012 and April 2013. Three focus groups were conducted prior to, and three groups following, the mandatory full implementation of Australian plain packaging policy (December 2012). University of Newcastle Human Research Ethics Committee approved this study. This study was conducted with reference to the consolidated criteria for reporting qualitative research.\textsuperscript{(17)}
Sample

Purposive sampling techniques were used. The participant target for the study was smokers from hard-to-reach groups including people who were homeless, with addiction or mental illness, unemployed or on a low income. In order to do this efficiently, Social and Community Service Organisations (SCSO’s) that provide financial aid to people in need were approached. Seven managers from five SCSO’s in the Newcastle region of NSW Australia were approached for consent for clients attending their organisation to be invited to participate in a study investigating disadvantaged smokers’ opinions of tobacco control advertising and changes to cigarette packaging. Five managers consented and were provided with participant information sheets for their staff to distribute to eligible clients. Eligible clients were those aged over 18 years, able to speak and comprehend English and who identified themselves as current smokers. Sampling continued until saturation of themes was reached.

Procedure

Focus groups were facilitated by author AG with a second facilitator (BB, CP or a research assistant) in a private room at each of the participating SCSO’s. Participants were provided with information sheets and the research was verbally explained at the start of each group. Written informed consent was obtained prior to the commencement of research, and participants completed a brief pen-and-paper survey assessing: smoking characteristics, quit intentions, gender, age, indigenous status, income, income source, marital status, education and housing. Participants were informed that discussions would be audio-taped and de-identified quotes would be used in reports of the research.
All participants were offered the opportunity to review or remove comments from the audiotape. Participants received a AUD$50 grocery voucher (which excluded purchase of tobacco) as reimbursement of their time and travel costs.

A discussion guide was followed. The questions were developed to address the research aims and with consideration of available literature. Group discussions began by exploring participants’ perceptions of tobacco packaging and brand preferences. In groups conducted prior to the introduction of plain packaging (Groups 1 – 3), awareness and expectations of plain packaging was discussed before participants were shown models of plain packs (see pack descriptions below). Groups conducted after the full implementation of plain packaging (Groups 4 – 6) discussed their reactions to and the impacts of plain packaging and new health warning labels. All groups then discussed health warning labels that appear on tobacco packaging. Group discussions also covered participants’ perceptions of anti-smoking television advertising campaigns. Participants were then shown three examples of anti-smoking television advertisements that had previously aired in NSW, but were not in current use (see advertisement descriptions below) and asked to discuss their thoughts about the ads and typical reactions. Groups closed with discussions covering utilisation of health warning information and any attempts to contact the telephone cessation support service - Quitline.

**Plain Pack Models**

Models of plain packs were supplied by the NSW Department of Health. Three life-size packs were used to demonstrate the appearance of cigarette packaging.
under plain packaging legislation. Pack models were constructed as exact replicas of 25-cigarette plain packs, but did not carry any brand-specific information. The words ‘Brand’ and ‘Variant’ appeared in policy specified font and size as place-markers for branding information. The packs featured new health warning labels that accompanied the introduction of plain packs (18). The three HWLs were: 1) Smoking causes emphysema – displays a picture of a cross-section of a lung with emphysema; 2) Smoking damages your gums and teeth – displays a picture of decaying gums and teeth of a male smoker aged 50, and; 3) Smoking harms unborn babies – features a picture of an underweight baby in critical care in hospital.

**Anti-smoking television advertisements**

Three television advertisements from the NSW based campaigns (available online: [http://www.cancerinstitute.org.au/prevention-and-early-detection/public-education-campaigns/tobacco-control](http://www.cancerinstitute.org.au/prevention-and-early-detection/public-education-campaigns/tobacco-control)) were used in the focus groups. The three 30-second advertisements used were: 1) **why** message - graphic imagery of serious health effects: The ‘Bronchoscopy’ Campaign displays the primary health consequence of smoking – lung cancer. It shows the operation of a smoker with a lung tumour almost completely blocking an airway. 2) **why** message - personal emotional testimonial: The ‘Anthony’ Campaign is based on the personal testimonial of Anthony Hicks who was diagnosed with throat and lung cancer caused by smoking. 3) **how** to quit message: The ‘Get Off Cigarettes’ Campaign reminds smokers that a range of professional help is available by talking to their general practitioner (GP), pharmacist or Quitline. These three types of messages were selected since they represent the more...
common type of campaigns used in the NSW and national tobacco control strategies \(^{(19-21)}\).

**Analysis**
Focus groups were recorded, then transcribed verbatim by an independent transcribing service. All transcripts were checked for correctness by one author (AG). Data were analysed using thematic analysis by one author (AG) using NVivo version 10. One co-author (CP) separately coded two (33%) transcripts, and identified themes were compared and reconciled where necessary. Braun and Clarke’s approach to thematic analysis was used.\(^{(22)}\) The thematic analysis approach considered meanings across the entire data set, semantic themes, and followed a realist paradigm. Quotes are presented to illustrate key findings, identified by focus group number.

### 6.4 Results

**Sample**
A total of 51 clients participated in one of six groups with group size varying from five participants to 13 participants. Focus groups lasted an average of 43 minutes (range: 30.11 – 52.13 minutes). Participating services included one drug and alcohol rehabilitation centre, one community-based group for people leaving prison/drug and alcohol rehabilitation centres, and two emergency relief (crisis welfare aid) services. Table 6.1 presents the demographic details and Table 6.2 the smoking characteristics of the 51 current daily or occasional smokers who participated.
Table 6.1 Demographic characteristics of the focus group participants (N = 51).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 – 39</td>
<td>29</td>
<td>57</td>
</tr>
<tr>
<td>≥40</td>
<td>22</td>
<td>43</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>27</td>
<td>53</td>
</tr>
<tr>
<td>Female</td>
<td>24</td>
<td>47</td>
</tr>
<tr>
<td><strong>Aboriginal &amp; Torres Strait Islander status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indigenous</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>Non-Indigenous</td>
<td>38</td>
<td>75</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married /De facto / living with partner</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>Separated / divorced</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>Never married / single / widowed</td>
<td>27</td>
<td>53</td>
</tr>
<tr>
<td><strong>Highest Education a</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary school</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>High school years 7-10</td>
<td>27</td>
<td>54</td>
</tr>
<tr>
<td>High school years 11-12</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>TAFE / trade qualification</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>University degree</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td><strong>Personal Weekly Income a</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤$299</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>$300 - $499</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>≥$500</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>

*Missings data for (n=1). TAFE, technical and further education.*
Table 6.2 Smoking characteristics of the focus group participants (N = 51).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Smoking frequency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily</td>
<td>47</td>
<td>92</td>
</tr>
<tr>
<td>Weekly</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Less than weekly</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td><strong>Regular tobacco type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cigarettes (pre-rolled)</td>
<td>21</td>
<td>41</td>
</tr>
<tr>
<td>RYO</td>
<td>21</td>
<td>41</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>A mix of types</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td><strong>Heaviness of Smoking Index</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low dependence</td>
<td>13</td>
<td>27</td>
</tr>
<tr>
<td>Moderate dependence</td>
<td>25</td>
<td>51</td>
</tr>
<tr>
<td>High dependence</td>
<td>11</td>
<td>23</td>
</tr>
<tr>
<td><strong>Ever tried to quit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>42</td>
<td>82</td>
</tr>
<tr>
<td><strong>Quit interest</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not interested</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>A bit interested</td>
<td>20</td>
<td>39</td>
</tr>
<tr>
<td>Very interested</td>
<td>26</td>
<td>51</td>
</tr>
<tr>
<td><strong>Quit intentions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Next 30 days</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Next 6 months</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>Not in next 6 months</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Never quit</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Don’t know</td>
<td>18</td>
<td>35</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cigarettes/day</td>
<td>16.96</td>
<td>1.12</td>
</tr>
<tr>
<td>Quit attempts in past 12 months</td>
<td>2.66</td>
<td>1.01</td>
</tr>
</tbody>
</table>

*Missing data for (n=2). TAFE, technical and further education.
**Message Preferences**

Participants indicated the ads they considered to be most effective were tobacco control health warning messages that were highly emotive delivered either via graphic imagery or in a form of personal testimonial. Feelings of guilt and fear were repeatedly mentioned. When participants were initially asked about anti-smoking television advertising, the most frequently recalled ads were highly emotive examples involving children “you see the kids suffering it makes you think about it because you’ve got kids, but that’s the only ads that I’ll actually take into consideration and felt for” (Group 3). This was also true for pack HWLs using children, in particular mothers were more likely to “hate the baby one…that one disturbs me, but I don’t care about the rest of them” (Group 1). Following presentation of the three 30-second anti-smoking ad clips, there was a general agreement that the personal testimonial ‘Anthony’ and graphic imagery ‘Bronchoscopy’ ads were more effective than the ‘Get Off Cigarettes’ how-to-quit ad.

Ads that provided role modelling of cessation behaviour were also recalled and discussed. Some smokers expressed a preference for positive messages such as descriptions of the health benefits of quitting or ads describing the way in which willpower can grow. Ads which provided a ‘real’ illustration of the experience of quitting smoking were also commended for presenting scenarios that smokers could relate to.
Personal stories

The reasons cited for the effectiveness of the ‘Anthony’ personal testimonial ad were “knowing the guy died” (Group 5), the ad being “heart-wrenching” (Group 3) and “because he wanted to stay alive to see his daughter and he died before” (Group 4). Many participants reported that television ads featuring the personal testimonial of smokers grabbed their attention “They don’t have to put the gruesome **** on there…as soon as they have someone telling what they’re going through…because of smoking, that sends the message home” (Group 4). Similarly, the most frequently cited new cigarette pack HWL was ‘Brian’, an image displaying the rapid deterioration of a 34-year-old male dying from lung cancer “I mean it does affect me, like seeing Brian, yes, is really sad” (Group 5). Similarity of the participant’s circumstances to that of the character in the ad (age, gender, being a parent) was perceived to increase the impact of the ad for the smoker. Similarly, participants who did not identify with the character in the ad stated the ad did not evoke a response.

Graphic imagery and health concerns

Aspects of the graphic health warning ‘Bronchoscopy’ ad which were considered effective according to participants were “the sound of that breathing” (Group 1) and “the lung one, that’s sickening looking, seeing the insides of a smoker” (Group 2). Many discussed ads referencing a smokers breathing as being easy to relate to “she’s got the oxygen mask on and she’s got emphysema, and they can hardly walk ten feet without getting short of breath, and that’s frightening for someone whose been smoking for years” (Group 1), and “It actually makes me think about my husband and the way he breathes.”
Makes me panic. Do I need to go get him to a doctor” (Group 5). Graphic warnings that communicated messages concerning the health effects of tobacco use prompted personally relevant health concerns in some participants.

There was a lot of discussion around the new health warning labels, which increased in size and contained new graphic and supportive text warning messages. Novel HWLs appearing on new plain packs sparked interest “if it’s a good interesting picture, like the…tongue cancer…I’d never seen that one…I sat down and while I was smoking I was actually reading it and…thinking wow, that’d be painful having tongue cancer” (Group 5). Although graphic warning labels featured on cigarette packs were perceived as “disgusting” (Group 1), most participants said they generally “do not even look at the warning” (Group 2), others indicated “they don’t affect me at all. I get desensitised really quickly” (Group 5). While most participants admitted they noticed the new HWLs that accompanied plain packaging at first, the idea of being desensitised to the graphic images in HWLs was repeatedly mentioned.

Cessation information
The ‘Get Off Cigarettes’ how-to-quit ad viewed during the focus group was praised for delivering a positive message, but was not considered as hard-hitting as the other ads, and probably “more effective to those who are maybe ready to quit” (Group 5). All participants agreed that the information provided on the pack HWLs is insufficient to support someone wanting to make a quit attempt. Not all participants reported reading the health warning information on the back of the pack, with some suggesting that it is “too little, I can’t see it” and
that “people don’t take notice of it anyway” (Group 3). There appeared to be little uptake of message or use of how-to-quit information communicated to smokers via the pack or television ads.

**Prompt to action**

There was a general agreement among participants that HWLs did increase their thoughts about quitting. However, some participants felt it was too late for the impact of HWLs to help them with quitting “you just move on from the pictures and think oh ****, it’s too late now anyway” (Group 5). A number of participants mentioned that they “probably learn more from the ads you see on TV” (Group 5). For many, seeing an anti-smoking ad triggered cigarette cravings “It reminds me to have a smoke” (Group 2), with both the imagery of smoking and the words ‘cigarette’ and ‘smoke’ cited as prompts for this craving. A few participants admitted that seeing an ad might delay their plans to have a cigarette, or result in them engaging in substitution behaviours such as eating a mint. Although some participants expressed an interest in quitting “I wish I could let those ads scare me…scare myself into quitting” (Group 5), most reported that seeing anti-smoking TV ads did not make them think about quitting.

**Telephone Quitline**

Calling the Quitline that is advertised on all cigarette packs in Australia and in each anti-smoking ad was not a popular option for seeking help as people “just never thought of it” (Group 2), “assumed it wouldn’t do anything” (Group 1), or thought “it just would be like speaking to a telemarketer” (Group 1). Participants were also sceptical about the person they would talk to “it just seems like calling
this weird robot person” (Group 3). Barriers to Quitline use such as expectations of “it’s going to cost you” or being put “on hold” (Group 2) were also mentioned. Accessing professional medical help was seen as a more appropriate option “I think you’ve got to go to the doctors” (Group 4), however there was still a persistent belief among many that quitting came down to willpower alone.

Warning messages more appropriate for youth
Generally, participants seemed to think that plain packaging and pack HWLs were “aimed at young people” (Group 4) and “probably better for the new generation” (Group 2) in terms of encouraging cessation. Similarly, while many participants felt that anti-smoking television ads were wasted on them, “I think it’ll probably have more effect on them [younger ones] than us” (Group 6), agreeing that they were good for educating children and were most likely to impact on the younger generation.

Avoidance of health warning and quit messages
While the impact of health warning information was perceived to be transitory or short-lived, a consistent theme throughout group discussions was an avoidance of health warning information. Most participants reported they did not read the HWL information set out on cigarette packs, and simply avoided looking at the graphic images. Others went further and reported that they purchased “stickers to actually cover up the words” (Group 3), bought “hard cases…so you don’t have to look at any of the pictures” (Group 3), or “just pull all the cigarettes out, put them in a bum bag so you don’t have to look at the bloody package” (Group 4). For some these behaviours were regular “Just like every time you get a
pack...take tobacco straight out of the pack, put them into me two tins and chuck the packet away” (Group 5), while temporary for others “only lasted a couple of weeks maybe, tops and then we just went back to smoking as we usually do” (Group 6). It appeared for smokers who had taken to these avoidance behaviours after the implementation of plain packaging, changes were reactionary and not permanent.

The most common way to avoid the health warning and quit messages communicated via TV ads was to “change the channel” (Group 3) as “you surf past it on the remote” (Group 2). Some smokers simply said “I don’t watch them” (Group 4), others specified “I just put my head down” (Group 4) or “I have just walked away before” (Group 1), and many reported here to “turn the volume down” (Group 6). A number of participants said they used the time to go and have a cigarette “I usually have a cigarette in the ad” (Group 5). Participants reported actively avoided engaging with television health warning messages.

**Self-exempting beliefs**

Participants suggested that the health effects messages were exaggerated and were not part of the lived experience of smokers: “The majority of people that smoke all their life don’t end up with like their foot rotting off or no teeth in their head…It’s sort of like an amplified message basically, it’s not realistic” (Group 2). Many were under the impression that the graphic images that accompanied HWLs on cigarette packs were not direct results of smoking “There’s a picture on one of them…the foot. And its gangrene, it’s not because of smoking. It’s just gangrene” (Group 5). Most discussed a new Australian HWL that displayed
before-and-after pictures of a 34-year-old male dying from lung cancer “there’s a packet with a man on it, like he’s dying and…he wasn’t even dying from smoking. No, he died of AIDS” (Group 4). Others were sceptical about the imagery depicted in some TV ads, in particular the famous Australian ‘Sponge’ ad “I’m thinking if that much **** comes out of your lungs with smoking in 12 months, I should be dead…And it is actually real tar that he’s actually squeezing out?” (Group 4). One participant said that they “just sort of like ignore it a bit and think oh no, that doesn’t happen” (Group 5), while another said “It isn’t worth watching it because you’re in denial about it anyway” (Group 2). Some participants had a lack of knowledge of the range of negative health effects associated with smoking “The only way you get cancer from smoking is either lung cancer or bowel cancer or something like that” (Group 5). Participants expressed numerous beliefs that distanced them from the health warning message.

**Misperceptions: plain packaging**

Prior to the implementation of plain packaging, there was limited knowledge about what packs would look like “When they said plain I just thought plain colour like they’re all going to be black, or all white” (Group 3). Participants suggested that “for people starting something up it would definitely have an impact” (Group 1), however “what’s on the pack is not going to fix an addiction” (Group 2) and therefore it was unlikely to impact their own established smoking behaviour.
In groups conducted after the implementation of plain packaging, participants judged that the change had little impact on their smoking behaviour, other than at time of purchase having to “double check whether they’re giving you the right cigarettes” (Group 4). However, as discussions progressed, some discussed reductions in product quality “I’ve noticed the difference in the grading of the tobacco” (Group 4); while others thought “they’re all the same now, smokes. Everyone’s all the same” (Group 5). Following the implementation of plain packaging, perceptions of the quality and taste of cigarettes had changed.

6.5 Discussion

The findings of this research suggest that tobacco control messages communicating the risks of tobacco use and benefits of cessation may not be resonating with socioeconomically disadvantaged smokers. The results suggest that this may be due to these smokers not identifying with characters depicted in ads, perceiving themselves as being desensitised to warnings, and misperceptions and a lack of knowledge about the harms of tobacco use.

Messages that are most likely to affect socially disadvantaged smokers are those that use highly emotive content, messages around children and family, more immediately relatable health concerns and characters that the smokers can identify with. It is likely that further research is needed to determine the best ways of engaging with vulnerable smokers, who reported employing numerous warning message avoidance behaviours and holding self-exempting beliefs towards the harms of tobacco use.
The findings of the current research support the use of highly emotive messaging techniques to communicate the anti-smoking message to socially disadvantaged smokers. This is consistent with previous research suggesting highly emotive MMCs delivering negative health effects message content via graphic imagery or use of personal stories are the most effective, particularly among low SES groups.\(^6\) This messaging strategy is the most likely to motivate smokers toward quit behaviour and cognitions.\(^6, 23, 24\) Similarly, large pictorial HWLs, designed to evoke highly emotive and visceral responses, are most likely to be noticed and recalled by smokers,\(^8\) and are more effective in increasing knowledge and promoting cessation.\(^7, 9\) Although participants reported high levels of desensitisation to health warning messages, it is possible that disadvantaged smokers are more affected than they have self-reporting here. Maximising HWL cut-through is important given the high participation in warning avoidance behaviours among this group. Future research should focus on determining the most effective message content.

Improvement in how-to-quit message warning content is also needed, as smokers suggested there was insufficient information available in warning messages to help them progress towards quitting. Early research on a new approach to the how-to-quit message using a television campaign guiding smokers through the steps to becoming an ex-smoker has shown positive results.\(^25, 26\) Further education campaigns about what services and support the Quitline can offer smokers may be required, given low levels of reported use and interest in the service among this group. The call to investigate the best ways to encourage disadvantaged smokers to contact Quitline has been
expressed previously, in light of the overall low engagement of these groups with the service.\(^{(27)}\) Further promotion and education on existing cessation services may be needed as they appear to be underutilised by this group of smokers.

Socioeconomically disadvantaged smokers in this sample expressed false beliefs and suspicions that the harms of tobacco use claimed by health warning messages are overstated. Less well-educated smokers are more likely to hold self-exempting beliefs\(^{(15)}\) and low SES smokers are known to have poorer awareness of the risks of smoking.\(^{(14)}\) Previous research has demonstrated the value of using television campaigns to support HWLs.\(^{(2, 28)}\) It was clear among this sample that new HWLs introduced on plain packs were met with false beliefs about the origin of the health effects depicted in the warnings. A complementary packaging and television advertisement campaign strategy could positively influence risk awareness and reduce false beliefs. Given that low SES smokers are more present-oriented,\(^{(29)}\) future development of tobacco control messaging could explore the impact of more short-term and immediately relevant health concerns of socially disadvantaged smokers.

Reactions to new Australian pack regulations support plain packaging policy and are consistent with telephone survey research conducted during the policy roll-out phase, in which smokers smoking from plain packs perceived their cigarettes to be lower in quality and less satisfying than those smoking from branded packs.\(^{(11)}\) Over a short time period the removal of brand imagery and enlargement of HWLs led smokers in this sample to question product content,
quality and brand differentiation. Tobacco-industry research demonstrates that smoker's taste ratings of the same cigarettes differ according to the packaging colour.\(^{(30)}\) This is known as the concept of ‘sensation transfer’, where the design of the pack influences the consumer’s experience of the product. Tobacco companies use this concept to maximise the role of packaging in tobacco marketing.\(^{(30)}\) Information contained in tobacco-industry documents demonstrates pack elements such as colour, imagery, descriptor terms and structure are used to differentiate or reposition brands as luxury or economy, target groups of smokers such as young adults or women, and to impact on the perceptions of product taste.\(^{(30)}\) These findings demonstrate the importance of branding in the tobacco market, as well as for the smoking experience and suggest the initial success of plain packaging policy in breaking down some of these well-established brand associations. Additionally, it is likely that plain packaging policy has increased the opportunity for engagement with HWLs as participants reported they now needed to read the pack to ensure they had purchased the correct brand.

The primary strength of this study is the sample of highly disadvantaged smokers with low levels of education, unemployed with very low income and in receipt of crisis welfare aid. Disadvantaged groups are often hard-to-reach populations for research, and subsequently little literature exists regarding their responses to a number of tobacco control strategies. While the results suggest limited effects of health warnings among this group who perceive themselves as desensitised to warnings, it may be the case highly disadvantaged smokers are more affected by warnings than we have captured here. We note that
participants in groups conducted prior to the full implementation of plain packaging policy may have already seen or purchased packs, however this did not arise in group discussions. We also note that while the television advertisements shown to participants during group discussions were not new campaign ads, they were not in current rotation at the time of the study and so campaign effects were likely to have decayed by this time.

The results of this research indicate that tobacco control messages continue to be met with strong resistance by disadvantaged smokers. To reduce the smoking rate among socially disadvantaged groups it remains important to address false or self-exempting beliefs about the harms of tobacco use. It is also necessary to educate this group on existing cessation services that are currently underutilised.
6.6 References


9. HAMMOND D, FONG GT, MCNEILL A, BORLAND R, CUMMINGS KM.


7. Introduction to Paper Four

Paper Three revealed that disadvantaged smokers continue to engage in avoidance behaviours when faced with anti-smoking health warning messages emphasising the importance of finding ways to maximise message cut-through, reduce misperceptions and challenge self-exempting beliefs. In an extension of the recommendations of the WHO FCTC Article 11, and a world first in tobacco control the Australian government introduced plain standardised packaging for tobacco products in 2012. The policy was introduced with the primary aims of reducing product appeal, increasing the effectiveness of health warning labels, and reducing misperceptions about the harms of smoking.\(^{(1)}\)

There exists an exhaustive literature on the ways that tobacco companies have used tobacco packaging to influence a consumer’s experience of the product and to interfere with perceptions of risk.\(^{(2-9)}\) The Australian plain packaging policy strips tobacco product packaging of all branding elements and significantly increases the pack surface area reserved for health warning information. The results of the study presented in Paper Three indicate that plain, standardised packaging for cigarettes may have already served to break down some of the well-established associations between product branding and experience. Smokers in the focus groups conducted after the implementation of plain packs report noticing reductions in quality of the tobacco despite (presumably) no changes being made to the product itself. Paper Four tests the impact of plain packaging on measures of brand appeal and purchase intent more directly and quantitatively.
Prior plain packaging simulation studies used to inform the development of policy were largely conducted with general population samples via online or telephone surveys.\(^{2, 7, 10-12}\) Investigation of the impact of plain packaging on the perceptions and intentions of disadvantaged smokers has however, been absent from the literature. Paper Four examines brand appeal ratings and purchase intentions associated with branded cigarette packs compared with Australian plain packs among socioeconomically disadvantaged smokers.
7.1 References


8. Socioeconomically disadvantaged smokers’ ratings of plain and branded cigarette packaging: an experimental study. (PAPER FOUR)

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The definitive version is available at: http://bmjopen.bmj.com/content/4/2/e004078.full

Associated appendices:
15. Appendix B: Tobacco control survey materials
   15.1 – Ethics approval: touchscreen computer survey
   15.2 – Information Statement
   15.3 – Touchscreen computer tobacco control survey
8.1 Abstract

Objectives. This study aimed to test the potential impact of plain packaging for cigarettes on brand appeal among highly socioeconomically disadvantaged smokers using the new design for cigarettes implemented in Australia, which combines plain packaging with larger health warning labels.

Design. A 2×2 factorial design trial embedded within a cross-sectional computer touchscreen survey. Data were collected between March and December 2012.

Setting. Socially disadvantaged welfare aid recipients were recruited through a large Social and Community Service Organisation in New South Wales, Australia.

Participants. N=354 smokers. The majority of the sample had not completed high school (64%), earned less than $A300/week (55%) and received their income from Government payments (95%).

Interventions. Participants were randomised to one of the four different pack conditions determined by brand name: Winfield versus Benson & Hedges, and packaging type: branded versus plain. Participants were required to rate their assigned pack on measures of brand appeal and purchase intentions.

Results. Plain packaging was associated with significantly reduced smoker ratings of ‘positive pack characteristics’ (p<0.001), ‘positive smoker characteristics’ (p=0.003) and ‘positive taste characteristics’ (p=0.033) in the Winfield brand name condition only. Across the four pack conditions, no main differences were found for ‘negative smoker characteristics’ (p=0.427) or
'negative harm characteristics’ (p=0.411). In comparison to plain packaging, the presentation of branded packaging was associated with higher odds of smokers’ purchase intentions (OR=2.18, 95% CI 1.34 to 3.54; p=0.002).

**Conclusions.** Plain packs stripped of branding elements, featuring larger health warning labels, were associated with reduced positive cigarette brand image and purchase intentions among highly socioeconomically disadvantaged smokers.
8.2 Introduction

Smoking rates are disproportionately high among groups who experience multiple levels of disadvantage such as those with low income (26%),\(^1\) indigenous populations (50%),\(^2\) the homeless (69–73%)\(^3,\,4\) and individuals with a mental illness (35–90%).\(^5-7\) Comparatively, the population smoking rate in Australia is 15%.\(^1\) Therefore, evaluating tobacco control approaches for effectiveness with disadvantaged social groups is a priority.

Cigarette manufacturers use the cigarette pack to promote their product in a number of ways. The cigarette pack is highly visible to both the user and others,\(^8\) and reinforces brand image.\(^9\) Packaging distinguishes brands from competitors and communicates brand imagery, character and values.\(^9,\,10\) Pack design can also be used to target segments of the market. For example, packs targeting women typically use bright graphics and feminine colours, descriptor terms such as ‘slim’ and ‘thin’ and packaging with increased height and decreased width compared with standard packaging.\(^11\) To engage the youth market, pack designs are novel, with fashionable designs and attractive imagery, have innovative pack construction (ie, pack shape and method of opening) and promote ‘mild’ taste or ‘smoothness’.\(^12\) Economy packs that emphasise quality are important for targeting low-income smokers, and often use design elements such as printing product price on packaging.\(^13\) Packaging has been particularly important in markets such as Australia where stringent advertising restrictions have long prohibited traditional avenues of advertising and promotion of brand and product.
Design elements of the cigarette pack are constructed to capture starter smokers, encourage brand-switching and brand loyalty and to expand market share.\(^9,13\) Packaging colours, product descriptors, brand imagery and logos have all been shown to impact on the perceptions and experiences of the product.\(^{14}\) A colour code for tobacco products is well established: lighter packaging colours are perceived to contain a product that is less harmful to health. Numerous studies have shown that smokers associate the colour ‘red’ with high strength and harshness, ‘blue’ as being mild and anything progressively lighter as healthier or less harmful.\(^{15,16}\) Similarly, many countries have banned the use of descriptor terms such as ‘light’, ‘mild’ and ‘low tar’ as cigarettes labelled with these terms are falsely perceived as being less harmful to health, and easier to give up.\(^{16}\) Replacement terms such as ‘gold’, ‘silver’ and ‘smooth’ were still perceived as less harmful than regular varieties, suggesting that removal of both colours and descriptor terms may be more effective than the removal of either alone in reducing false beliefs about tobacco risk.\(^{14}\) Health warning labels (HWLs) that use pictures, supportive text and take up larger portions of the pack space have been shown to increase the effectiveness of the warnings in communicating risk and promoting cessation.\(^{17,18}\) Specifically, in a cross-sectional survey in the USA, Bansal-Travers et al.\(^{17}\) found that participants selected larger, pictorial and loss-framed HWLs as the most effective in communicating health risks.

Evidence from plain packaging simulation studies shows that progressively plainer cigarette packaging, incorporating larger HWLs and fewer branding elements, was perceived as less attractive,\(^{19,20}\) reduced false beliefs about
tobacco risk\textsuperscript{(14, 17)} and was associated with cessation intentions.\textsuperscript{(8, 20)} Wakefield and colleagues have conducted a number of online simulation experiments, exposing participants to pack conditions which vary by brand, degree of plain packaging\textsuperscript{(19, 21)} and HWL size.\textsuperscript{(20)} The studies found that packs with progressively fewer branding elements were perceived as less appealing overall,\textsuperscript{(19)} larger HWLs combined with plain packs reduced adolescents’ positive ratings of packs,\textsuperscript{(21)} and presentation of plain packs compared with branded packs increased participant intentions of not purchasing a pack.\textsuperscript{(20)} However, none of these studies examined differences in effects by socioeconomic status (SES). Additionally, best-worst\textsuperscript{(8)} and experimental auction\textsuperscript{(22)} studies have found plain packs featuring large graphic HWLs were the most effective pack type in reducing demand and promoting cessation among adult smokers.

The Australian Government’s Tobacco Plain Packaging Act 2011 legislated mandatory plain and standardised packaging on cigarettes sold in Australia, which include dark colour, pictorial and supportive text HWLs that cover at least 75% front-of-pack and 90% back-of-pack, have all logos and branding removed and use only specified font styles and sizes.\textsuperscript{(23)} The policy also limits pack and stick dimensions. The legislation was introduced to reduce product appeal, increase the effectiveness of health warnings and reduce misperceptions about the harms of smoking. The first study to examine effects of plain packaging during the roll-out phase using a computer-assisted telephone survey found that compared with smokers smoking from branded packs, smokers with plain packs were more likely to perceive their tobacco as being lower in quality and
satisfaction, to think about and prioritise quitting and to support the plain packaging policy.\textsuperscript{(24)} However, this study had a low representation of disadvantaged smokers, did not examine effects by SES and did not control for novelty of HWL content. While there is evidence of reduced appeal for plain packaging compared with branded packaging of tobacco products within the general population, it is important to investigate whether similar effects are likely to occur for groups experiencing social and financial hardship. The aim of this study was to examine brand appeal and purchase intentions associated with branded cigarette packs compared with the new design Australian plain packs, among a sample of socioeconomically disadvantaged smokers.

8.3 Methods

Design

A two-by-two packaging type (branded vs plain) by brand name (Winfield vs Benson & Hedges (B&H)) factorial experimental design was used, thereby randomly exposing participants to one of a possible four cigarette pack conditions. Each participant completed a uniform series of pack ratings within the experimental condition they were assigned. Data were collected using a touchscreen computer between March and December 2012.

Setting and sample

As the target population for the study was smokers with high social disadvantage, the sample was drawn from a service outlet of a large, national non-government, social and community service organisation (SCSO). The service provides ‘emergency relief’ welfare such as food vouchers, grocery
items and financial aid to individuals experiencing various forms of social and financial hardship in a large catchment area of Western Sydney, New South Wales. The client profile of SCSO’s includes an over-representation of disadvantaged groups including Aboriginal and Torres Strait Islanders, single parents, long-term unemployed and those whose primary income is a government benefit.\(^{(25)}\)

Those eligible to participate were clients aged over 18 years, able to comprehend English and who were not too ill or distressed to take part (as judged by SCSO staff). Previous research has demonstrated high smoking prevalence rates of 60–70% among SCSO clients.\(^{(26)}\)

**Recruitment**

Clients were introduced to the study when they attended the SCSO for their emergency relief appointment. SCSO staff explained that a touchscreen computer survey about smoking was being conducted and if clients were interested, they were led to a private room where a research assistant (RA) provided further detailed information. The RA provided assistance to complete the survey if required. As the survey was anonymous, survey completion was taken as implied consent. Participants were reimbursed for their time with an $A20 grocery voucher.

**Smoking status**

Smoking status was assessed by asking ‘Do you currently smoke tobacco products?’ with response options (1) ‘yes, daily’, (2) ‘yes, at least once a week’,
(3) yes, but less often than once a week’ and (4) ‘no, not at all’, followed by asking ‘Have you smoked at least 100 cigarettes or a similar amount of tobacco in your life’ (yes/no/not sure). Those who reported to smoke daily, or who reported to smoke occasionally as well as having smoked at least 100 cigarettes in their life were classified as current smokers. Once smoking status was assessed non-smokers exited from the survey.

Figure 8.1 Pack image used for each pack condition within the two by two packaging type (branded vs plain) by brand name (Winfield vs Benson & Hedges) between-subject experimental design.
Presentation of experimental conditions

The study was conducted on a Dell Latitude XT3 (2.50 GHz processor) touchscreen computer, using Digivey version 4 software. Participants were randomly allocated to one of the four cigarette pack conditions by Digivey's randomise function, which uses a pseudo random number generator provided by the underlying programming language (see: http://msdn.microsoft.com/en-us/library/system.random(v=vs.90).aspx). Branded pack conditions replicated cigarette packs available for purchase at the time of survey; plain pack conditions tested the new plain packaging design, combining plain packaging stripped of branding elements with larger HWLs. The four pack conditions were: (1) branded Winfield Blue 25; (2) plain Winfield Blue 25; (3) branded B&H Smooth 25 and (4) plain B&H Smooth 25 (see figure 8.1). Within each pack condition, respondents were presented with a standard set of items to rate their assigned pack. All pack conditions featured the same graphic image and text HWL: ‘smoking causes peripheral vascular disease’ that first appeared on Australian cigarette packs in 2006. The brands used were two of the most popular brand variants in the Australian mainstream (Winfield (Blue 25)) and premium (B&H (Smooth 25)) cigarette markets. Plain pack digital images were created using specifications outlined in the Australian Government’s Tobacco Plain Packaging Act 2011, while images of branded packs were supplied by the Centre for Behavioural Research in Cancer, Victoria, Australia.
**Outcome measures**

**Brand appeal**

While viewing the assigned pack image, respondents were asked to rate packs on various pack, smoker and taste characteristic statements (see Table 8.1). These items were developed by Wakefield et al.(19-21) based on past tobacco industry packaging studies used to assess pack attractiveness, brand imagery characteristics and perceived sensory attributes. Among adult smokers, these items have variably been used as: individual outcome items;\(^{(19)}\) or combined to form four outcome scales and one individual item with inter-item reliability statistics presented.\(^{(20)}\)

Brand appeal rating items were combined to form four scales and one stand-alone item in order to replicate the outcome measure structure of Wakefield et al’s previous plain packaging study.\(^{(20)}\) The outcome measures were: (1) positive pack characteristics - ‘popular among smokers’; ‘attractive’; ‘sophisticated’; ‘a brand you might try/smoke’; (2) positive smoker characteristics – ‘trendy’ and ‘successful’; (3) negative smoker characteristic – ‘boring’; (4) positive taste characteristics – ‘enjoyable to smoke’ and ‘satisfying in taste’ and (5) negative harm characteristics – ‘high in tar and nicotine’ and ‘harmful to your health’. Although these measures have shown strong-to-moderate internal consistency on Cronbach’s α previously,\(^{(20)}\) they have not been tested in the current population, thus we undertook Cronbach’s α assessment on scales with more than one item.
Scale reliability assessments revealed that the outcome measures had a moderate-to-strong internal consistency: positive pack characteristics ($\alpha = .83$); positive smoker characteristics ($\alpha = .71$); positive taste ($\alpha = .84$), and negative harm characteristics ($\alpha = .65$).

Table 8.1 Standard items used to assess responses to pack images.

<table>
<thead>
<tr>
<th>Survey items</th>
<th>Response scale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pack characteristics:</strong> How well do you think the following phrases relate to the cigarette pack shown?</td>
<td></td>
</tr>
<tr>
<td>This pack is popular among smokers</td>
<td>Response scale:</td>
</tr>
<tr>
<td>This pack is attractive</td>
<td>1 (not at all) to 7 (extremely)</td>
</tr>
<tr>
<td>This pack is sophisticated</td>
<td></td>
</tr>
<tr>
<td>This pack is a brand you might try/smoke</td>
<td></td>
</tr>
<tr>
<td><strong>Smoker characteristics:</strong> How well do you think the following characteristics describe a typical smoker of the pack shown?</td>
<td></td>
</tr>
<tr>
<td>A typical smoker of this pack is trendy</td>
<td>Response scale:</td>
</tr>
<tr>
<td>A typical smoker of this pack is boring</td>
<td>1 (not at all) to 7 (extremely)</td>
</tr>
<tr>
<td>A typical smoker of this pack is successful</td>
<td></td>
</tr>
<tr>
<td><strong>Taste attributes:</strong> Please rate the following phrases describing the taste of cigarettes from the pack shown.</td>
<td></td>
</tr>
<tr>
<td>I would expect the cigarettes in this pack to be enjoyable to smoke</td>
<td>Response scale:</td>
</tr>
<tr>
<td>I would expect the cigarettes in this pack to be high in tar and nicotine</td>
<td>1 (not at all) to 7 (extremely)</td>
</tr>
<tr>
<td>I would expect the cigarettes in this pack to be satisfying in taste</td>
<td></td>
</tr>
<tr>
<td>I would expect the cigarettes in this pack to be harmful to your health</td>
<td></td>
</tr>
</tbody>
</table>
**Purchase intentions**

Participants were presented with images of the two brand name options (Winfield and B&H) on a single screen and asked: “If you ran out of cigarettes and only the packs below were available in the store you went to, which would you be most tempted to buy?” Participants could choose between the two brand name images or select ‘I would not buy any’. Participants who had previously viewed and rated a plain packaging image (ie, pack B or D; see figure 8.1) received plain image response options, and those who had previously rated a branded packaging image (ie, pack A or C) received branded image response options at this question.

**Socio-demographic variables**

Gender, age, income, income source, Aboriginal or Torres Strait Islander status, marital status, highest level of education and housing type were assessed.

**Statistical analyses**

Analyses were conducted using Stata V.11 (www.stata.com). Characteristics of participants are presented by intervention group to assess the success of the randomisation.

**Outcome measure assessment**

As the outcome variables were not normally distributed we used non-parametric methods for analysis. Median scores with 95% CIs are presented graphically for each of the four pack conditions. Exploratory data analysis indicated that there may be a potential pack type by brand name interaction, that is, the
relationship between packaging types (branded vs plain packaging) differed for the two different cigarette brand names. As the study had limited statistical power to assess interaction effects, we did not formally test this, but undertook analysis considering the four pack conditions separately, rather than as a factorial design. The Kruskal-Wallis test was used as a global assessment of differences in factor scores among the four pack conditions. If the p value for this test was <0.1, pairwise comparisons using the Wilcoxon rank sum test were undertaken to compare median scores between branded packaging and plain packaging for each of the two brand names. OR analyses were used to assess the effect of packaging type (branded vs plain) on purchase intention.

Sample size for this study was determined by requirements for another trial for which participants were recruited. Post hoc power calculations demonstrated that a sample of 350 participants (approximately 85 in each of the pack type by brand name groups) would allow detection of differences in scores between branded and plain packaging (within each brand name) of approximately half an SD, with 5% significance level and 90% power (to allow for some loss of power due to the use of non-parametric analyses).

8.4 Results

Sample
A total of 787 clients were approached by SCSO staff during the study period and 608 were eligible to be approached to participate by the RA. Of those, 581 (96%) completed the survey and 362 (62%) of them were identified as current smokers (daily and occasional). Eight smokers were excluded as they primarily
used something other than manufactured or roll-your-own tobacco. The
demographic details of the study participants in each intervention group are
presented in table 8.2. The majority of the sample had not finished high school
(64%), earned less than $A300/week (55%) and received their income from
Government benefit payments (95%). Sociodemographic characteristics were
similar across the four intervention groups.
Table 8.2 Demographic characteristics of the survey sample (N = 354).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Winfield Branded</th>
<th>Winfield Plain</th>
<th>B&amp;H Branded</th>
<th>B&amp;H Plain</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (% )</td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
</tr>
<tr>
<td>N</td>
<td>92 (26)</td>
<td>95 (27)</td>
<td>88 (25)</td>
<td>79 (22)</td>
<td>354</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 – 39</td>
<td>56 (61)</td>
<td>51 (54)</td>
<td>51 (58)</td>
<td>48 (61)</td>
<td>206 (58)</td>
</tr>
<tr>
<td>40+</td>
<td>36 (39)</td>
<td>44 (46)</td>
<td>37 (42)</td>
<td>31 (39)</td>
<td>148 (42)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>61 (66)</td>
<td>46 (52)</td>
<td>66 (70)</td>
<td>43 (54)</td>
<td>216 (61)</td>
</tr>
<tr>
<td>Aboriginal and/or Torres Strait Islander</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>23 (25)</td>
<td>14 (16)</td>
<td>17 (18)</td>
<td>10 (13)</td>
<td>64 (18)</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married / De facto / Living with partner</td>
<td>29 (32)</td>
<td>15 (17)</td>
<td>23 (24)</td>
<td>20 (25)</td>
<td>87 (25)</td>
</tr>
<tr>
<td>Separated / Divorced</td>
<td>27 (29)</td>
<td>29 (33)</td>
<td>27 (28)</td>
<td>20 (25)</td>
<td>103 (29)</td>
</tr>
<tr>
<td>Never married / Single / Widowed</td>
<td>36 (39)</td>
<td>44 (50)</td>
<td>45 (47)</td>
<td>39 (49)</td>
<td>164 (46)</td>
</tr>
<tr>
<td>Highest Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary school</td>
<td>0 (0)</td>
<td>4 (5)</td>
<td>4 (4)</td>
<td>4 (5)</td>
<td>12 (3.4)</td>
</tr>
<tr>
<td>High school years 7-10</td>
<td>62 (67)</td>
<td>54 (61)</td>
<td>59 (62)</td>
<td>39 (49)</td>
<td>214 (61)</td>
</tr>
<tr>
<td>High school years 11-12</td>
<td>11 (12)</td>
<td>13 (15)</td>
<td>13 (14)</td>
<td>14 (18)</td>
<td>51 (14)</td>
</tr>
<tr>
<td>TAFE / trade qualification</td>
<td>14 (16)</td>
<td>13 (15)</td>
<td>16 (17)</td>
<td>21 (27)</td>
<td>64 (18)</td>
</tr>
<tr>
<td>University degree</td>
<td>5 (5)</td>
<td>4 (5)</td>
<td>3 (3)</td>
<td>1 (1)</td>
<td>13 (3.7)</td>
</tr>
<tr>
<td>Personal Weekly Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;$299</td>
<td>54 (59)</td>
<td>55 (58)</td>
<td>48 (56)</td>
<td>38 (48)</td>
<td>195 (55)</td>
</tr>
<tr>
<td>&gt;$300</td>
<td>36 (39)</td>
<td>33 (35)</td>
<td>31 (35)</td>
<td>37 (47)</td>
<td>137 (39)</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>2 (2)</td>
<td>7 (7)</td>
<td>9 (10)</td>
<td>4 (5)</td>
<td>22 (6)</td>
</tr>
<tr>
<td>Income source</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paid work</td>
<td>6 (7)</td>
<td>2 (2)</td>
<td>4 (4)</td>
<td>1 (1)</td>
<td>13 (3.7)</td>
</tr>
<tr>
<td>Government payment (Centrelink)</td>
<td>85 (92)</td>
<td>85 (97)</td>
<td>89 (94)</td>
<td>76 (96)</td>
<td>335 (95)</td>
</tr>
<tr>
<td>Other</td>
<td>1 (1)</td>
<td>1 (1)</td>
<td>2 (2)</td>
<td>2 (3)</td>
<td>6 (1.7)</td>
</tr>
<tr>
<td>Housing type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own house/private rental</td>
<td>26 (28)</td>
<td>31 (33)</td>
<td>28 (32)</td>
<td>23 (29)</td>
<td>108 (31)</td>
</tr>
<tr>
<td>Government rental</td>
<td>55 (60)</td>
<td>42 (44)</td>
<td>44 (50)</td>
<td>43 (54)</td>
<td>184 (52)</td>
</tr>
<tr>
<td>Homeless/Supported accommodation</td>
<td>11 (12)</td>
<td>22 (23)</td>
<td>16 (18)</td>
<td>13 (17)</td>
<td>62 (18)</td>
</tr>
<tr>
<td>Regular cigarette brand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winfield</td>
<td>10 (17)</td>
<td>16 (21)</td>
<td>14 (24)</td>
<td>10 (18)</td>
<td>50 (20)</td>
</tr>
<tr>
<td>Benson &amp; Hedges</td>
<td>1 (1.7)</td>
<td>1 (1.3)</td>
<td>2 (3.5)</td>
<td>0 (0)</td>
<td>4 (1.6)</td>
</tr>
<tr>
<td>Other</td>
<td>36 (62)</td>
<td>50 (65)</td>
<td>34 (59)</td>
<td>36 (66)</td>
<td>156 (63)</td>
</tr>
<tr>
<td>I don’t have a regular brand</td>
<td>11 (19)</td>
<td>10 (13)</td>
<td>8 (14)</td>
<td>9 (16)</td>
<td>38 (15)</td>
</tr>
<tr>
<td>Regular tobacco type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufactured cigarettes</td>
<td>58 (63)</td>
<td>77 (81)</td>
<td>58 (66)</td>
<td>55 (70)</td>
<td>248 (70)</td>
</tr>
<tr>
<td>Roll-your-own tobacco</td>
<td>34 (37)</td>
<td>18 (19)</td>
<td>30 (34)</td>
<td>24 (30)</td>
<td>106 (30)</td>
</tr>
</tbody>
</table>

B&H, Benson & Hedges; TAFE, technical and further education
Figure 8.2 Median ratings with 95% CI for each response scale by pack condition (N=354).

*B&H refers to the Benson & Hedges brand name condition.
Brand appeal ratings

Figure 8.2 displays ratings across the four pack conditions on the positive pack (A), positive smoker (B), negative smoker (C), positive taste (D) and negative harm (E) response scales. The positive pack scale varied significantly across the pack conditions ($p = 0.001$), with pairwise comparisons revealing that branded packaging images were rated significantly more positively than plain packaging images in the Winfield condition ($p < 0.001$); however, there was no difference in the B&H condition ($p = 0.102$; see table 8.3). Positive smoker characteristic ratings were significantly different across the four pack conditions ($p = 0.003$); branded packaging images were rated more positively than plain packaging images within the Winfield condition ($p = 0.001$), but not the B&H brand name condition ($p = 0.197$), see table 8.3. There was no difference in the negative smoker characteristic ratings across the four pack conditions ($p = 0.427$). The four pack conditions were rated significantly differently when assessing positive taste characteristics ($p = 0.033$). Pairwise comparisons revealed that plain packaging images were less appealing on taste attributes than branded packaging images for the Winfield condition ($p = 0.004$); however, there were no differences detected in taste ratings between plain and branded packaging images in the B&H condition. The four pack conditions rated similarly with regard to negative harm characteristics ($p = 0.411$) as shown in figure 8.2E and table 8.3.

Purchase intent

Participants were asked to choose which pack, if any, they would prefer to purchase out of the two brand names used in this study. Participants who
viewed plain packaging images only were more likely to select that they would not buy any of the presented options (35%), compared with those who viewed branded packaging images (19%; OR = 2.2, 95% CI 1.3 to 3.5; p = 0.002).
### Table 8.3 Effect of pack condition on brand appeal ratings (N = 354).

<table>
<thead>
<tr>
<th>Pack Condition</th>
<th>Winfield_Branded</th>
<th>Winfield_Plain</th>
<th>B&amp;H_Branded</th>
<th>B&amp;H_Plain</th>
<th>Global test</th>
<th>Pairwise</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Median (95%CI)</td>
<td>Median (95%CI)</td>
<td>Median (95%CI)</td>
<td>Median (95%CI)</td>
<td>P (branded v plain)</td>
<td>P (branded v plain)</td>
</tr>
<tr>
<td>Positive pack</td>
<td>3.86 (3.5 – 4.25)</td>
<td>2.25 (2 – 2.5)</td>
<td>2.63 (2.07 – 3.25)</td>
<td>2.5 (1.75 – 2.75)</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Positive smoker</td>
<td>2.5 (2 – 3.5)</td>
<td>1 (1 – 2)</td>
<td>2.5 (2 – 3)</td>
<td>2.5 (1.5 – 2.87)</td>
<td>0.003</td>
<td>0.001</td>
</tr>
<tr>
<td>Negative smoker (boring)</td>
<td>2 (1 – 3)</td>
<td>2 (1 – 2)</td>
<td>2 (1 – 3)</td>
<td>3 (1.27 – 3.73)</td>
<td>0.427</td>
<td>n/a</td>
</tr>
<tr>
<td>Positive taste</td>
<td>4 (3.5 – 4.5)</td>
<td>3 (2.11 – 3.5)</td>
<td>3.75 (3 – 4)</td>
<td>3 (2 – 4)</td>
<td>0.033</td>
<td>0.004</td>
</tr>
<tr>
<td>Negative harm</td>
<td>5.5 (4.55 – 6)</td>
<td>5.5 (4.5 – 6)</td>
<td>4.5 (4 – 5.5)</td>
<td>6 (5.14 – 6.5)</td>
<td>0.411</td>
<td>n/a</td>
</tr>
</tbody>
</table>

B&H, Benson & Hedges; n/a, not applicable
8.5 Discussion

This study found that plain cigarette packs were rated as significantly less appealing than branded packs in a sample of socioeconomically disadvantaged smokers. Branded packaging was viewed as more appealing, smokers of these packs were rated in a more positive way, and the cigarette taste was preferred compared to cigarettes in plain packaging. No differences between branded and plain packaging relating to negative smoker or negative harm characteristics were detected. Finally, plain packaging reduced cigarette purchase intentions in comparison with branded packaging among smokers. The overall results of this study are supportive of previous plain packaging simulation research conducted with general population samples suggesting that plain packs are viewed less favourably on measures of brand appeal than branded packs.\(^{19, 20}\)

One notable finding of this research, demonstrating the importance of branding in the tobacco market, was a possible interaction effect between packaging type (branded vs plain) and brand name (Winfield vs B&H). Plain pack images were rated consistently lower than branded images on measures of positive pack, positive smoker and positive taste appeal for the Winfield condition, but no differences were detected for the B&H condition. It might be expected that plain packaging of B&H cigarettes is unlikely to have much effect among socially disadvantaged smokers as this brand is positioned as a premium product at a high price point,\(^{29}\) with apparent low penetration among this smoker group: only 1.6% of participants reported regularly using B&H cigarettes compared with 9% in the general population.\(^{28}\) Comparatively, engagement with the ‘mainstream’, value-for-money Winfield brand is much higher among socially
disadvantaged smokers: participants reported regularly using this brand at the same rate as the general population (19%).\(^{(28)}\) Plain packaging has the potential to show stronger effects for brands that are personally relevant to the individual smoker.

Similarly to Wakefield et al’s previous simulation studies, this study found no difference between plain and branded cigarette packaging on negative harm ratings. This may indicate that the removal of branding elements such as colours, logos and fonts on packs is more effective in reducing brand appeal associations rather than tapping into negative harm perceptions. It is also likely that the measures used in this study, intended to assess brand appeal, were not adequate to assess negative harm perceptions related to packaging. It may also be the case that effects on perceived harm are stronger among youth than among adults, as previous simulation studies indicate plain packaging reduces false beliefs about smoking among adolescents\(^{(14)}\) and increases cessation intentions among young adults.\(^{(8)}\) Our study also found that the presentation of plain packaging, compared with branded packaging, reduced purchase intentions among socioeconomically disadvantaged smokers, consistent with previous simulations conducted with general population smokers.\(^{(20, 22)}\)

**Implications**

The results of this study support the move towards plain packaging policies for cigarettes. Most research used in the development of plain packaging policies was conducted with general population samples, with limited data to indicate how socioeconomically disadvantaged groups, who have among the highest
smoking rates, may respond to this tobacco control policy. The current study indicates that socioeconomically disadvantaged smokers are likely to respond similarly to the general population, with plain packaging reducing brand appeal ratings and purchase intentions among these smokers. Further research, particularly in low-income countries, could provide insight about the possibility of disseminating this policy internationally.

Early research in Australia indicates plain packaging makes tobacco less appealing and increases the urgency to quit smoking\(^{(24)}\); however, it will be important to monitor impact over time. Plain packaging policies have the potential to reduce smoking initiation. Associations with brand identity and appeal are motivating factors in smoking uptake among youth.\(^{(30, 31)}\) There are documented cases of cigarette rebranding, for example, the development of the Camel 'smooth character', to appeal to young adult smokers with the explicit intentions of increasing market share and prevalence of smoking among youth.\(^{(32)}\) Plain packaging policies prevent this kind of brand targeting and have the potential to reduce uptake among youth by reducing brand appeal and purchase intentions. It will also be important to assess the use of any avoidance strategies, such as pack stickers and cigarette cases and to monitor whether these are temporary solutions, or whether ongoing changes to policy are required.

**Strengths and limitations**

The primary limitation of the study is its reliance on a convenience sample limiting its external validity and generalisability. However, socially
disadvantaged groups are notoriously difficult to recruit and retain in health research.\(^{(33, 34)}\) Recruitment challenges were overcome by accessing community services as recruitment sites and using convenience samples. As a result, this study is the first to obtain a large sample of socially disadvantaged smokers’ responses to a simulation of a one-off exposure to an important tobacco control policy development. Since the policy has been implemented, socially disadvantaged smokers’ day-to-day experience is one of being exposed to these plain packs multiple times a day, and so the findings from this study may underestimate the real world effects of this change. This study was also limited by the measurement of purchase intentions rather than actual behaviour, the use of only two cigarette brands for comparison. Use of a wider range of brands for comparison is recommended for research in countries considering implementing plain packaging. Although the study employed a computer image instead of actual packs, previous packaging research demonstrates that results are generally consistent regardless of stimulus presentation modality.\(^{(22, 35, 36)}\)

The outcome measures used in this study pose an additional limitation. Although they were selected for the purpose of comparing results with previous plain pack research,\(^{(19, 20)}\) they have not been evaluated for validity or reliability and this should be assessed in the future.

As this study tested the Australian Government’s new plain pack design, which combines plain packaging with larger HWLs, we were unable to distinguish which factor (plain packaging or larger HWLs) produced the observed results. Previously, Wakefield et al\(^{(20)}\) examined the importance of branding versus HWL size on cigarette packaging, concluding that plain packaging reduced elements
of brand appeal far more than increasing the size of HWLs. In their study, when packs were plain, increasing the size of HWLs above 30% did not reduce brand appeal further. This finding suggests that the effects observed in the current study are more likely due to stripping the pack of branding elements, than increasing the HWL size. Finally, the last 2–3 months of survey occurred during the policy roll-out phase and participants may have already been exposed to and purchased plain packs. Prior exposure may have allowed participants to become familiar with the new pack designs, and may explain why participants did not rate packs differently on negative harm and smoker measures.

**Conclusions**

The findings of this study support plain packaging policy, and show this strategy has the potential to reduce positive associations with cigarette packs among a group of highly socioeconomically disadvantaged smokers. It will be important to monitor the long-term outcomes of plain packaging policy, particularly with regard to uptake of smoking in disadvantaged groups. Further plain pack research in low-income countries is recommended, to support the potential dissemination of the policy internationally.
8.6 References


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9. Introduction to Paper Five

The overall aim of this thesis was to explore aspects of three tobacco control strategies used in Australia with smokers from socioeconomically disadvantaged groups. In addition to mass media campaigns and plain packaging for cigarettes, the third tobacco control strategy investigated in this thesis was product pricing. Paper Five examines the use of price-minimisation strategies to manage current and hypothetically increased costs of smoking, as well as what role the experience of financial stress may play in this
10. Paying the price: A cross-sectional survey of Australian socioeconomically disadvantaged smokers’ responses to hypothetical cigarette price rises. (PAPER FIVE)

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The definitive version is available at:


Associated appendices:

15. Appendix B: Tobacco control survey materials
   15.1 – Ethics approval: touchscreen computer survey
   15.2 – Information Statement
   15.3 – Touchscreen computer tobacco control survey
10.1 Abstract

**Introduction and Aims.** Increases in tobacco taxation can lead to reductions in tobacco consumption and prevalence of use across social groups. However, use of price-minimisation strategies to manage current and future tobacco use and the role of financial stress is less understood. This study aimed to measure the effect of cigarette price increases on price-minimisation strategy endorsement and financial stress among socioeconomically disadvantaged smokers.

**Design and Methods.** Community service organisation welfare recipients in NSW, Australia completed a touchscreen survey. Smoking history, financial stress, highest price to quit and responses to hypothetical cigarette price increases were assessed.

**Results.** Participants were 354 smokers (response rate = 79%). Most participants received income from a government pension (95%), earned <A$300/week (55%), had not completed secondary schooling (64%), were moderately or heavily nicotine-dependent (60%), reported high financial stress (66%) and spent A$56/week on tobacco. In response to 10% and 20% hypothetical price rises, significantly more participants endorsed trying to quit in response to the larger increase scenario (P < 0.001), and fewer selected no change to their smoking (P < 0.001). Numerous price-minimisation strategies (e.g. switching to cheaper brands/products) were endorsed, but remained constant across hypothetical scenarios; level of financial stress appeared to have little influence. Smokers indicating they would not change their smoking in response to price rises had higher levels of nicotine dependence.
Discussion and Conclusions. Socially disadvantaged smokers endorsed numerous price-minimising strategies to maintain smoking at hypothetically increased costs. Larger cigarette price rises motivated more smokers to consider quitting, while price-resistant smokers appeared to have a more entrenched smoker status.
Tobacco use is the single largest preventable cause of death in the world, is a known risk factor for six of the eight leading causes of death worldwide and accounts for approximately 5 million deaths per year.\(^1, 2\) Population smoking prevalence has significantly declined in Western countries over recent decades to levels between 16% and 20%.\(^1, 3\) However, there exists a social gradient in smoking rates, with an inverse relationship between income level and tobacco use.\(^4\) Factors related to social disadvantage, such as long-term unemployment, low educational attainment and income, belonging to a minority racial group and living in areas of low socioeconomic status (SES), place individuals at higher risk of smoking.\(^5-11\)

Taxation is widely recommended as one of the key policies for a comprehensive tobacco control strategy.\(^12-15\) Typically, tobacco taxation involves applying an excise duty that sets a required amount payable per specified quantity of product; a number of ad valorem taxes may also be applied.\(^16\) In Australia, the retail price of cigarettes includes an excise duty tax of approximately 54.7%\(^17\) and a 9.1% goods and services tax.\(^16\) In Australia in April 2010, tobacco excise duty was raised by 25%, resulting in a real price increase of A$2.20 for a pack of 30 cigarettes. The World Health Organization recommends that excise tax alone should be 70% of the final price of tobacco products.\(^18\)

Smokers may respond to cigarette price increases in a number of ways. Firstly, they may quit smoking, which is the primary aim of the strategy. This response is evident in reduced prevalence rates,\(^19, 20\) as well as in increases in quit
attempts, quit intentions and motivation to quit following price increases.\(^{(21-23)}\)

Increases in tobacco excise taxes that increase product prices can effectively demonstrate a reduction in overall tobacco consumption and prevalence of use by promoting cessation, preventing initiation and lowering consumption.\(^{(19)}\)

Findings from the International Tobacco Control Four-Country Survey (ITC-4) suggest that smokers living in areas with higher cigarette prices and taxes are significantly more motivated to quit\(^{(23)}\) and are also more likely to report quit intentions in response to hypothetical price increases.\(^{(22)}\) In Australia, tobacco tax reforms during the National Tobacco Campaign in the late 1990s resulted in reductions in smoking prevalence, heaviness of smoking, and consumption.\(^{(20)}\)

In 2010 another 25% tobacco tax increase in Australia was found to increase smokers’ cessation cognitions and quit attempts.\(^{(21)}\)

Secondly, smokers participate in what have been termed ‘price-minimising strategies’, which include seeking low-tax/untaxed sources, switching to cheaper brands or products, buying in bulk and reducing consumption. The use of price-minimisation strategies is common. A US study found 74–78% of smokers reported using at least one type of strategy to save money in the previous year,\(^{(24, 25)}\) while analysis of ITC-4 data found that 65% of smokers reported using at least one price-minimising strategy at time of last purchase.\(^{(26)}\)

There is some concern that such strategies may reduce the impact of price increases, as price-minimisation behaviours have been associated with reductions in quit attempts and successful cessation.\(^{(24, 26, 27)}\) Low-SES smokers were more likely to engage in one or more of these price-minimisation behaviours compared with high-SES smokers.\(^{(28)}\)
Finally, smokers may respond to price increases by making no change and continuing to purchase and use cigarettes as before the price increase. This may result in smokers experiencing financial stress: an inability to pay for household essentials and living expenses, such as food, bills and rent, due to a shortage of money.\(^{(29-32)}\) Financial stress can lead to a reduction in the likelihood of making quit attempts\(^{(30, 32)}\) and succeeding in cessation.\(^{(33)}\) Modelling studies suggest the experience of financial stress may moderate the effect of price increases, and predict that as the proportion of low-income smokers experiencing financial stress increases, the impact of increasing cigarette prices will lessen.\(^{(34)}\) Using smoking to cope with stress, or low self-efficacy to quit stemming from a lack of control associated with material deprivation, are suggested mechanisms behind the positive relationship between smoking and financial stress.\(^{(30)}\) Smokers experiencing financial stress may be more likely to maintain smoking behaviour by making no changes or using price-minimising strategies. Further research in this area will help guide equitable and effective tobacco taxation policy development.

It is well established that low-SES smokers are responsive to tobacco price rises.\(^{(19)}\) Less understood is how socially disadvantaged smokers might use price-minimisation strategies to manage future price rises and if the experience of financial stress influences this. Gaining this understanding is important, as it may provide some information as to why socially disadvantaged groups continue to display high rates of smoking and low quitting success rates\(^{(35)}\) in the face of increasing taxation. The main objective of this study is to assess
socioeconomically disadvantaged smokers’ reactions to hypothetical 10% and 20% cigarette pack price rises. Specifically, the study will (i) assess self-reported reactions to hypothetical price rises, as measured by use of price-minimisation strategies, intention to quit and intention to make no changes to smoking behaviour; (ii) examine how financial stress is associated with smokers’ self-reported reactions to the hypothetical price rises; (iii) examine the self-reported price threshold for motivating smokers to quit smoking; and (iv) identify sociodemographic and smoking behaviour characteristics among smokers resistant to change in response to hypothetical price rises.

10.3 Methods

Study Design
A cross-sectional survey administered through a touchscreen computer was conducted between March and December 2012.

Setting & Sample
Strategies for sampling difficult-to-reach groups (socially disadvantaged smokers) were used.\(^{36,37}\) The sample was drawn from a large non-government, social and community service organisation (SCSO) servicing a broad catchment area in south-western Sydney, New South Wales. This area has a population of 145,967 and is among the state’s most disadvantaged.\(^{38}\) The SCSO provides welfare, counselling and financial assistance services to disadvantaged members of the local community. Long-term unemployed, single parents, and Aboriginal and Torres Strait Islanders are over-represented as SCSO service users.\(^{39}\) Eligible participants were clients of the SCSO seeking
emergency relief assistance (i.e. food vouchers, grocery items, financial aid); aged over the age of 18 years; able to read and/or speak English; were not too ill or distressed (as judged by SCSO staff) to participate, and current smokers of cigarettes. Smokers were identified by the survey question ‘Do you currently smoke tobacco products?’ with response options: ‘Yes, daily’; ‘Yes, at least once a week’; ‘Yes, but less often than once a week’ and; ‘No, not at all’, followed by ‘Have you smoked at least 100 cigarettes or a similar amount of tobacco in your life’ (yes/no/not sure). Those who reported smoking daily, or who reported smoking occasionally as well as having smoked 100 cigarettes were classified as current smokers.

**Recruitment and Data Collection**

Staff informed clients about an independent survey taking place within the SCSO when they attended for a regular pre-scheduled appointment. Interested clients were introduced to a research assistant who gained informed consent and provided assistance in completing the survey if required. Participants received a $20 grocery voucher as reimbursement for participation. The study received approval from the University of Newcastle’s Human Research Ethics Committee.

**Survey Instrument**

This survey was part of a larger study investigating perceptions of socially disadvantaged smokers. Only the results from the taxation and pricing items are reported here.
Tobacco use behaviour

Number of cigarettes smoked per day, ever tried to quit, and number of quit attempts in past 12 months were assessed. Nicotine dependence was measured using the heaviness of smoking index which assesses time to first cigarette and number of cigarettes per day.\(^{(40)}\) Smoking-induced deprivation was assessed by asking ‘In the last six months has there been a time when money you spent on cigarettes resulted in not having enough money for household items such as food (Y/N)?\(^{(29)}\) Price impact on current smoking behaviour was assessed by asking “For you personally, how often does the price of cigarettes influence…?” with the following smoking behaviours listed: ‘how much you smoke’; ‘where you buy cigarettes’; ‘the brand you smoke’; and ‘the type of product you smoke (e.g. roll-your-own, tailor-made)’. Items were rated on a 5-pt Likert scale (1-never; 2-sometimes; 3-often; 4-always; 5-unsure). Participants were asked “How much do you spend on average on tobacco each week?”

Price-minimising behaviours

To assess use of price-minimising strategies, participants were presented with two hypothetical scenarios: 1) “If there was a 10% price increase, the average price of a 25-pack of cigarettes would increase by approximately $1.65 per pack. If this happened would you…” and; 2) “If there was a 20% price increase, the average price of a 25-pack of cigarettes would increase by approximately $3.30 per pack. If this happened would you…” Participants tick-box selected as many response options as applied: ‘make no changes to my smoking’; ‘smoke more of each cigarette’; ‘smoke less – cut down the number of cigarettes
smoked per day'; ‘buy a smaller amount of tobacco or cigarettes at a time’; ‘try to quit’; ‘buy lower priced brands’; ‘buy in bulk (e.g. cartons)’; ‘use loose tobacco/roll-your-own’; ‘buy unbranded tobacco, such as chop chop’; and ‘unsure’.

**Highest price to quit**

Smokers selecting ‘make no change’ in response to hypothetical price increases they were asked ‘What price would a pack of 25 cigarettes need to get to for you to stop smoking?’

**Financial stress**

Participants were asked “In the past six months, did any of the following happen to you because of a lack of money (Y/N)?” with the following events listed: ‘could not pay electricity, gas, or telephone bills on time’, ‘could not pay the mortgage or rent on time’, ‘pawned or sold something’, ‘went without meals’, ‘was unable to heat or cool home’, ‘asked for financial help from friends or family’, ‘asked for help from a welfare/community organisation’.(31) A ‘yes’ response to any category was classified as an instance of experiencing financial stress. Participants were also asked ‘Could you raise AUD$2000 in a week if there was an emergency (Y/N)?’ A ‘no’ response was classified as an instance of financial stress. A financial stress index was created to report the number of smokers experiencing no financial stress (zero instances), low financial stress (1 – 4 instances) or high financial stress (5 – 8 instances).
Sociodemographic characteristics

Gender, age, weekly personal income, income source, Indigenous status, marital status, highest level of education and housing type were assessed.

Statistical Analyses

Analyses were conducted using Stata Version 11 (http://www.stata.com). Categorical variables have been reported as percentages and continuous variables reported as means and standard deviations, or medians and quartiles where data were not normally distributed. Proposed use of each price-minimising strategy was compared between the 10% and 20% price increase scenarios using the Stuart Maxwell test for marginal homogeneity. The chi-squared test was undertaken to determine whether the price-minimisation strategy selections differed by level of financial stress, within each of the price increase scenarios.

Chi-squared analyses were undertaken to compare demographic (age, gender, Indigenous status, income, marital status, education, housing, financial stress) and smoking characteristics (tobacco expenditure, previous quit attempts, smoking-induced deprivation, nicotine dependence) of smokers who said they would or would not make changes in response to tobacco price increases. Weekly tobacco expenditure was categorised as ≤$24, $25-$49, $50-$74, ≥$75, and ‘number of quit attempts in previous 12 months’ categorised as zero; one; two – four or ≥five, to provide a more logical framework for interpretation, as we were interested in low, mid-range and high levels of spending and quit attempt behaviour. Backward stepwise logistic regression modelling was then
undertaken with the initial model including all demographic and smoker variables with a p-value of 0.25 or less on bivariate analyses. Variables were removed if they had a p-value of 0.1 or more on the likelihood ratio test to produce a parsimonious model.

**Sample size**

Sample size for this study was determined by requirements for another trial for which participants were recruited. Post hoc power calculations demonstrated that a sample of 350 smokers would allow: estimation of tobacco use behaviours with 95% confidence intervals of ± 5% for binary variables and ± 0.1 standard deviations for continuous variables; detection of differences between groups (participants with low versus high financial stress; and smokers who are and are not resistant to change following price increase) of 15%-20% for binary explanatory factors and 0.3-0.4 standard deviations for continuous explanatory variables, with 80% power and a 5% significance level.

**10.4 Results**

**Sample**

During the survey period a total of 787 clients attended the centre, 738 were approached by SCSO staff, 608 met with the research assistant, and 581 completed the survey (79% consent rate). A total of 362 screened positive as smokers (62%), however a further eight were excluded for primarily smoking a form of tobacco other than tailor-made or roll-your-own cigarettes. The demographic details of the sample (N = 354 smokers) are presented in Table 10.1. The majority of the survey sample were female (61%), aged between 18-
39yrs (58%), had not completed secondary schooling (64%), resided in government housing (52%), received income from a government pension (95%) and earned below the poverty line (55% , <AU$300/week). All participants reported experiencing financial stress, while 66% experienced ‘high’ financial stress.

**Tobacco use behaviour**

On average, participants consumed 16.4 (SD = 11.3) cigarettes per day and reported to spend an average of AU$56.07 (SD=37.34) on tobacco each week. The majority had previously tried to quit (n=295; 83%), reporting an average of 3.3 (SD = 7.7) quit attempts in the past 12 months, and most were moderately (n=153; 43%) or heavily nicotine dependent (n=66; 18%). Most participants reported that the price of cigarettes ‘always’ or ‘often’ influenced how much they smoke (64%), the place of purchase (74%), the brand they smoke (62%), and the type of product they smoke (58%). Smoking-induced deprivation was experienced by 41% (n=145) of participants.
Table 10.1 Demographic characteristics of the 354 study participants.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 – 39</td>
<td>206</td>
<td>58</td>
</tr>
<tr>
<td>≥40</td>
<td>148</td>
<td>42</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
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<tr>
<td>Male</td>
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<tr>
<td>Female</td>
<td>216</td>
<td>61</td>
</tr>
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<td><strong>Aboriginal &amp; Torres Strait Islander status</strong></td>
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<td></td>
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<td>Indigenous</td>
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<td>18</td>
</tr>
<tr>
<td>Non-Indigenous</td>
<td>290</td>
<td>82</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
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<tr>
<td>Married / De facto / living with partner</td>
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<td>25</td>
</tr>
<tr>
<td>Separated / divorced</td>
<td>103</td>
<td>29</td>
</tr>
<tr>
<td>Never married / single / widowed</td>
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<td>46</td>
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<tr>
<td><strong>Highest Education</strong></td>
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<td></td>
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<tr>
<td>Primary school</td>
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</tr>
<tr>
<td>High school years 7-10</td>
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<td>61</td>
</tr>
<tr>
<td>High school years 11-12</td>
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<td>14</td>
</tr>
<tr>
<td>TAFE / trade qualification</td>
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<td>18</td>
</tr>
<tr>
<td>University degree</td>
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<tr>
<td><strong>Personal Weekly Income</strong></td>
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<td></td>
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<tr>
<td>≤$299</td>
<td>195</td>
<td>55</td>
</tr>
<tr>
<td>≥$300</td>
<td>137</td>
<td>39</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>22</td>
<td>6.2</td>
</tr>
<tr>
<td><strong>Income source</strong></td>
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<td></td>
</tr>
<tr>
<td>Paid work</td>
<td>13</td>
<td>3.7</td>
</tr>
<tr>
<td>Centrelink (Government pension)</td>
<td>335</td>
<td>95</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>1.7</td>
</tr>
<tr>
<td><strong>Housing type</strong></td>
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<td></td>
</tr>
<tr>
<td>Own house / private rental</td>
<td>108</td>
<td>31</td>
</tr>
<tr>
<td>Government rental</td>
<td>184</td>
<td>52</td>
</tr>
<tr>
<td>Homeless or supported accommodation</td>
<td>62</td>
<td>18</td>
</tr>
<tr>
<td><strong>Financial stress</strong></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Low financial stress</td>
<td>121</td>
<td>34</td>
</tr>
<tr>
<td>High financial stress</td>
<td>233</td>
<td>66</td>
</tr>
</tbody>
</table>

TAFE, technical and further education
Responses to hypothetical price rise scenarios

Responses to hypothetical price increases are presented in Table 10.2. The most popular response endorsed in both scenarios was ‘try to quit’, and the number of participants selecting this strategy significantly increased from 40% in the 10% scenario to 50% in the 20% scenario (p < 0.001). Selection of price-minimisation strategies did not vary across the two hypothetical scenarios; the most popular strategies were to ‘buy lower priced brands’ and ‘smoke less’.

Table 10.2 Participant responses to hypothetical cigarette price increase scenarios (n = 354).

<table>
<thead>
<tr>
<th>Strategy</th>
<th>10% price increase n (%)</th>
<th>20% price increase n (%)</th>
<th>Difference p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make no change</td>
<td>96 (27.12)</td>
<td>61 (17.23)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Try to quit</td>
<td>141 (39.83)</td>
<td>177 (50.00)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Price minimisation strategy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buy lower priced brands</td>
<td>106 (29.94)</td>
<td>97 (27.40)</td>
<td>0.241</td>
</tr>
<tr>
<td>Smoke less</td>
<td>106 (29.94)</td>
<td>93 (26.27)</td>
<td>0.118</td>
</tr>
<tr>
<td>Use loose tobacco/RYO</td>
<td>66 (18.64)</td>
<td>61 (17.23)</td>
<td>0.353</td>
</tr>
<tr>
<td>Buy smaller amounts</td>
<td>44 (12.43)</td>
<td>44 (12.43)</td>
<td>1.000</td>
</tr>
<tr>
<td>Buy unbranded tobacco</td>
<td>36 (10.17)</td>
<td>36 (10.17)</td>
<td>1.000</td>
</tr>
<tr>
<td>Buy in bulk</td>
<td>36 (10.17)</td>
<td>29 (8.19)</td>
<td>0.127</td>
</tr>
<tr>
<td>Smoke more of each cigarette</td>
<td>14 (3.95)</td>
<td>16 (4.52)</td>
<td>0.527</td>
</tr>
<tr>
<td>Unsure</td>
<td>31 (8.76)</td>
<td>28 (7.91)</td>
<td>0.578</td>
</tr>
</tbody>
</table>

*Response options for hypothetical scenarios were not mutually exclusive. The p-value reported refers to the Stuart-Maxwell test statistic from marginal homogeneity analysis. RYO, roll-your-own.

Financial stress and hypothetical price rise responses

Participants experiencing high financial stress were more likely to be unsure about what they intended to do for a hypothetical 10% price rise (12%) relative to those with low financial stress (3%), and more likely to endorse purchasing lower priced brands if there was a 20% increase in cigarette price (31% vs. 21% for high vs. low financial stress participants). There were no other differences in
response strategies for either the 10% or 20% price increase scenarios by financial stress (Table 10.3).

**Highest price to quit**

Participants selecting ‘make no change’ in response to either 10% or 20% price rise hypotheticals (N = 99) were asked what price a 25-pack of cigarettes would need to reach before they would quit smoking. The median price reported was AU$25; and AU$20 at the first quartile and AU$50 at the third quartile. The price nominated did not differ by experience of low versus high financial stress on the Kruskal-Wallis test \(H = 0.379, 1\) d.f., \(p = 0.538\).

**Characteristics of smokers resistant to change**

The final model of the logistic regression comparing demographic and smoking characteristics for participants who said they would ‘make no change’ compared to those who selected a strategy for change in response to the hypothetical price increase scenarios is presented in Table 10.4. Participants who had higher levels of nicotine dependence, spent significantly higher amounts of money on tobacco each week, made significantly fewer serious quit attempts in the past 12 months, were male, and those whose highest education level was a TAFE diploma or trade qualification had higher odds of selecting ‘make no change’ in response to price increase hypothetical scenarios.
Table 10.3 Comparison of response strategy among each of the hypothetical price increase scenarios based on level of financial stress (n = 354).

<table>
<thead>
<tr>
<th>Strategy</th>
<th>10% price rise</th>
<th>20% price rise</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low FS n(%)</td>
<td>High FS n(%)</td>
</tr>
<tr>
<td>Make no change</td>
<td>37 (31)</td>
<td>59 (25)</td>
</tr>
<tr>
<td>Try to quit</td>
<td>51 (42)</td>
<td>90 (39)</td>
</tr>
<tr>
<td>Price-minimisation strategy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buy lower priced brands</td>
<td>29 (24)</td>
<td>77 (33)</td>
</tr>
<tr>
<td>Smoke less</td>
<td>35 (29)</td>
<td>71 (31)</td>
</tr>
<tr>
<td>Use loose tobacco/RYO</td>
<td>16 (13)</td>
<td>50 (22)</td>
</tr>
<tr>
<td>Buy smaller amounts</td>
<td>15 (12)</td>
<td>29 (13)</td>
</tr>
<tr>
<td>Buy unbranded tobacco</td>
<td>10 (8)</td>
<td>26 (11)</td>
</tr>
<tr>
<td>Buy in bulk</td>
<td>10 (8)</td>
<td>26 (11)</td>
</tr>
<tr>
<td>Smoke more of each cigarette</td>
<td>3 (3)</td>
<td>11 (5)</td>
</tr>
<tr>
<td>Unsure</td>
<td>4 (3)</td>
<td>27 (12)</td>
</tr>
</tbody>
</table>

* Response options for hypothetical scenarios were not mutually exclusive. FS, financial stress; RYO, roll-your-own.
Table 10.4 Factors associated with smokers selecting to ‘make no change’ in response to hypothetical price rise scenarios.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No Change N=99</th>
<th>Change N=255</th>
<th>χ² test p-value</th>
<th>Logistic Regression (Final Model)</th>
<th>Likelihood Ratio Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=99 (28%)</td>
<td>N=255 (72%)</td>
<td></td>
<td>Odds Ratio 95% CI p-value</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 – 39</td>
<td>51 (25)</td>
<td>155 (75)</td>
<td>0.113</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40+</td>
<td>48 (32)</td>
<td>100 (68)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>50 (36)</td>
<td>88 (64)</td>
<td>0.006</td>
<td>ref</td>
<td>0.010</td>
</tr>
<tr>
<td>Female</td>
<td>49 (23)</td>
<td>167 (77)</td>
<td>0.51</td>
<td>0.30 - 0.85</td>
<td>0.010</td>
</tr>
<tr>
<td>Indigenous status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indigenous</td>
<td>13 (20)</td>
<td>51 (80)</td>
<td>0.132</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Indigenous</td>
<td>86 (30)</td>
<td>204 (70)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/De facto</td>
<td>25 (29)</td>
<td>62 (71)</td>
<td>0.600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separated or divorced</td>
<td>25 (24)</td>
<td>78 (76)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never married /single/widow</td>
<td>49 (30)</td>
<td>115 (70)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary or High School 7-10</td>
<td>56 (25)</td>
<td>170 (75)</td>
<td>0.035</td>
<td>ref</td>
<td>0.022</td>
</tr>
<tr>
<td>High School 11-12</td>
<td>14 (28)</td>
<td>37 (73)</td>
<td>1.40</td>
<td>0.66 – 2.96</td>
<td>0.382</td>
</tr>
<tr>
<td>TAFE or Trade qualification</td>
<td>27 (42)</td>
<td>37 (58)</td>
<td>2.60</td>
<td>1.37 – 4.94</td>
<td>0.003</td>
</tr>
<tr>
<td>University</td>
<td>2 (15)</td>
<td>11 (85)</td>
<td>0.59</td>
<td>0.12 – 2.88</td>
<td>0.516</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤$299</td>
<td>61 (31)</td>
<td>134 (69)</td>
<td>0.249</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥$300</td>
<td>34 (25)</td>
<td>103 (75)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>4 (18)</td>
<td>18 (82)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own house/private rental</td>
<td>33 (33)</td>
<td>75 (29)</td>
<td>0.767</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government housing</td>
<td>49 (50)</td>
<td>135 (53)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Homeless</td>
<td>17 (17)</td>
<td>45 (18)</td>
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</table>
### Table 10.4 continued

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No Change</th>
<th>Change</th>
<th>( \chi^2 ) test p-value</th>
<th>Odds Ratio</th>
<th>95% CI p-value</th>
<th>Likelihood Ratio Test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial stress</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>38 (38)</td>
<td>83 (33)</td>
<td>0.299</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>61 (62)</td>
<td>172 (68)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Heaviness of Smoking Index</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>23 (23)</td>
<td>112 (44)</td>
<td>0.001</td>
<td>ref</td>
<td>1.30 – 4.88</td>
<td>0.006</td>
</tr>
<tr>
<td>Moderate</td>
<td>49 (50)</td>
<td>104 (41)</td>
<td></td>
<td>2.52</td>
<td>1.39 – 6.98</td>
<td>0.006</td>
</tr>
<tr>
<td>High</td>
<td>27 (27)</td>
<td>39 (15)</td>
<td></td>
<td>3.12</td>
<td>1.39 – 6.98</td>
<td>0.006</td>
</tr>
<tr>
<td><strong>Smoking-induced deprivation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>47 (48)</td>
<td>98 (38)</td>
<td>0.120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>52 (53)</td>
<td>157 (62)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Weekly Tobacco Expenditure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \leq $24 )</td>
<td>13 (13)</td>
<td>50 (20)</td>
<td>0.006</td>
<td>ref</td>
<td>1.30 – 4.88</td>
<td>0.006</td>
</tr>
<tr>
<td>$25 - $49</td>
<td>34 (34)</td>
<td>63 (25)</td>
<td></td>
<td>2.11</td>
<td>0.95 – 4.69</td>
<td>0.068</td>
</tr>
<tr>
<td>$50 - $74</td>
<td>20 (20)</td>
<td>88 (35)</td>
<td></td>
<td>0.54</td>
<td>0.23 – 1.29</td>
<td>0.168</td>
</tr>
<tr>
<td>( \geq $75 )</td>
<td>32 (32)</td>
<td>54 (21)</td>
<td></td>
<td>1.21</td>
<td>0.51 – 2.90</td>
<td>0.664</td>
</tr>
<tr>
<td><strong>Ever made a quit attempt</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>81 (82)</td>
<td>214 (84)</td>
<td>0.634</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>18 (18)</td>
<td>41 (16)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Quit attempts in past 12 mths</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>49 (50)</td>
<td>76 (30)</td>
<td>0.002</td>
<td>ref</td>
<td>1.30 – 4.88</td>
<td>0.006</td>
</tr>
<tr>
<td>1</td>
<td>15 (15)</td>
<td>41 (16)</td>
<td></td>
<td>0.87</td>
<td>0.41 – 1.85</td>
<td>0.714</td>
</tr>
<tr>
<td>2 – 4</td>
<td>28 (28)</td>
<td>92 (36)</td>
<td></td>
<td>0.59</td>
<td>0.32 – 1.07</td>
<td>0.080</td>
</tr>
<tr>
<td>( \geq 5 )</td>
<td>7 (7)</td>
<td>46 (18)</td>
<td></td>
<td>0.29</td>
<td>0.11 – 0.72</td>
<td>0.008</td>
</tr>
</tbody>
</table>

\(^a\) Percentage totals may not add to 100 due to rounding.  
\(^b\) Results of the likelihood ratio test are presented for all variables entered into the initial logistic regression model. CI, confidence interval; TAFE, technical and further education.
10.5 Discussion

The study found that although socially disadvantaged smokers are influenced by cigarette price and are interested in quitting, they also make use of price-minimisation strategies. Strategies commonly endorsed during price rise hypotheticals included switching to cheaper brands and reducing consumption. The study found that larger price increases were most likely to encourage more smokers to consider quitting. Despite this, there appears to be a large proportion of smokers who are resistant to price changes, with a possible reason for this being their high nicotine addiction.

Socially disadvantaged smokers endorse use of numerous price-minimisation strategies to manage the current and hypothetically increased cost of cigarettes, consistent with general population findings.\(^{24, 28}\) There is concern that use of price-minimisation strategies may decrease public health benefits of cigarette tax increases.\(^{24, 26}\) In this study, strategy selection was consistent across price rise scenarios, however not all strategies were endorsed equally. Reducing consumption and switching to cheaper brands were preferred. Evidence suggests it is the magnitude of a price increase that is the most important predictor of quit intentions.\(^{22, 23}\) In the current study, larger hypothetical price increases resulted in significantly fewer smokers choosing to make no change, and more endorsing quit attempts. Larger tobacco tax increases that reduce product affordability, and limit the ability of smokers to adapt using price-minimisation strategies should be explored in simulation studies.
Level of financial stress appeared to have little influence on selection of price-minimisation strategies. Smokers experiencing high compared to low financial stress expressed more uncertainty about responses to smaller price rises, and preferred to adapt to larger increases by switching to cheaper brands, however no other differences were observed. The entire sample experienced some financial stress and this may have led to a ceiling effect; price already influences current purchasing behaviour, therefore most available strategies are likely to be endorsed to manage future prices. Alternatively, financial stress may operate on an unconscious level, more likely to impact on perceptions of current behaviour, rather than on predictions of future behaviour. Disadvantaged smokers are known to have reduced temporal horizons and higher impulsivity,\(^{(41, 42)}\) indicating they may be unable to accurately plan long-term, financially strained smoking behaviour.

Price-resistant smokers nominated AUD$25 for a 25-pack of cigarettes as the price to motivate quitting – a figure AUD$10 higher than the average price in Australia at the time of survey. This is consistent with recent research assessing price points for quit intentions among Australian smokers, which found 80 cents per stick was a critical price point, while AUD$1 was threshold.\(^{(43)}\) Tax increases large enough to see a 25-pack of cigarettes in Australia cost ≥AUD$20 would prompt over 60% of smokers who are able to nominate a price-to-quit, to seriously consider quitting smoking, and would be particularly effective among low-SES smokers.\(^{(43)}\) The Australian Government recently announced plans to increase tobacco taxes. This should be closely monitored by future research.
Price-resistant smokers in this study had a more entrenched smoker status. These smokers had higher levels of nicotine dependence, smoked more cigarettes per day, spent more money on tobacco each week and made fewer serious quit attempts in the past 12 months than price-responsive smokers. These smokers may find it more difficult to quit, and require comprehensive nicotine dependence treatment concurrently with price rises. Additional research is needed to measure unintended consequences of tobacco price rises such as impact on the limited resources funding basic living requirements among smokers already facing significant socioeconomic disadvantage.

**Strengths and weaknesses**

The use of a cross-sectional design with a convenience sample drawn from a single site is the primary weakness of this study, limiting external validity and ability to generalise beyond the sample. However, the large sample of hard-to-reach, highly addicted and disadvantaged smokers is a study strength, providing unique and relevant information for tobacco control policy development.\(^{(36, 37)}\) The current sample included a large representation of Indigenous, low income and low education smokers living in government housing and obtaining welfare crisis aid. Few tobacco control studies have been conducted with equivalent samples. A second weakness of the study is the use of stated preferences for hypothetical scenarios, as we can only estimate pre-defined anticipated and not actual behaviours.
Conclusions

The results of this research suggest that socially disadvantaged smokers are managing the cost of tobacco through the use of numerous price-minimisation strategies. Financial stress appeared to have little impact on responses to hypothetical price rises, however further research is needed to confirm this finding. Although there is clear interest and intent to quit among these smokers, it appears that the stronger the level of addiction, the less likely an individual is to quit smoking, given a specific price increase. Larger tobacco price increases may be more effective than regular small increments to gain the most impact among disadvantaged smokers. Socially disadvantaged smokers may require additional dependence treatment to help them quit during price increases, in order to maximise quit success and minimise negative consequences in other areas of their financial situation.
10.6 References


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the first cigarette of the day and number of cigarettes smoked per day. British Journal of Addiction. 1989;84:791-800.


11. Introduction to Paper Six

The experimental study presented in Paper Five found the smoking behaviour of socioeconomically disadvantaged smokers is heavily influenced by price. These smokers reported interest in quitting and made use of numerous price-minimisation strategies. However, the smoking behaviour of a large proportion of more heavily addicted smokers appeared to be resistant to price influences. Paper Six employed qualitative interviews with a sub-sample of participants from the study presented in Paper Five to provide more detailed information about the influence of price on their smoking behaviours. Paper Six explores how smokers engage price-minimisation strategies in practice, and the perceived impact smoking maintenance has on material deprivation, financial stress and cessation cognitions.
12. “Cigarettes are priority”: A qualitative study of how Australian socioeconomically disadvantaged smokers respond to rising cigarette prices. (PAPER SIX)

Ashleigh Guillaumier¹, Billie Bonevski¹, Christine Paul¹

¹School of Medicine and Public Health, University of Newcastle, Australia

Citation: Guillaumier A, Bonevski B, Paul C. “Cigarettes are priority”: A qualitative study of how Australian socioeconomically disadvantaged smokers respond to rising cigarette prices. Under Editorial Review

Associated appendices:
17. Appendix D: Interview materials
   17.1 – Ethics approval: interviews
   17.2 – Information Statement
   17.3 – Consent Form
   17.4 – Interview Schedule
12.1 Abstract

**Purpose:** Despite substantial modelling research assessing the impact of cigarette taxes on smoking rates among various income groups, there are few studies that examine the broader financial effects of tobacco prices on smokers in the lowest income groups. This study aimed to explore how very disadvantaged smokers manage smoking costs on limited budgets, and the impact this has on material deprivation, financial stress and cessation cognitions.

**Methods:** Qualitative semi-structured interviews were conducted with 20 smokers recruited from a Social and Community Service Organisation providing crisis welfare assistance to disadvantaged people in New South Wales, Australia. Interviews explored the perceived impact of tobacco costs among socially disadvantaged smokers, including the effects on essential household expenditure, smoking behaviour and quit cognitions. Interviews were audio-taped, transcribed verbatim and analysed using thematic framework analysis.

**Results:** Instances of smoking-induced deprivation and financial stress, such as going without meals, substituting food choices, and struggling to pay bills in order to purchase cigarettes were routine experiences among socially disadvantaged smokers and their community. Price-minimisation methods were used as strategies to maintain smoking, and not as long-term behaviours to save money. Participants reported tobacco price increases were good for preventing uptake, and that larger price rises and subsidised cessation aids were needed to help them sustain abstinence.

**Conclusions:** Socioeconomically disadvantaged smokers engage in behaviours that exacerbate deprivation to maintain smoking, despite the cost.
Tobacco taxation policy should consider impact on the financial and material well-being of socioeconomically disadvantaged smokers who may find it difficult to quit unassisted.
12.2 Introduction

Economic modelling studies suggest taxation may be particularly effective in reducing tobacco use among socioeconomically disadvantaged smokers who have among the highest smoking rates and appear to be the most price sensitive.\(^1\) However despite substantial price rises in many countries, there remains a social gradient with an inverse relationship between income level and tobacco use\(^2\) and few studies have assessed the wider and unintended consequences of tobacco costs on highly disadvantaged smokers, particularly in a qualitative context.

Price-minimisation strategies can be used to maintain and manage the rising cost of smoking. Strategies include switching to cheaper brands, products, or sources of tobacco or purchasing in bulk.\(^3\) Smokers who engage in the use of price-minimisation strategies are less likely to make quit attempts or to successfully quit.\(^3\) Additionally, socioeconomically disadvantaged smokers are more likely to engage in one or more price-minimisation strategies.\(^4\) In tightly regulated markets such as Australia’s, opportunities for purchasing low/untaxed tobacco are limited and buying in bulk attracts few discounts. It is unlikely that use of these traditional price-minimisation strategies alone is enough to manage the rising cost of smoking among highly disadvantaged smokers living at or below the poverty line.

Price increases may disproportionally burden low-income smokers in other unintended ways. Low-income smokers\(^5\) and low socioeconomic status (SES) households\(^6\) spend significantly more of their household funds on tobacco than
their more advantaged counterparts. In general, smokers are more likely to have lower levels of material well-being compared to those who have quit successfully, and smoker-households are less likely to spend money on restaurant food and health insurance. This is likely to be worse among socially disadvantaged smokers who are more likely to experience smoking-induced deprivation, spending income on tobacco in place of household essentials like food. Substantial evidence suggests that socioeconomically disadvantaged smokers experience higher levels of financial stress, which inhibits cessation attempts and success.

Although tobacco tax is considered the most effective way to reduce smoking rates, there is little research on the effects of higher prices on the material hardship experienced by low SES smokers who may find it difficult to quit smoking. Behavioural economic theories such as the “imperfectly rational addiction model” suggest not all smokers would intend to quit, even at very high tobacco prices. Consistent with this model, low-income smokers are more likely than high-income smokers to have shorter planning horizons, and low SES smokers tend to be more present-oriented and impulsive (inability to delay gratification) than high SES smokers. These factors may help explain why financially stressed smokers experiencing material deprivation and hardship find it harder to achieve cessation and continue smoking despite tobacco price increases, however further research is needed.

While substantial research supports increasing tobacco taxes to achieve cessation among low SES groups, few have explored the resulting experience
of deprivation and financial stress among those who maintain smoking. Highly disadvantaged groups face significant tobacco-related health and welfare inequalities, and there is a need to understand the strategies these groups use to maintain smoking in order to develop socially responsible policy. The aim of this project was to gain a fuller understanding of how smokers who experience multiple and high levels of social and financial disadvantage conceptualise, manage and respond to the increasing costs of smoking. Of particular interest were the perceived effects of rising tobacco costs on essential household expenditures, smoking behaviour and quit cognitions.

12.3 Methods

Design
In-depth, semi-structured face-to-face interviews and a brief exit survey were conducted with clients of a social and community service organisation (SCSO) who were current smokers. Data was collected in November and December 2012. University of Newcastle Human Research Ethics Committee approved this study.

Setting
The SCSO is a large, non-government, not-for-profit organisation providing welfare and financial aid assistance services to disadvantaged members of the local community. Socially disadvantaged groups such as the long-term unemployed, people with a mental illness, the homeless and Aboriginal and Torres Strait Islanders are over-represented as SCSO service users. (17)
Sample

Purposive sampling strategy was used to recruit highly socially disadvantaged smokers. A convenience sample was recruited via a registry of participant contact details from individuals who had participated in a quantitative survey conducted by the research team at the same SCSO site. Participants were attending the service for an Emergency Relief appointment (provision of financial and food aid), aged over 18 years, able to speak and comprehend English and were identified as current smokers during a quantitative survey about the price of tobacco.

Procedure

A random number generator was used to list participant contact details in a random order. Working sequentially through the list, the research assistant (RA) made telephone contact with potential participants and invited them to participate in an interview on their perceptions of the price of cigarettes. The study was conducted onsite in a private room at the SCSO. The RA conducted the interviews. One author (AG) co-facilitated the first two interviews, and then reviewed subsequent interview audio to provide on-going feedback to the RA. Interviewing continued until saturation of themes was reached. Interviews were audio-taped and lasted an average of 30 minutes. Participants completed a brief exit survey at the end of the interview. All participants were offered the opportunity to review or remove comments from the audio. Participants received AUD$50 grocery voucher as reimbursement.

Measures
The interview schedule was developed with consideration of available literature and guided by monitoring of the quantitative survey results. Interviews began with questions about participants’ current tobacco use and expenditure, where tobacco fits within personal budgets, and how tobacco costs impact on smoking behaviour and household spending. A brief exit survey assessed: gender, age, Indigenous status, income, income source, marital status, education and housing.

**Analysis**

Interviews were recorded and transcribed verbatim and checked for correctness by one author (AG). Data were analysed using thematic analysis by one author (AG) using NVivo version 10. To establish inter-rater reliability an independent researcher separately coded 25% of transcripts, and identified themes were compared and reconciled where necessary. Braun and Clarke’s\(^{(18)}\) approach to thematic analysis was used, following a realist paradigm, considering meanings across the entire dataset and identifying semantic themes. Quotes are presented to illustrate key themes; identifiers are gender and age.

**12.4 Results**

**Sample**

In total, 57 people were called; 20 were unreachable, and six had an inactive telephone number. Of the 31 who could be contacted, six declined to participate and 25 scheduled an interview. Twenty interviews were successfully completed (65% response rate). Table 12.1 presents the demographic details of the 20 current smokers who participated.
Table 12.1 Demographic characteristics of the study participants (N=20).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
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<td><strong>Age</strong></td>
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<td>≥40</td>
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<tr>
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<tr>
<td>High school years 11-12</td>
<td>3</td>
<td>15</td>
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<td>55</td>
</tr>
<tr>
<td>Homeless or supported accommodation</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

TAFE, technical and further education
**Tobacco use behaviour**

About two-thirds of the sample reported smoking ≥20 cigarettes per day. The price of cigarettes was the dominant factor for purchasing decisions. Participants reported selecting cigarette brand based on the least expensive pack available, and purchased tobacco either from the supermarket or a tobacconist as they were cheapest. Most said they purchased tobacco as they needed it. When asked about their tobacco expenditure, 45% of participants reported spending between AUD$50-$80/week, while a further 35% spent between AUD$81-$150. Most estimated their tobacco expenditure was 25%-35% of their total personal income. Half of the sample reported never having considered the amount of money they spent on tobacco relative to their income.

**Limited financial planning horizons**

Participants exhibited limited understanding of formal budgeting and financial planning; most paid for expenses as they arose. Rent, bills, groceries and cigarettes were the most common expenses reported by participants. Putting money aside for savings was not seen as possible “There’s no way for me to save money… I don’t have any extra money to save” (F27), and many expressed poor impulse control with their money “I get paid on a Monday then every Monday I’ll give my grandparents money to hold for me until the Friday so it’s not sitting in my wallet so we’ve got money for the weekend” (F29). An automatic direct debiting system was mentioned by most participants as something they used to ensure their rent and bills were paid, with the remaining money used to cover day-to-day living expenses “Everything’s coming out like bills, my rent, my bills. Everything comes out automatically so then what I’m left
with is my food, like kids’ stuff, like school excursions, cigarettes. They’re the only things that I have left to pay for once all my bills are paid…” (F27). Half the sample reported covering essential household expenses before purchasing cigarettes “…we go buy the food we need, see what money we’ve got at the end and then buy what smokes we can” (F33). The other half admitted cigarettes were the first thing they bought after getting paid “Normally buy me smokes then do my groceries” (M35). Many spoke of other ways they could manage if money was tight by cutting down “…I mean sometimes I smoke less because…I’ve got to buy, yeah other stuff so other bills have come in” (M49), or relying on others “we’ve got family that all smoke too, so, you know…” (F33).

**Price-minimisation strategies**

Participants discussed numerous price-minimisation strategies used to manage the cost of smoking. Most had switched to cheaper cigarette brands in the past; however this strategy was no longer feasible “because mine’s pretty much the cheapest there is” (F27). Switching from tailor-made cigarettes to roll-your-own tobacco was mentioned by most smokers, however it was a quick-fix when money was tight, rather than a permanent change “Yeah I’m smoking rollies this week and it does work out a lot cheaper…couldn’t do it permanently though” (F29). Sharing, swapping, trading or borrowing cigarettes was common within the smokers’ community “… we all smoke, we all share smokes too, if one hasn’t got one, give me a smoke. There’s one mother tells me, I owe you a packet, then she hit me up the other day, I gave her a handful, she goes I don’t want a handful, I only want one, I said take a handful, I’ll be hitting you up by the end of the week anyway” (F33). Reducing the number of cigarettes smoked per
day by “smoking half cigarettes instead of full ones” (F21) or increasing the time between each cigarette were cited as ways to make cigarettes last longer and save money, however some were uncertain this was a long-lasting change “I try that all the time, it doesn’t really happen” (F29).

Illicit tobacco

Awareness of illicit tobacco was high and most had tried it in the past. However, it was not considered a regular option as many disliked the taste and worried about the tobacco quality and health risks. This was true of black market cigarettes “It’s a lucky dip with them, I mean you don’t know what flavour, what brand you’re getting, what percentage of nicotine” (M47), and chop chop “…anybody can add anything to that and you wouldn’t know what’s in it” (F29). Collecting cigarette butts off the street was reported by three smokers as something they had seen others do “…you’ll see them going and taking butts from the cigarettes and then, oh, you’d just want to do without…” (F33).

Overall, it appeared that the use of price-minimisation strategies was a way to stretch out tobacco when money was tight, usually at the end of a pay cycle, rather than permanent changes to smoking behaviour. “I did try and cut down and I have changed my brands. I find I cut down for a little bit but then I just go back to my normal smoking routine” (F41).
**Impact of continued smoking**

**Prioritisation of cigarettes**

Sacrificing essential household spending to maintain smoking behaviour was common. Many smokers were forthcoming about prioritising cigarettes: “I'll sacrifice other stuff before I’ll sacrifice my smokes” (M47) and “I’d put no matter what to get them cigarettes. Cigarettes are priority” (M48). However, others were adamant they did not compromise essential spending for smoking “Most will give up other things I think…For me I’ll cut back or cut out. But that’s just for me” (F65), but could see it happening in their community “They’ve [neighbours] stopped their normal routine that they used to have, weekly shopping and going out and getting the things they want, petrol, things like that, cigarettes have taken over their budget” (F27).

**Increasing cigarette expenditure awareness**

Most lacked awareness of where the extra money to pay for increasing tobacco costs came from, simply adapting to higher prices “…when we can’t afford it so much, that’s when we have to just cut down and we found that, well then, when we can afford it, we just slowly, sort of, starts creeping back up again” (F33). There was a sense given that for those who intended to continue smoking despite rising costs, it didn’t matter where the money came from “To be honest I’d probably pay that extra…So just say my budget’s $77 [for cigarettes/week] if it was an extra $10 I would pay the $87 or the $97” (M47).
Smoking-induced deprivation and financial stress

Although participants struggled to quantify how they afforded rising tobacco costs, they could identify specific situations in the past where they had reduced essential spending to continue smoking. Falling behind in bill payments was discussed by some “…you get to the point where you’re like, ‘OK, I’ve got $20 left, I can either put that on the electricity…or I can go and buy a packet of cigarettes.’… The way that you’re feeling, you’re thinking ‘I’d rather go buy the packet of cigarettes. I’ll put the $20 on it next week’” (F33), however the most divisive and common source of sacrifice was food. Some were clear that while it does happen in others, they would not sacrifice food “Yes friends of mine will not get their groceries so they can get their smokes…they get behind in their bills. I mean I’ve been behind in my bills before, bills but not food. We refuse to…” (F31). Substituting planned meal choices for cheaper alternatives was common, while some reported to go without meals completely “I starve myself three to four days a week…and so is me missus…we won’t put it on the table and not buy our smokes. We’ll always buy our smokes” (M48). Often the stress of not having enough money led to sacrificing household essentials for cigarettes “Sometimes I’ve been in a situation where it’s like should I buy meals or buy smokes…Whatever way like obviously if you’ve got no money and you’ve got no milk you’re stressing out, so I buy smokes” (M30).

Sacrifice of material wellbeing

Three smokers admitted to cutting out leisure activities with their children due to smoking costs, justifying this as non-essential spending “Not that they missed out on clothes or food or anything like that but they do miss out on the outings if
we smoke” (F31). Many others reported observing children going without living essentials in their neighbourhoods “you see that all the time, especially in our area where we are...you see kids not eating and parents are smoking” (M49). Other sources of household spending that faced cuts included: petrol “I've left myself no petrol because I bought cigarettes. To the point where I've drove to get cigarettes and ran out of petrol on the way back” (F27); clothing “I probably do without clothing” (F65); and, alcohol. A reliance on food vouchers from community welfare organisations was mentioned “that’s why I’m here, that’s why I come to [SCSO name] because it helps us out with food so then I can buy enough smokes to survive” (M48). Some speculated that rising tobacco costs would lead to smokers ending up “in debt” (F33), “homeless or starving” (F27), or reduced to crime “I've heard people say eventually if they keep putting it up it’s just going to make them steal to get more” (F27).

Price and Quitting

Prevention vs. cessation

The sample was divided on whether increasing tobacco prices would help smokers to quit. Some thought it would encourage people to consider quitting, and would be particularly useful for preventing uptake of smoking among youth “If that’s the only thing that’s going to really help yeah I think it is fair. And it stops a lot of the young ones from taking up smoking too because they can’t afford to smoke. I mean people are going to get cranky at first, myself included, but yeah at the end of the day it’s going to help” (F41). Others thought “if you smoke you smoke, you’re not going to quit just ‘cause of the price” (F33) or that price increases were a routine part of smoking “If they go up people complain
for a couple of weeks, you know I can’t believe that went up so much. But after
a while it becomes routine. Sort of like that’s life, they’re going to go up again”
(F29). Complaints were made that increasing cigarette taxes was “a revenue
grabbing sort of exercise, instead of a quit smoking exercise” and that “the
money that the government gets for tax on cigarettes is nowhere near the
money that they put into fighting people to quit” (M35).

Quit assistance
There was overwhelming agreement that smokers needed more help to quit,
and many believed this responsibility belonged to an external entity. The
affordability of cessation aids such as nicotine replacement therapy (NRT) was
mentioned by a number of smokers “Some of the things that you do buy to stop
smoking are just as costly as cigarettes anyway…A lot of people, they’d say I’d
rather buy a packet of cigarettes than spend that $10 on the gum.” (F35).
Others suggested “outlaw it” (F33), “stop making them” (F29), have “more
health things about it…more things on TV” (M49), or use larger cigarette price
increases “I think it’s moving too slow but the increase, I think it has warned a
lot of people, but it’s not warning enough” (F27).

Forced cessation
Overall, when discussing cigarette prices being used to encourage smoking
cessation, there was a sense of longing for the decision to quit to be taken out
of the individual’s hand “to be honest if they went up to the point where I could
not afford them, like if it was going to cost me $30 for a packet of 40s I’d
probably be grateful…if a pack of 25s cost about $20…would be ridiculous, I
would have no other option but to quit” (F29), or “Around about $35/$40…That would be enough for me. That’s when I’d be seeing my doctor and going either give me something real cheap so I can get off it or I’m going to be sick of this you know I’ll put myself in hospital and stop the cravings…and just detox. I won’t pay that, that is jokeable” (M48).

12.5 Discussion

This study found that socioeconomically disadvantaged smokers reduce essential household spending and use price-minimisation strategies to circumvent the increasing costs of tobacco, which represent substantial proportions of their income. There were conflicting opinions over prices being used to encourage quitting. Reducing costs of cessation aids was suggested as a way to promote cessation, with most agreeing that smokers needed more help to quit.

The use of price-minimisation strategies among this group appeared to be situation specific. Strategies were used when money was tight, but smoking behaviour tended to return to normal at the beginning of the pay cycle. The availability of lower priced tobacco has the potential to diminish the effectiveness of taxation increases at reducing smoking prevalence.\(^{(3, 4, 19)}\) In Australia however, strategies such as seeking low/untaxed sources are not easily available, there are few discounts for bulk purchases, and in this instance brand-switching was limited as participants already purchase the cheapest cigarettes available. Participants reported switching to cheaper roll-your-own tobacco, as a temporary solution, or sharing/trading supplies among smoking
networks. The apparent purpose of using price-minimisation strategies was to preserve the individual’s tobacco supply when money was tight, rather than reducing overall expenditure.

Smokers will reduce essential household spending to maintain smoking, on a budget that is already limited. Many admitted to falling behind on household bills and cutting back on groceries to continue smoking, estimating they were spending at least a quarter of their income on cigarettes. Clothing and family-based leisure activities were considered non-essential spending, often sacrificed for cigarettes. This is supportive of previous financial stress research suggesting that low SES smokers spend higher proportions of their income on tobacco\(^5, 6\) and have poorer material well-being.\(^7\) Many expressed shame over these behaviours, but worried that this was common conduct among their community, and if prices continued to rise this would further marginalise smokers potentially leading to undesirable behaviour.

Many participants expressed a sense of helplessness toward quitting smoking. Disadvantaged smokers are just as interested in quitting and make just as many quit attempts as more advantaged smokers, however they are less successful in sustained cessation.\(^{20}\) Recent research suggests that low SES smokers who exhibit an external locus of control, cognitive impulsiveness and steep delay discounting (strong preference for smaller, immediate rewards over larger delayed rewards) are less likely to remain abstinent following cessation treatment.\(^{21}\) The results of the present study are consistent with an imperfectly rational addiction model\(^{14}\) as smokers expressed: a wish for an external force
to motivate cessation (e.g. larger price increases, stopping cigarette production); an inability to control personal expenditure, and; refraining from purchasing cessation aids due to upfront costs. The cost of NRT has previously been identified as a barrier to cessation among socially disadvantaged smokers.\textsuperscript{(22)} Low SES smokers have reduced temporal horizons (an inability for future or long-term planning) in comparison to more advantaged smokers.\textsuperscript{(15)} This may contribute to instances of sacrificing living essentials to cover tobacco costs seen in this study.

\textit{Implications}

This paper explored the unintended consequences of price rises among socially disadvantaged smokers who are open to quitting, but are known to have less success. The behaviours reported by smokers in this study are likely to compound existing levels of social exclusion and deprivation. Smoking is positively related to the experience of financial hardship, which in turn is associated with unsuccessful cessation; increases to the cost of tobacco may contribute to this cycle. On a broader scale, as previously suggested by Siahpush \textit{et al.},\textsuperscript{(12)} health and social policies should be developed in tandem to relieve circumstances of hardship. More specifically, initiatives such as the promotion and provision of subsidised cessation aids, health warning campaigns and counselling programmes could accompany future price increases to offset the unintended negative consequences of the policy among low SES smokers. Introducing such interventions in the period leading up to and immediately after price increases could serve as a way to target smokers during the period of tobacco and household spending adjustment. More data is needed
on the unintended consequences of tobacco control policies in order to more adequately address the issue of smoking and inequalities.

**Strengths and weaknesses**

The sample is the strength of this study. There is limited research on socially disadvantaged groups living on or below the poverty line, with smoking rates at least twice that of the general population. There is a lack of understanding about the strategies this group uses to maintain smoking in the face of rising costs. This research provides insight into purchasing and budgeting patterns, and cigarette prioritisation of this group. However, these findings cannot be generalised to the experience of the general smoking population as we specifically targeted highly disadvantaged smokers.

**Conclusions**

The study reveals that socioeconomically disadvantaged smokers engage in behaviours that may compound their deprivation by reducing already limited essential household spending in order to maintain smoking as tobacco prices increase. Price-minimisation strategies were used to make cigarettes last longer or to cut costs in the short-term, rather than to save money over time. These smokers are interested in quitting, but put the onus on an external entity to help them quit. Governments should consider providing and promoting effective cessation aids and programs at the time of tobacco price increases to counter the negative consequences of rising costs and support quit attempts.
12.6 References


12. SIAHPUSH M, YONG H-H, REID JL, HAMMOND D. Smokers with financial stress are more likely to want to quit but less likely to try or succeed: Findings from the International Tobacco Control (ITC) Four Country Survey. Addiction. 2009;104:1382-90.


13. Discussion and conclusions
The research described in this thesis used a number of quantitative and qualitative methods to examine the perceived cognitive and behavioural responses of highly socioeconomically disadvantaged smokers toward three prominent tobacco control strategies in Australia: anti-tobacco mass media advertisements, plain packaging and cigarette prices. The final section of this thesis will summarise the main findings of the work and discuss the implications for future research and policy.

13.1 Main Findings

The systematic review of the literature presented in Paper One identified a lack of conclusive evidence regarding the impact of anti-tobacco mass media campaigns on socioeconomically disadvantaged groups. Based on an identified need for more research in the area in Paper One, Paper Two investigated which type of mass media campaign message had the greatest perceived effectiveness among a sample of socioeconomically disadvantaged smokers. Anti-smoking advertisements delivering a ‘why-to-quit’ message, featuring either graphic imagery of negative health effects or highly emotive personal testimonials, were rated higher on measures of acceptance and effectiveness compared with ‘how-to-quit’ advertisements. These findings were confirmed by focus group discussions presented in Paper Three. In addition, the focus group results revealed health warning messages may not be resonating with socioeconomically disadvantaged smokers who hold self-exempting beliefs and misperceptions of smoking health effects, and employ numerous warning avoidance behaviours. Some participants considered themselves desensitised to tobacco health warning messages.
The results of the experimental study presented in Paper Four suggest that Australia’s new plain packaging for cigarettes may be successful in reducing brand appeal and purchase intent compared to branded cigarette packaging among socioeconomically disadvantaged smokers. These results were consistent with previous plain packaging simulation studies conducted with samples more closely representative of the general population,\(^{(1, 2)}\) and provide support for cigarette plain packaging legislation as being an appropriate approach for a range of social groups. Focus group discussions presented in Paper Three also revealed disadvantaged smokers perceived a reduction in the quality and change in taste of cigarettes following the introduction of plain packages. These results demonstrate how branding can distort perceptions about other aspects of products.

Papers Five and Six of this thesis provide new evidence of the wider social and economic impact of the cost of tobacco products on disadvantaged groups. The findings presented in Papers Five and Six indicate that in order to be effective at reducing smoking rates amongst socioeconomically disadvantaged groups, price increases need to be substantial. Small incremental increases tend to be accommodated through changes in other aspects of a household budget consequently leading to further economic deprivation. Smaller price increases are also managed through the use of price minimisation strategies. In addition, some research participants indicated that even despite high prices, they believed they were “addicted” and required additional assistance to help them quit.
13.2 New information this research provides for tobacco control policy

Evaluating the effectiveness of tobacco control programs in order to maximise their use among disadvantaged social groups is a priority. The current (daily and occasional) smoking rate observed among the socioeconomically disadvantaged sample recruited as part of this thesis was 62%, more than three times the Australian adult population smoking prevalence of 19%. As the primary goal of its National Tobacco Strategy, the Australian Government has committed to reducing the national smoking rate to 10% by 2018. In order to achieve this goal, it is pivotal to investigate ways to improve existing tobacco control strategies so that they become proportionately more effective among socioeconomically disadvantaged groups. A crucial aspect of such investigation involves gaining a better understanding of the responses to current tobacco control strategies among disadvantaged smokers.

As Paper One produced no consistent finding of differential effectiveness of mass media campaigns across socioeconomic status, Papers Two and Three investigated which anti-smoking advertisement message type had the greatest impact among socioeconomically disadvantaged smokers. The findings of this thesis support the continuation of a high rotation of ‘why-to-quit’ relative to ‘how-to-quit’ advertisements within the mass media component of the Australian National Tobacco Campaign. Previous research has shown that this message type has the greatest potential to increase positive beliefs, increase knowledge of smoking-related health effects, and motivate smokers toward cessation. Similarly, cigarette pack health warning labels using highly emotive graphic
imagery of the negative health consequences of smoking were identified as being the warning type most likely to grab attention.

Findings from Papers Two and Three indicate that socioeconomically disadvantaged smokers considered ‘how-to-quit’ advertisement messages as significantly less effective and engaging when compared to ‘why-to-quit’ messages. As recent research indicates ‘how-to-quit’ messages are more effective when combined with ‘why-to-quit’ messages than when used alone,\(^6\) systematically embedding ‘how-to-quit’ information within ‘why-to-quit’ messages should be considered and evaluated with socioeconomically disadvantaged smokers. ‘How-to-quit’ warning messages might also be improved in other ways. The systematic literature review presented in Paper One included the US-based “EX campaign”, a series of ‘how-to-quit’ advertisements providing practical advice and coaching for low-income and blue-collar smokers on how to ‘re-learn life without cigarettes’ as producing positive results.\(^7,\,8\) This message format could also be tested as cigarette pack warning labels.

It may be that anti-smoking messages addressing more immediate health concerns, and those presenting practical and specific steps on how to progress towards quitting are required to meet the information needs of disadvantaged smokers. There is some research that suggests that socioeconomically disadvantaged smokers have shortened temporal horizons compared with smokers from more advantaged groups.\(^9\) As a result they are more present-oriented, and the timeframe over which they can consider and plan future
actions and outcomes is reduced. In the past few years of the Australian National Tobacco Campaign, advertisements such as ‘Cough’ (featuring a man coughing blood into his handkerchief) and ‘Breathless’ (featuring a man experiencing difficulty breathing) have addressed more immediate health concerns. As advised in Paper One, evaluations of these campaigns should place a focus on assessing effect among very low socioeconomic status groups.

Anti-smoking messages are typically framed as either positive, gain-framed messages that outline the benefits of quitting, or as negative, loss-framed messages that cover the costs of continued smoking. These gains and losses may refer to either health, financial or social consequences. Australia’s televised anti-smoking campaigns have tended to contain negative emotive content and graphic images.\(^{(10, 11)}\) Although loss-framed messages are more effective over the long-term, gain-framed messages can attract more attention at the time of the message.\(^{(12, 13)}\) Gain-framed messages used in cigarette pack warning labels have also been associated with greater motivation to quit among young smokers aged 18 – 30 years.\(^{(14)}\) The focus group discussions in Paper Three suggested messages delivering a more positive outlook might help provide new perspective on cessation. Future research should explore the potential benefit of capitalising on socioeconomically disadvantaged smokers’ expressions of interest in positive, gain-framed messages that deliver more immediately relatable content.
Previous research has demonstrated various stylistic features such as appeal type, message framing, argument strength and the presence or absence of smoking cues influence the processing of and response to anti-smoking messages.\(^{(5, 15, 16)}\) As perceived effectiveness of advertising was influenced by thoughts of cessation in Paper Two, this is particularly important for socioeconomically disadvantaged smokers who also reported self-exempting beliefs, misperceptions of harm and feelings of desensitisation toward health warning messages in focus group discussions. Avoidance behaviours were also commonly reported in response to both television advertisements (e.g. switching the television channel) and cigarette pack warnings (e.g. not reading warning labels; using alternative storage packs). Avoidance of pack warning labels is not thought to inhibit future cessation behaviour.\(^{(17, 18)}\) However, avoidance behaviours coupled with the misperceptions and beliefs mentioned above may indicate that some health warning and cessation benefit messaging is not resonating with or engaging socioeconomically disadvantaged smokers.

These results suggest a need for more formative research in designing tobacco warning messages that are relevant and relatable to disadvantaged smokers. For example, the general format for Australian cigarette pack health warning labels was designed over a decade ago for mainstream audiences with the purposes of increasing knowledge of health effects, encouraging cessation and discouraging uptake across the whole of population.\(^{(19-21)}\) Although pack warning labels have been successful,\(^{(22)}\) over time inequalities in knowledge of health effects and cessation and uptake rates have emerged. Additionally, as highlighted in Paper One, until recently socioeconomically disadvantaged
smokers have been largely absent from the tobacco control evaluation literature. An approach to Australia’s tobacco control campaigns that prioritises the needs of socioeconomically disadvantaged groups with high smoking rates may be required.

Qualitative research conducted in Papers Three and Six indicated socioeconomically disadvantaged smokers, who could largely benefit from greater cessation information and support, had limited experience with the telephone Quitline service and very little knowledge about what the service itself had to offer. Currently, all Australian mass media campaign materials and cigarette pack health warning labels feature the telephone number for the Australian Quitline. However, engagement with the Quitline service in Australia is low overall, and lower amongst low-SES groups.\(^{(23)}\) Mass media campaigns that are effective in motivating behaviour change are those that include a call to action, and are supported by the concurrent availability of access to key services and products.\(^{(24)}\) New Zealand research found that changes to cigarette pack health warning labels that clearly identified and repeated the Quitline number increased calls across socioeconomic groups.\(^{(25)}\) It appears that greater promotion and explanation of the services provided by the Australian Quitline, could benefit disadvantaged smokers. Future policies might also consider the provision of nicotine replacement therapy to Quitline services as previous research has shown this significantly increases engagement with the service and successful cessation outcomes.\(^{(26)}\) Overall, there appears to be a greater need for research to help better understand the barriers and facilitators to Quitline use amongst socioeconomically disadvantaged smokers.
The findings of Paper Four contribute to the literature supporting plain packaging for tobacco products, demonstrating that plain packaging may reduce product appeal and purchase intentions among socioeconomically disadvantaged groups. This is an important finding for dissemination of the policy globally as disadvantaged smokers are a group targeted by tobacco companies to increase consumer demand and influence social norms.\(^{(27-29)}\)

Furthermore, the qualitative research outlined in Paper Three indicated that smokers perceived changes in the taste of the product following the introduction of plain packs, reporting suspicions that tobacco quality had decreased and all tobacco products had become the same. Together, these findings are important for a number of reasons. Firstly, previous research has shown that products contained in lighter coloured packages were perceived by smokers as less harmful than those contained in darker packaging.\(^{(30)}\) Secondly, smokers from disadvantaged social groups have poorer knowledge of the health-effects of tobacco\(^{(31)}\) and low health literacy levels.\(^{(32)}\) Plain packaging policy may also counter the misconceptions that some cigarettes are milder, safer or pose less health risks. A primary aim of the plain packaging policy was to decrease misperceptions about the harms of tobacco use.\(^{(33)}\) Smokers' perceptions regarding tobacco-related harm should be monitored in the evaluation of the policy over time to track any changes. Finally, as plain packaging largely prevents tobacco companies from using branding to create product distinctions and market segment groups, pricing will become an increasing important strategy for the industry to help distinguish products.
Papers 5 and 6 explored the price of tobacco. The current sample of socioeconomically disadvantaged smokers reported using price-minimisation strategies as well as reductions in essential household spending to cover increasing smoking costs. These results corroborate previous international research, which has found that use of price minimisation strategies is high amongst smokers from lower income and socioeconomically disadvantaged groups. Price-minimisation behaviours are consistent with the “present-oriented” profile of lower socioeconomic groups\(^9\) who react to issues of affordability on an immediate, short term and day-to-day basis instead of planning or budgeting for the future. It is the size of price increases that are one of the most important predictors of cessation as a result of price increases.\(^{34, 35}\) Participants in Paper Six suggested increasing taxes by a magnitude that would immediately price tobacco products out of the limits of day-to-day affordability rather than implementing smaller incremental increases that can be accommodated. Findings from Paper Five and from a study assessing critical price points for Australian smokers\(^{36}\) suggest that if taxes were increased to a level that set the cigarette price to approximately 80 cents – $AUD1 per stick, this may prompt more smokers to consider quitting, and has the potential to be particularly effective among lower SES groups. The Australian Government is imposing a 50% tobacco tax increase on cigarettes. The increase is being introduced in a staged manner involving 12.5% increases each year, between 2013 and 2016. The results presented in this thesis suggest that one single tax increase of the total amount may have been more effective among socioeconomically disadvantaged smokers at limiting their ability to adjust their spending habits. The staged approach may be considered more politically prudent however our
focus group results suggest that some smokers are calling for higher price rises. It will be important to monitor the gradual increases in price over the 2013-2016 period and the responses of socioeconomically disadvantaged smokers.

Paper Five revealed that smokers who intended to maintain their smoking behaviour despite rising prices appeared to have heavy nicotine dependence, large weekly tobacco expenditures, and fewer quit attempts in the past year. Recent Australian research suggests that while more heavily nicotine dependent smokers can successfully quit, it appears to be more difficult to achieve for low-SES compared to high-SES smokers. Encouragingly, the research presented in Paper Two found that nicotine dependence level did not impact perceived effectiveness of anti-smoking advertisement effectiveness, although greater thoughts about quitting were associated with positive ratings of message acceptance and effectiveness. Given socioeconomically disadvantaged smokers experience significant financial stress, which is associated with reduced quit success, increased likelihood of relapse, and heavy nicotine dependence, it is likely that they require targeted and intensive cessation support. The cost of cessation aids, such as nicotine replacement therapy, was repeatedly mentioned as a barrier to quitting in Paper Six. Nicotine patches are subsidised medications on the Australian Pharmaceutical Benefits scheme, and use of patches increased following the introduction of the subsidy. However, it appears an information campaign to raise awareness of the strategy among socioeconomically disadvantaged smokers may be beneficial. Further programs and cessation support that incorporates methods of assisting smokers manage their financial stress may
also be beneficial. Generally, the unique life circumstances of smokers from socioeconomically disadvantaged groups need to be taken into account when designing strategies to help them quit smoking.

13.3 Tobacco control measures and health inequalities: the need for more research

The use of population-level tobacco control interventions to reduce smoking rates in most developed countries is well researched and recommended. However, much less is known about the impact of these strategies on socioeconomic inequalities. It is important that strategies used to reduce population-smoking rates do not inadvertently increase inequalities, unless reasonable efforts are made to assist those ‘left behind’. A number of systematic reviews have been conducted to specifically examine whether tobacco control policies have an impact on health inequalities.\(^{40-44}\) Findings indicate that cigarette pricing policies generally have a pro-equity effect in reducing the smoking gradient. The evidence based on income levels shows that smokers on low incomes are more responsive to price than smokers on high-incomes. The evidence in relation to this effect by education is less clear.\(^{40-42, 44}\) There is some data to suggest that high financial stress may mediate the effect of price rises.\(^{45}\) Other interventions such as mass media campaigns and workplace smoking bans may increase inequalities between SES groups, however the evidence is ambiguous.\(^{40-42}\) Hill et al.\(^{40}\) concluded that apart from increased price via tax, other tobacco control measures are unlikely to reduce inequalities without specific efforts to reach disadvantaged smokers. Overall, the most consistent conclusion across these evidence
reviews\textsuperscript{(40-44)} and expert opinion\textsuperscript{(46, 47)} is that there is a lack of research evaluating equity impacts of tobacco control strategies. Studies on how to improve approaches among disadvantaged groups are needed.

This thesis attempts to address the gap in understanding how population approaches to tobacco control impact on social inequalities. One of the key contributions of the research presented in this thesis is an assessment of tobacco control strategies among groups with the highest smoking rates. In some instances (Papers Three and Four), this is the first research to examine these strategies with socioeconomically disadvantaged smokers. The findings demonstrate the importance of including disadvantaged groups in evaluations of tobacco control efforts, given that reducing the disparity in smoking rates is a priority area. This thesis highlights that while disadvantaged groups may respond to tobacco control efforts in similar ways to the general population, it is essential to take account of the wider social and economic factors that may influence the experience of disadvantage and contribute to the reduced ability of this group to achieve long-lasting cessation. The influence of the wider social context on the uptake and maintenance of smoking, difficulties in quitting, and engagement with tobacco control policy among disadvantaged groups with high smoking rates must be acknowledged, understood, planned for and responded to.\textsuperscript{(48)}

In the context of Australia’s National Tobacco Strategy 2012 – 2018\textsuperscript{(49)}, the findings of the studies contained in this thesis have important policy implications. Strengthening efforts to reduce tobacco use among people in
populations with a high prevalence of smoking is a listed priority area, and as part of the broader framework, will help to build the evidence base for tobacco control and monitoring progress. This thesis has underscored the need to include socioeconomically disadvantaged groups within strategy evaluations, and has demonstrated some of the ways that innovative methodology can be used. The research contained in this thesis also addresses a number of other National Tobacco Strategy priority areas such as strengthening mass media campaigns, continuing to reduce the affordability of tobacco products, and eliminating remaining advertising, promotion and sponsorship of tobacco products. As outlined in the discussion above, the findings of these research studies provide guidance on how strategies can be improved to aid efforts to reduce smoking among disadvantaged groups. For example, mass media campaigns and tobacco health warning labels could be used in a complementary manner to reduce misinformation about the health effects contained in new warning messages. Previous research has found that the use of mass media television campaigns to support the introduction of new pictorial health warnings increases awareness of harms, positive responses and quit intentions.\(^{(50)}\) Mass media campaigns and pack warning labels could also include more practical information on how to quit, as well as the cessation aids available to do so, which is likely to be particularly useful during times of tobacco tax increases.

There are several useful research directions leading from this thesis. Firstly, the findings presented in Papers Five and Six suggest an investigation of the wider social and financial impacts of tobacco control policies such as price increases.
is needed. Future studies might consider assessing demand for services providing crisis welfare aid during the implementation of tobacco taxation increases. In 2013 the Australian Government legislated for four staged 12.5% tobacco tax increases to occur over the period 2013 – 2016. It would be advisable to try and capture the wider social and economic impacts of these tax increases on socioeconomically disadvantaged smokers. This might be achieved by working with peak government and non-government social and welfare agencies to obtain access to observational data including service appointments and provision of assistance. Indirect observational methods such as monitoring the numbers of welfare and social service clients seeking aid before and after the price increases could be used.

Secondly, there was general agreement among participants in the focus groups presented in Paper Three and interviews in Paper Six that tobacco control strategies such as price increases, plain packaging policy and the introduction of larger and novel graphic health warning labels on tobacco products would be more effective in preventing the uptake of smoking among youth, than in motivating cessation in established smokers. Product brand appeal plays a crucial role in the recruitment of new users to a product.\textsuperscript{(30, 51)} The findings presented in Paper Four indicated that plain packaging policy may have the potential to reduce the appeal of tobacco products among disadvantaged adults, and this may extend to adolescents and young adults who are at the age when smoking initiation occurs. Comparisons of smoking prevalence and uptake rates among youth before and after implementation of plain packaging
should include various social and demographic factors as an important aspect of monitoring the impact of this strategy among disadvantaged groups.

Thirdly, future research should also consider the improvement of anti-smoking messages. The findings from this body of work suggest that building the motivation of smokers to quit may improve receptiveness to cessation messages overall. There may be the potential in future Australian campaigns to combine highly emotive messaging elements with more practical ‘how-to-quit’ content to guide smokers on the cessation journey. Future studies could test which elements of ‘how-to-quit’ and ‘why-to-quit’ messages are most effectively combined. Further to this, as socioeconomically disadvantaged smokers have less quit success, the effectiveness of anti-smoking campaign messages at preventing relapse among recent quitters could be tested.

13.4 Overall strengths and weaknesses of the research

A key strength of this research is the recruitment of a sample of highly socioeconomically disadvantaged smokers. Groups experiencing multiple forms of disadvantage are often labelled as ‘hard-to-reach’ in health and medical research.\(^{(52)}\) Tobacco control surveillance studies, as well as other Australian community studies including measures of tobacco use, have typically used household telephone surveys using random digit dialling,\(^{(53-55)}\) and more recently online consumer panel surveys. These studies tend to omit those without a permanent residence, or lacking access to landline phones, mobile phones or the internet. Additionally, Australian community studies including measures of tobacco use often do not include rural and remote Aboriginal
communities and people from non-English speaking backgrounds, and response rates among the unemployed, those working in low-skilled occupations and those with the lowest socioeconomic status tend to be low.\(^{(3, 56)}\)

The samples of highly disadvantaged smokers included in this thesis were recruited through Social and Community Service Organisations which provide a range of financial and material welfare-type assistance services to a large number of disadvantaged groups including those with very low income, Indigenous peoples, the unemployed and those with disabilities and/or mental illness.\(^{(57)}\) The recruitment and assessment of this sample is a major contribution of the research to new knowledge. The findings contained in this thesis provide unique information regarding the impact of tobacco control measures amongst groups with the highest smoking prevalence rates in Australia.

Another overall strength of this research is the use of methodology suited to the needs of the study population. A touchscreen computer survey was administered to conduct experimental trials assessing responses to mass media advertisements, hypothetical price rise scenarios, and cigarette pack images. To avoid sensitisation, the visual-based advertisement and pack image questions were separated by the price estimation and planning tasks, and there was no overlap in health warning message content. Qualitative focus groups and interviews further explored how these groups engage with tobacco control strategies. Previous research demonstrated that clients and staff of Social and Community Service Organisations found the use of touchscreen computer surveys to be acceptable in this setting.\(^{(58)}\) The high consent rates of 65%
(Paper Six) - 79% (Papers Two, Five) obtained for the research presented in this thesis confirms previous research findings\(^{(58, 59)}\) that socially disadvantaged groups are open and interested in participating in research, and suggest that the Social and Community Service Organisation sector is a feasible setting for accessing large and representative samples of socially disadvantaged smokers.

It is also important to note the limitations of this thesis. The use of convenience samples potentially limits the generalizability of the results. Compared to existing evaluations of tobacco control strategies, this thesis was conducted on a relatively smaller scale with clients of Social and Community Service Organisations in New South Wales, Australia. However, the research contained in this thesis is an advance on the existing evaluative literature from which these socioeconomically disadvantaged smokers are usually absent. Additionally, we were unable to assess the relative effectiveness of the selected tobacco control strategies among highly socioeconomically disadvantaged smokers compared with the general population. However, very disadvantaged groups with the highest smoking rates have been largely absent from the tobacco control evaluation literature. Where possible, studies were designed to replicate some of the evaluation work that has been conducted with samples more representative of the general population in order to provide some comparison.

### 13.5 Conclusions

Smoking disparities account for a significant proportion of all health inequalities. Reductions in this behaviour would improve the health and wellbeing of the
population, particularly among vulnerable and disadvantaged groups who currently bear a disproportionate burden of harm. Although a reduction in smoking disparities is increasingly being identified as an important aim of comprehensive tobacco control programs, the challenge of including socially disadvantaged groups in strategy and program evaluation remains. Although disadvantaged smokers appear to be responding to some tobacco control strategies such as mass media campaigns and cigarette plain packaging in a similar fashion to the general population, it is clear that they also face challenges with long-term planning, as levels of deprivation and material wellbeing are affected by on-going tobacco use and increasing tobacco prices. These circumstances add complexity to the task of achieving successful cessation. It is imperative that development, implementation and evaluation of tobacco control interventions consider and plan for impact on socially disadvantaged populations in order to progress toward reducing the social gradient in smoking and the resulting disparities in health.
13.6 References


46. LAWRENCE D, MITROU F, ZUBRICK SR. Global research neglect of population-based approaches to smoking cessation: time for a more rigorous science of population health interventions. Addiction. 2011;106:1549-54.


52. BONEVSKI B, RANDELL M, PAUL C, et al. Reaching the hard-to-reach: a systematic review of strategies for improving health and medical research with
socially disadvantaged groups. BMC Medical Research Methodology. 2014;14:42.


14. APPENDIX A: Systematic literature review materials

14.1 – Review search strategy table

14.2 – Quality assessment tool for quantitative studies

14.3 – Quality assessment tool for quantitative studies dictionary
### 14.1 Review search strategy table

#### Search term combinations used in each database

<table>
<thead>
<tr>
<th><strong>Medline</strong></th>
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<td>8. Smoking cessation.mp</td>
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<td>10. Cigarette*</td>
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<td>12. Socioeconomic factors/</td>
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<td>36. Advertis* or advertiz*</td>
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<td><strong>39. Combine searches: 11, 31, 38 with “AND”</strong></td>
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<td>7. Smoking cessation.mp</td>
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</table>
8. Smoker*
9. Cigarette*
10. Combine search 1 – 9 with “OR”
11. Socioeconomics/
12. Poverty/
13. Minority groups/
14. Vulnerable population/
15. Homelessness/
16. Unemployment/
17. Aborigine/
18. African American/
19. American Indian/
20. Eskimo/
21. Mental patient/
22. Disadvantage*
23. Socioeconomic status.mp
24. Low* class population.mp
25. Lowest income group.mp
26. Inequality*
27. Population at risk.mp
28. Combine search 11 – 27 with “OR”
29. Health communication/
30. Mass media/
31. Social marketing/
32. Marketing/
33. Advertising/
34. ((smok* or anti-smok* or anti smok* or tobacco or anti-tobacco or anti tobacco or cigarette*) adj3 (campaign or adverti*))
35. Combine search 29 – 34 with “OR”
36. Combine searches: 10, 28, 35 with “AND”

COCHRANE LIBRARY
1. Smoking/
2. Tobacco/
3. Smoking cessation/
4. Tobacco use cessation/
5. Tobacco use disorder/
6. Smoking.mp
7. Tobacco.mp
8. Smoking cessation.mp
9. Smoker*
10. Cigarette*
11. Combine search 1 – 10 with “OR”
12. Socioeconomic factors/
13. Poverty/
14. Minority groups/
15. Vulnerable populations/
16. Homeless persons/
17. Unemployment/
18. Oceanic ancestry group/
19. African Americans/
20. Indians, north American/
21. Indians, central American/
22. Inuits/
23. Mentally ill persons/
24. Disadvantage*
25. Socioeconomic status.mp
26. Lower class population.mp
27. Low income population.mp
28. Inequali*
29. Population at risk.mp

30. Combine search 12 – 29 with “OR”
31. Health communication/
32. Mass media/
33. Social marketing/
34. Marketing/
35. Adverti*
36. ((smok* or anti-smok* or anti smok* or tobacco or anti-tobacco or anti tobacco or cigarette*) adj3 (campaign or adverti*))

37. Combine search 31 – 36 with “OR”

38. Combine searches: 11, 30, 37 with “AND”

WEB OF SCIENCE

1. TI=(smoking OR tobacco OR (smoking cessation) OR (tobacco use cessation) OR (tobacco use disorder) OR smoker* OR cigarette*)
2. TI=((Socioeconomic factors) OR (poverty) OR (minority group*) OR (vulnerable population*) OR (homeless persons) OR (unemployment) OR (aborigin*) OR (Indigenous) OR (Maori) OR (Native American*) OR (Black*) OR (Eskimo*) OR (mentally ill person*) OR (disadvantage*) OR (socioeconomic status) OR (low* class population) OR (low* income population) OR (inequalit*) OR (population at risk))
3. TI=((Health communication) OR (mass media) OR (social marketing) OR (marketing) OR (adverti*) OR (smok* OR anti-smok* OR anti smok* OR tobacco OR anti-tobacco OR anti-tobacco OR cigarette*) SAME (campaign OR adverti*))
4. Combine searches 1, 2, 3 with “AND”

PSYCINFO

1. exp Smoking Cessation/ or smoking.mp. or exp Tobacco Smoking/
2. tobacco.mp
3. smoker$.mp
4. cigarette$.mp

5. Combine search 1 – 4 with “OR”
6. exp Socioeconomic Status/ or exp Poverty/ or socioeconomic factors.mp
7. exp Minority Groups/ or exp At Risk Populations/ or vulnerable populations.mp
8. exp Homeless/ or exp Homeless Mentally Ill/ or homeless persons.mp
9. exp Unemployment/
10. exp Indigenous Populations/ or exp "Racial and Ethnic Groups"/ or exp Sociocultural Factors/
11. exp Blacks/
12. exp Alaska Natives/ or exp American Indians/
13. exp Disadvantaged/
14. exp Lower Class/
15. exp Social Equality/

16. Combine search 6 – 15 with “OR”
17. health communication.mp. or exp Mass Media/
18. exp Marketing/ or exp Social Marketing/
19. ((smok$ or anti-smok$ or tobacco or anti-tobacco or cigarette$) adj3 (campaign or advert$ or advertiz$)).mp
20. Combine search 17 – 19 with “OR”

21. Combine searches 5, 16, 20 with “AND”
QUALITY ASSESSMENT TOOL FOR
QUANTITATIVE STUDIES

COMPONENT RATINGS

A) SELECTION BIAS

(Q1) Are the individuals selected to participate in the study likely to be representative of the target population?
1 Very likely
2 Somewhat likely
3 Not likely
4 Can't tell

(Q2) What percentage of selected individuals agreed to participate?
1 80–100% agreement
2 60–79% agreement
3 less than 60% agreement
4 Not applicable
5 Can't tell

B) STUDY DESIGN

Indicate the study design
1 Randomized controlled trial
2 Controlled clinical trial
3 Cohort analytic (two group pre + post)
4 Case-control
5 Cohort (one group pre + post (before and after))
6 Interrupted time series
7 Other specify ____________________________
8 Can't tell

Was the study described as randomized? If NO, go to Component C.

No Yes

If YES, was the method of randomization described? (See dictionary)

No Yes

If YES, was the method appropriate? (See dictionary)

No Yes

RATE THIS SECTION

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<th>STRONG</th>
<th>MODERATE</th>
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<td>See dictionary</td>
<td>1</td>
<td>2</td>
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</table>
C) CONFOUNDERS

(Q1) Were there important differences between groups prior to the intervention?
1 Yes
2 No
3 Can't tell

The following are examples of confounders:
1 Race
2 Sex
3 Marital status/family
4 Age
5 SES (income or class)
6 Education
7 Health status
8 Pre-intervention score on outcome measure

(Q2) If YES, indicate the percentage of relevant confounders that were controlled (either in the design (e.g. stratification, matching) or analysis).
1 80–100% (most)
2 60–79% (some)
3 Less than 60% (few or none)
4 Can't Tell

RATE THIS SECTION STRONG MODERATE WEAK
See dictionary 1 2 3 3

D) BLINDING

(Q1) Was (were) the outcome assessor(s) aware of the intervention or exposure status of participants?
1 Yes
2 No
3 Can't tell

(Q2) Were the study participants aware of the research question?
1 Yes
2 No
3 Can't tell

RATE THIS SECTION STRONG MODERATE WEAK
See dictionary 1 2 3 3

E) DATA COLLECTION METHODS

(Q1) Were data collection tools shown to be valid?
1 Yes
2 No
3 Can't tell

(Q2) Were data collection tools shown to be reliable?
1 Yes
2 No
3 Can't tell

RATE THIS SECTION STRONG MODERATE WEAK
See dictionary 1 2 3 3
F) WITHDRAWALS AND DROP-OUTS

(Q1) Were withdrawals and drop-outs reported in terms of numbers and/or reasons per group?
   1. Yes
   2. No
   3. Can’t tell
   4. Not Applicable (e.g., one time surveys or interviews)

(Q2) Indicate the percentage of participants completing the study. (If the percentage differs by groups, record the lowest).
   1. 80–100%
   2. 60–79%
   3. less than 60%
   4. Can’t tell
   5. Not Applicable (e.g., Retrospective case-control)

G) INTERVENTION INTEGRITY

(Q1) What percentage of participants received the allocated intervention or exposure of interest?
   1. 80–100%
   2. 60–79%
   3. less than 60%
   4. Can’t tell

(Q2) Was the consistency of the intervention measured?
   1. Yes
   2. No
   3. Can’t tell

(Q3) Is it likely that subjects received an unintended intervention (contamination or co-intervention) that may influence the results?
   1. Yes
   2. No
   3. Can’t tell

H) ANALYSES

(Q1) Indicate the unit of allocation (circle one)
   - community
   - organization/institution
   - practice/office
   - individual

(Q2) Indicate the unit of analysis (circle one)
   - community
   - organization/institution
   - practice/office
   - individual

(Q3) Are the statistical methods appropriate for the study design?
   1. Yes
   2. No
   3. Can’t tell

(Q4) Is the analysis performed by intervention allocation status (i.e., intention to treat) rather than the actual intervention received?
   1. Yes
   2. No
   3. Can’t tell
GLOBAL RATING

COMPONENT RATINGS

Please transcribe the information from the gray boxes on pages 1–4 onto this page. See dictionary for how to rate this section.

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GLOBAL RATING FOR THIS PAPER (circle one):

1 STRONG (no WEAK ratings)
2 MODERATE (one WEAK rating)
3 WEAK (two or more WEAK ratings)

With both reviewers discussing the ratings:

Is there a discrepancy between the two reviewers with respect to the component (A-F) ratings?

No Yes

If yes, indicate the reason for the discrepancy

1 Oversight
2 Differences in interpretation of criteria
3 Differences in interpretation of study

Final decision of both reviewers (circle one):

1 STRONG
2 MODERATE
3 WEAK
14.3 Quality assessment tool for quantitative studies dictionary

Quality Assessment Tool for Quantitative Studies Dictionary

The purpose of this dictionary is to describe items in the tool thereby assisting raters to score study quality. Due to under-reporting or lack of clarity in the primary study, raters will need to make judgements about the extent that bias may be present. When making judgements about each component, raters should form their opinion based upon information contained in the study rather than making inferences about what the authors intended.

A) SELECTION BIAS

(Q1) Participants are more likely to be representative of the target population if they are randomly selected from a comprehensive list of individuals in the target population (score very likely). They may not be representative if they are referred from a source (e.g. clinic) in a systematic manner (score somewhat likely) or self-referred (score not likely).

(Q2) Refers to the % of subjects in the control and intervention groups that agreed to participate in the study before they were assigned to intervention or control groups.

B) STUDY DESIGN

In this section, raters assess the likelihood of bias due to the allocation process in an experimental study. For observational studies, raters assess the extent that assessments of exposure and outcome are likely to be independent. Generally, the type of design is a good indicator of the extent of bias. In stronger designs, an equivalent control group is present and the allocation process is such that the investigators are unable to predict the sequence.

Randomized Controlled Trial (RCT)

An experimental design where investigators randomly allocate eligible people to an intervention or control group. A rater should describe a study as an RCT if the randomization sequence allows each study participant to have the same chance of receiving each intervention and the investigators could not predict which intervention was next. If the investigators do not describe the allocation process and only use the words ‘random’ or ‘randomly’, the study is described as a controlled clinical trial.

See below for more details.

Was the study described as randomized?
Score YES, if the authors used words such as random allocation, randomly assigned, and random assignment.
Score NO, if no mention of randomization is made.

Was the method of randomization described?
Score YES, if the authors describe any method used to generate a random allocation sequence.
Score NO, if the authors do not describe the allocation method or describe methods of allocation such as alternation, case record numbers, dates of birth, day of the week, and any allocation procedure that is entirely transparent before assignment, such as an open list of random numbers of assignments.
If NO is scored, then the study is a controlled clinical trial.

Was the method appropriate?
Score YES, if the randomization sequence allowed each study participant to have the same chance of receiving each intervention and the investigators could not predict which intervention was next. Examples of appropriate approaches include assignment of subjects by a central office unaware of subject characteristics, or sequentially numbered, sealed, opaque envelopes.
Score NO, if the randomization sequence is open to the individuals responsible for recruiting and allocating participants or providing the intervention, since those individuals can influence the allocation process, either knowingly or unknowingly. If NO is scored, then the study is a controlled clinical trial.

Controlled Clinical Trial (CCT)
An experimental study design where the method of allocating study subjects to intervention or control groups is open to individuals responsible for recruiting subjects or providing the intervention. The method of allocation is transparent before assignment, e.g. an open list of random numbers or allocation by date of birth, etc.

Cohort analytic (two group pre and post)
An observational study design where groups are assembled according to whether or not exposure to the intervention has occurred. Exposure to the intervention is not under the control of the investigators. Study groups might be non-equivalent or not comparable on some feature that affects outcome.

Case control study
A retrospective study design where the investigators gather ‘cases’ of people who already have the outcome of interest and ‘controls’ who do not. Both groups are then questioned or their records examined about whether they received the intervention exposure of interest.

Cohort (one group pre + post (before and after)
The same group is pretested, given an intervention, and tested immediately after the intervention. The intervention group, by means of the pretest, act as their own control group.

Interrupted time series
A time series consists of multiple observations over time. Observations can be on the same units (e.g. individuals over time) or on different but similar units (e.g. student achievement scores for particular grade and school). Interrupted time series analysis requires knowing the specific point in the series when an intervention occurred.

C) CONFOUNDERS
By definition, a confounder is a variable that is associated with the intervention or exposure and causally related to the outcome of interest. Even in a robust study design, groups may not be balanced with respect to important variables prior to the intervention. The authors should indicate if confounders were controlled in the design (by stratification or matching) or in the analysis. If the allocation to intervention and control groups is randomized, the authors must report that the groups were balanced at baseline with respect to confounders (either in the text or a table).

D) BLINDING

(Q1) Assessors should be described as blinded to which participants were in the control and intervention groups. The purpose of blinding the outcome assessors (who might also be the care providers) is to protect against detection bias.

(Q2) Study participants should not be aware of (i.e. blinded to) the research question. The purpose of blinding the participants is to protect against reporting bias.
E) DATA COLLECTION METHODS

Tools for primary outcome measures must be described as reliable and valid. If ‘face’ validity or ‘content’ validity has been demonstrated, this is acceptable. Some sources from which data may be collected are described below:

**Self reported data** includes data that is collected from participants in the study (e.g. completing a questionnaire, survey, answering questions during an interview, etc.).

**Assessment/Screening** includes objective data that is retrieved by the researchers. (e.g. observations by investigators).

**Medical Records/Vital Statistics** refers to the types of formal records used for the extraction of the data.

Reliability and validity can be reported in the study or in a separate study. For example, some standard assessment tools have known reliability and validity.

F) WITHDRAWALS AND DROP-OUTS

Score **YES** if the authors describe BOTH the numbers and reasons for withdrawals and drop-outs.

Score **NO** if either the numbers or reasons for withdrawals and drop-outs are not reported.

The percentage of participants completing the study refers to the % of subjects remaining in the study at the final data collection period in all groups (i.e. control and intervention groups).

G) INTERVENTION INTEGRITY

The number of participants receiving the intended intervention should be noted (consider both frequency and intensity). For example, the authors may have reported that at least 80 percent of the participants received the complete intervention. The authors should describe a method of measuring if the intervention was provided to all participants the same way. As well, the authors should indicate if subjects received an unintended intervention that may have influenced the outcomes. For example, co-intervention occurs when the study group receives an additional intervention (other than that intended). In this case, it is possible that the effect of the intervention may be over-estimated. Contamination refers to situations where the control group accidentally receives the study intervention. This could result in an under-estimation of the impact of the intervention.

H) ANALYSIS APPROPRIATE TO QUESTION

Was the quantitative analysis appropriate to the research question being asked?

An intention-to-treat analysis is one in which all the participants in a trial are analyzed according to the intervention to which they were allocated, whether they received it or not. Intention-to-treat analyses are favoured in assessments of effectiveness as they mirror the noncompliance and treatment changes that are likely to occur when the intervention is used in practice, and because of the risk of attrition bias when participants are excluded from the analysis.
Component Ratings of Study:
For each of the six components A – F, use the following descriptions as a roadmap.

A) SELECTION BIAS

- **Strong**: The selected individuals are very likely to be representative of the target population (Q1 is 1) and there is greater than 80% participation (Q2 is 1).
- **Moderate**: The selected individuals are at least somewhat likely to be representative of the target population (Q1 is 1 or 2); and there is 60 - 79% participation (Q2 is 2). ‘Moderate’ may also be assigned if Q1 is 1 or 2 and Q2 is 5 (can’t tell).
- **Weak**: The selected individuals are not likely to be representative of the target population (Q1 is 3); or there is less than 60% participation (Q2 is 3) or selection is not described (Q1 is 4); and the level of participation is not described (Q2 is 5).

B) DESIGN

- **Strong**: will be assigned to those articles that described RCTs and CCTs.
- **Moderate**: will be assigned to those that described a cohort analytic study, a case control study, a cohort design, or an interrupted time series.
- **Weak**: will be assigned to those that used any other method or did not state the method used.

C) CONFOUNDERS

- **Strong**: will be assigned to those articles that controlled for at least 80% of relevant confounders (Q1 is 2); or (Q2 is 1).
- **Moderate**: will be given to those studies that controlled for 60 – 79% of relevant confounders (Q1 is 1) and (Q2 is 2).
- **Weak**: will be assigned when less than 60% of relevant confounders were controlled (Q1 is 1) and (Q2 is 3) or control of confounders was not described (Q1 is 3) and (Q2 is 4).

D) BLINDING

- **Strong**: The outcome assessor is not aware of the intervention status of participants (Q1 is 2); and the study participants are not aware of the research question (Q2 is 2).
- **Moderate**: The outcome assessor is not aware of the intervention status of participants (Q1 is 2); or the study participants are not aware of the research question (Q2 is 2); or blinding is not described (Q1 is 3 and Q2 is 3).
- **Weak**: The outcome assessor is aware of the intervention status of participants (Q1 is 1); and the study participants are aware of the research question (Q2 is 1).

E) DATA COLLECTION METHODS

- **Strong**: The data collection tools have been shown to be valid (Q1 is 1); and the data collection tools have been shown to be reliable (Q2 is 1).
- **Moderate**: The data collection tools have been shown to be valid (Q1 is 1); and the data collection tools have not been shown to be reliable (Q2 is 2) or reliability is not described (Q2 is 3).
- **Weak**: The data collection tools have not been shown to be valid (Q1 is 2) or both reliability and validity are not described (Q1 is 3 and Q2 is 3).

F) WITHDRAWALS AND DROP-OUTS - a rating of:

- **Strong**: will be assigned when the follow-up rate is 80% or greater (Q2 is 1).
- **Moderate**: will be assigned when the follow-up rate is 60 – 79% (Q2 is 2) OR Q2 is 5 (N/A).
- **Weak**: will be assigned when a follow-up rate is less than 60% (Q2 is 3) or if the withdrawals and drop-outs were not described (Q2 is 4).
15. APPENDIX B: Tobacco Control Survey

Materials

15.1 – Ethics approval: touchscreen computer survey
15.2 – Information Statement
15.3 – Touchscreen computer tobacco control survey
15.1 Ethics approval: touchscreen computer survey

HUMAN RESEARCH ETHICS COMMITTEE

Notification of Expedited Approval

To Chief Investigator or Project Supervisor: Doctor Biljana Bonevski
Cc Co-investigators / Research Students: Mrs Ashleigh Guillaumier
Associate Professor Christine Paul
Professor Catherine d'Este
Re Protocol: Examining the impact of population-level tobacco control strategies on a socially disadvantaged population
Date: 28-Oct-2011
Reference No: H-2011-0276
Date of Initial Approval: 27-Oct-2011

Thank you for your Response to Conditional Approval (minor amendments) submission to the Human Research Ethics Committee (HREC) seeking approval in relation to the above protocol.

Your submission was considered under L2 Low Risk Research Expedited review by the Chair/Deputy Chair.

I am pleased to advise that the decision on your submission is Approved effective 27-Oct-2011.

For noting:

1. The two questions added to the participant survey are noted and approved.
2. You may wish to provide response scale numbers against each of the statements within the ‘client acceptability’ grid.

In approving this protocol, the Human Research Ethics Committee (HREC) is of the opinion that the project complies with the provisions contained in the National Statement on Ethical Conduct in Human Research, 2007, and the requirements within this University relating to human research.

Approval will remain valid subject to the submission, and satisfactory assessment, of annual progress reports. If the approval of an External HREC has been "noted" the approval period is as determined by that HREC.

The full Committee will be asked to ratify this decision at its next scheduled meeting. A formal Certificate of Approval will be available upon request. Your approval number is H-2011-0276.

If the research requires the use of an Information Statement, ensure this number is inserted at the relevant point in the Complaints paragraph prior to distribution to potential participants You may then proceed with the research.
Conditions of Approval

This approval has been granted subject to you complying with the requirements for Monitoring of Progress, Reporting of Adverse Events, and Variations to the Approved Protocol as detailed below.

PLEASE NOTE:
In the case where the HREC has "noted" the approval of an External HREC, progress reports and reports of adverse events are to be submitted to the External HREC only. In the case of Variations to the approved protocol, or a Renewal of approval, you will apply to the External HREC for approval in the first instance and then Register that approval with the University's HREC.

- Monitoring of Progress

Other than above, the University is obliged to monitor the progress of research projects involving human participants to ensure that they are conducted according to the protocol as approved by the HREC. A progress report is required on an annual basis. Continuation of your HREC approval for this project is conditional upon receipt, and satisfactory assessment, of annual progress reports. You will be advised when a report is due.

- Reporting of Adverse Events

1. It is the responsibility of the person first named on this Approval Advice to report adverse events.
2. Adverse events, however minor, must be recorded by the investigator as observed by the investigator or as volunteered by a participant in the research. Full details are to be documented, whether or not the investigator, or his/her deputies, consider the event to be related to the research substance or procedure.
3. Serious or unforeseen adverse events that occur during the research or within six (6) months of completion of the research, must be reported by the person first named on the Approval Advice to the (HREC) by way of the Adverse Event Report form within 72 hours of the occurrence of the event or the investigator receiving advice of the event.
4. Serious adverse events are defined as:
   o Causing death, life threatening or serious disability.
   o Causing or prolonging hospitalisation.
   o Overdoses, cancers, congenital abnormalities, tissue damage, whether or not they are judged to be caused by the investigational agent or procedure.
   o Causing psycho-social and/or financial harm. This covers everything from perceived invasion of privacy, breach of confidentiality, or the diminution of social reputation, to the creation of psychological fears and trauma.
   o Any other event which might affect the continued ethical acceptability of the project.
5. Reports of adverse events must include:
   o Participant's study identification number;
   o date of birth;
   o date of entry into the study;
   o treatment arm (if applicable);
   o date of event;
   o details of event;
   o the investigator's opinion as to whether the event is related to the research procedures; and
- action taken in response to the event.
6. Adverse events which do not fall within the definition of serious or unexpected, including those reported from other sites involved in the research, are to be reported in detail at the time of the annual progress report to the HREC.

- Variations to approved protocol

If you wish to change, or deviate from, the approved protocol, you will need to submit an Application for Variation to Approved Human Research. Variations may include, but are not limited to, changes or additions to investigators, study design, study population, number of participants, methods of recruitment, or participant information/consent documentation. **Variations must be approved by the (HREC) before they are implemented** except when Registering an approval of a variation from an external HREC which has been designated the lead HREC, in which case you may proceed as soon as you receive an acknowledgement of your Registration.

**Linkage of ethics approval to a new Grant**

HREC approvals cannot be assigned to a new grant or award (ie those that were not identified on the application for ethics approval) without confirmation of the approval from the Human Research Ethics Officer on behalf of the HREC.

Best wishes for a successful project.

Professor Allyson Holbrook  
Chair, Human Research Ethics Committee

*For communications and enquiries:*

Human Research Ethics Administration

Research Services  
Research Integrity Unit  
HA148, Hunter Building  
The University of Newcastle  
Callaghan NSW 2308  
T +61 2 492 18999  
F +61 2 492 17164  
Human-Ethics@newcastle.edu.au

*Linked University of Newcastle administered funding:*

<table>
<thead>
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<th>Funding project title</th>
<th>First named investigator</th>
<th>Grant Ref</th>
</tr>
</thead>
</table>

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15.2 Information statement

INFORMATION SHEET
‘Everybody knows’ Project
Document Version 5: 17/05/2012

You are invited to take part in a research project looking at people’s feelings and thoughts about some ways the government tries to help people to stop smoking.

Who is conducting this research?
This research is part of Mrs. Ashleigh Guillaumier’s studies at the University of Newcastle, supervised by Dr. Billie Bonevski, A/Prof Chris Paul and Prof Cate D’Este.

Who can take part in the research?
People aged over 18 years who can read, speak and understand English are invited to take part. People who do not feel well today may wish not to take part. Those people who do complete the survey may be asked if they wish to provide their contact details to the research team to be contacted about opportunities to participate in future related research.

What will the research involve?
If you agree to take part, you will be asked to answer questions on a touch screen computer. The questions will ask about you and your opinions on tobacco control policies, smoking habits, alcohol use and mental health. We can help you complete the survey if you like. The survey will take about 12 mins to complete and you will be reimbursed with a $20 Woolworths “Essentials” Grocery gift card (excludes purchase of tobacco, alcohol and gift cards) for your time. After the survey has been completed and you have received your gift card, you may be asked if you would like to provide your contact details to the research team to be contacted for involvement in future research related to this project. Your contact details will be in no way related or matched to your survey data.

What choice do you have?
Taking part in this research is up to you. Only people who agree to take part will be included in the project. Whether or not you decide to participate will not affect the care you receive at ANGLICARE in any way. If you do decide to take part, you can change your mind at any time without giving a reason. Providing your details to be contacted for participation in future research is entirely your choice and will not affect your survey participation and reimbursement, nor the care you receive at ANGLICARE in any way.

What will the information collected be used for?
This research will provide information about what people think about some tobacco control policies. The information may be used to develop future tobacco control policies, may be published in health journals, used in presentations, and included in a thesis submitted for Mrs Guillaumier’s University studies.
**How will your privacy be protected?**
This is an anonymous survey, and therefore we will not be collecting any personally identifying information as part of the survey. If you do decide to provide your contact details for future follow-up these will be kept separate from your survey responses. All computer survey information that we do collect is private, and data will be kept in password-protected files that can only be accessed by the researchers. Any contact details collected for follow-up contact will be kept private in locked storage, and accessed only by the research team to contact you for involvement in future related research. At the end of the study, any paper documents will be stored in locked storage, and electronic information will be stored in password protected files for a minimum of 5 years.

**What are the risks and benefits of participating?**
By participating in this research you are providing us with information that may assist in the development and targeting of population-level tobacco control policies to reduce the population smoking rate and better support those people trying to quit. We do not think there are any risks to participating in this research; however there is the potential for some individuals to find some of the survey questions upsetting. If completing the survey brings up any personal issues you would like to discuss the following free telephone services may be helpful: Quitline on 13 78 48 or Lifeline on 13 11 14. If you do change your mind and no longer want to complete the survey, you can stop at any time and this decision will not affect the care you receive from ANGLICARE.

**What do you need to do to participate?**
Please read this information statement and be sure you understand its contents before you consent to participate.

If you would like a copy of the research results, you can contact Mrs Ashleigh Guillaumier on the number or email address listed below, or alternatively copies of the summary of the project and results will be left with the front desk at ANGLICARE Campbelltown.

**For more information**
If you have any questions about participating in the study, please speak to the research assistant who gave you this information sheet or contact Mrs Ashleigh Guillaumier on (02) 4033 5711 or by email on Ashleigh.Guillaumier@newcastle.edu.au

Thank you for considering this invitation.

Yours sincerely,

A/Prof. Billie Bonevski  
CINSW Research Fellow  
PRC Health Behaviour  
Billie.Bonevski@newcastle.edu.au  
(02) 4033 5710

A/Prof. Chris Paul  
Senior Research Academic  
Health Behaviour Research Group  
Chris.Paul@newcastle.edu.au  
(02) 4913 8472

Prof. Cate D’Este  
Director  
Centre for Clinical Epidemiology and Biostatistics  
Catherine.DEste@newcastle.edu.au  
(02) 4913 8147

Mrs. Ashleigh Guillaumier  
PhD Student  
PRC Health Behaviour  
Ashleigh.Guillaumier@newcastle.edu.au  
(02) 4033 5711

This project has been approved by the University’s Human Research Ethics Committee, Approval No.H-2011-0276. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, telephone (02 49216333, email Human-Ethics@newcastle.edu.au
15.3 Touchscreen computer tobacco control survey

First, we would like to know a little bit about you.

1. Are you
   
<table>
<thead>
<tr>
<th>Male</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>2</td>
</tr>
</tbody>
</table>

2. In what year were you born?
   
   1 9

3. What is the postcode of the suburb where you live? If you don’t know the postcode, please type ‘0000’. (Press CLR if you make a mistake)
   
   |   |   |   |

4. Are you of Aboriginal or Torres Strait Islander origin?
   
   | Yes, Aboriginal | 1 |
   | Yes, Torres Strait Islander | 2 |
   | No | 3 |

5. What best describes your marital status?
   
   | Married | 1 |
   | De facto or living with a partner | 2 |
   | Separated or divorced | 3 |
   | Never married or single | 4 |
   | Widowed | 5 |

6. What is the highest education that you have completed?
   
   | Primary school | 1 |
   | High school years 7-10 | 2 |
   | High school years 11-12 | 3 |
   | TAFE or other trade qualification | 4 |
   | University Degree | 5 |
7. What is your personal income each week (that is, after tax has been taken out)?

<table>
<thead>
<tr>
<th>Income Range</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $100 per week</td>
<td>1</td>
</tr>
<tr>
<td>Between $100-$199 per week</td>
<td>2</td>
</tr>
<tr>
<td>Between $200-$299 per week</td>
<td>3</td>
</tr>
<tr>
<td>Between $300-$399 per week</td>
<td>4</td>
</tr>
<tr>
<td>Between $400-$499 per week</td>
<td>5</td>
</tr>
<tr>
<td>More than $500 per week</td>
<td>6</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>7</td>
</tr>
</tbody>
</table>

8. What is your main source of income?

<table>
<thead>
<tr>
<th>Source</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paid work</td>
<td>1</td>
</tr>
<tr>
<td>Centrelink</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
</tr>
</tbody>
</table>

9. Counting yourself, how many adults (people aged 18 years and over) live in your household?

[ ] __________ adults

10. How many children live in your household?

[ ] __________ children

11. What type of housing do you live in?

<table>
<thead>
<tr>
<th>Housing Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own house (including with a mortgage)</td>
<td>1</td>
</tr>
<tr>
<td>Government rental house or flat</td>
<td>2</td>
</tr>
<tr>
<td>Private rental house or flat</td>
<td>3</td>
</tr>
<tr>
<td>With family or friends</td>
<td>4</td>
</tr>
<tr>
<td>Supported accommodation (e.g. hostel or boarding house)</td>
<td>5</td>
</tr>
<tr>
<td>Hotel / motel</td>
<td>6</td>
</tr>
<tr>
<td>No home / street living</td>
<td>7</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
</tr>
</tbody>
</table>
FINANCIAL STRESS

12. In the past six months, did any of the following happen to you because of a lack of money?

<table>
<thead>
<tr>
<th>Event</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Could not pay electricity, gas, or telephone bills on time</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Could not pay the mortgage or rent on time</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Pawned or sold something</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Went without meals</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Was unable to heat or cool home</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Asked for financial help from friends or family</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Asked for help from a welfare/community organisation</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

13. Could you raise $2000 in a week if there was an emergency?

<table>
<thead>
<tr>
<th>Response</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

SMOKING NORMS

14. Of the five closest friends or acquaintances that you spend time with on a regular basis, how many of them are smokers?

[ ]
## SMOKING STATUS

15. Do you currently smoke tobacco products?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, Daily</td>
<td>1</td>
</tr>
<tr>
<td>Yes, At least once a week</td>
<td>2</td>
</tr>
<tr>
<td>Yes, but less often than once a week</td>
<td>3</td>
</tr>
<tr>
<td>No, Not at all</td>
<td>4</td>
</tr>
</tbody>
</table>

**LINK:** IF Q15 = 1 GO TO Q17

16. Have you smoked at least 100 cigarettes or a similar amount of tobacco in your life?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Not sure</td>
<td>3</td>
</tr>
</tbody>
</table>

**LINK:** IF Q15 = 2 or 3 AND Q16 = 1 GO TO Q17  
**LINK:** IF Q15 = 4 AND Q16 = 1 GO TO Q37  
**LINK:** IF Q15 = 4 AND Q16 = 2 or 3 GO TO Q40
SMOKER PROFILE

[CURRENT SMOKERS ONLY] (Q15 = 1 or Q15=2-3 AND Q16=1)

17. What type of tobacco do you normally use? Choose one option only.

<table>
<thead>
<tr>
<th>Tobacco Type</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cigarettes (Pre-rolled)</td>
<td>1</td>
</tr>
<tr>
<td>Cigarettes (Roll your own)</td>
<td>2</td>
</tr>
<tr>
<td>Other smoked (e.g. cigars, pipe, chop)</td>
<td>3</td>
</tr>
<tr>
<td>Other smokeless (e.g. chewing tobacco, snuff)</td>
<td>4</td>
</tr>
</tbody>
</table>

If 3 or 4 on Q17, then go to (finishing up the survey)
If 1 on Q17, then go to Q18
If 2 on Q17, then go to Q20

18. What is your regular brand of manufactured cigarettes?

<table>
<thead>
<tr>
<th>Brand Name</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpine</td>
<td>1</td>
</tr>
<tr>
<td>Benson &amp; Hedges</td>
<td>2</td>
</tr>
<tr>
<td>Dunhill</td>
<td>3</td>
</tr>
<tr>
<td>Holiday</td>
<td>4</td>
</tr>
<tr>
<td>Horizon</td>
<td>5</td>
</tr>
<tr>
<td>Longbeach</td>
<td>6</td>
</tr>
<tr>
<td>Marlboro</td>
<td>7</td>
</tr>
<tr>
<td>Peter Jackson</td>
<td>8</td>
</tr>
<tr>
<td>Peter Stuyvesant</td>
<td>9</td>
</tr>
<tr>
<td>Winfield</td>
<td>10</td>
</tr>
<tr>
<td>Other: specify_____</td>
<td>11</td>
</tr>
<tr>
<td>I don’t have a regular brand, I just buy whatever is cheapest</td>
<td>12</td>
</tr>
</tbody>
</table>

19. What is your regular pack size of manufactured cigarettes?

<table>
<thead>
<tr>
<th>Pack Size</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 cigarettes</td>
<td>1</td>
</tr>
<tr>
<td>25 cigarettes</td>
<td>2</td>
</tr>
<tr>
<td>30 cigarettes</td>
<td>3</td>
</tr>
<tr>
<td>40 cigarettes</td>
<td>4</td>
</tr>
<tr>
<td>50 cigarettes</td>
<td>5</td>
</tr>
</tbody>
</table>
20. On an average day, how many cigarettes do you smoke?  

21. At what age did you first start smoking daily?  

22. How soon after waking up do you smoke?  

<table>
<thead>
<tr>
<th>Options</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 5 minutes</td>
<td>1</td>
</tr>
<tr>
<td>6-30 minutes</td>
<td>2</td>
</tr>
<tr>
<td>31-60 minutes</td>
<td>3</td>
</tr>
<tr>
<td>After 60 minutes</td>
<td>4</td>
</tr>
</tbody>
</table>

23. How much do you spend on average on tobacco each week? Enter your answer in dollars ($)  

24. Where did you last buy cigarettes?  

<table>
<thead>
<tr>
<th>Options</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supermarket</td>
<td>1</td>
</tr>
<tr>
<td>Service Station</td>
<td>2</td>
</tr>
<tr>
<td>Smoke shop / Tobacconist</td>
<td>3</td>
</tr>
<tr>
<td>Corner shop / Convenience store</td>
<td>4</td>
</tr>
<tr>
<td>Internet</td>
<td>5</td>
</tr>
<tr>
<td>Over-the-counter in a pub/bar/club</td>
<td>6</td>
</tr>
<tr>
<td>Vending machine</td>
<td>7</td>
</tr>
<tr>
<td>Newsagency</td>
<td>8</td>
</tr>
<tr>
<td>Liquor store</td>
<td>9</td>
</tr>
<tr>
<td>Video shop</td>
<td>10</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
</tr>
</tbody>
</table>
25. Which of these statements most applies to you? (Choose one response)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>I hate being a smoker</td>
<td>1</td>
</tr>
<tr>
<td>I am unhappy about being a smoker</td>
<td>2</td>
</tr>
<tr>
<td>I am happy about being a smoker</td>
<td>3</td>
</tr>
<tr>
<td>Don’t know/can’t decide</td>
<td>4</td>
</tr>
</tbody>
</table>

26. How much do you enjoy smoking?

<table>
<thead>
<tr>
<th>Enjoyment</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very much</td>
<td>1</td>
</tr>
<tr>
<td>Quite a bit</td>
<td>2</td>
</tr>
<tr>
<td>Not particularly</td>
<td>3</td>
</tr>
<tr>
<td>Not at all</td>
<td>4</td>
</tr>
</tbody>
</table>

27. In the last six months, has there been a time when money you spent on cigarettes resulted in not having enough money for household essentials such as food?

<table>
<thead>
<tr>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>
QUITTING

[CURRENT SMOKERS ONLY] (Q15 = 1 or Q15=2-3 AND Q16=1)

28. Please rate your agreement with the following statements on a scale of 1 (strongly disagree) to 4 (strongly agree)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Totally Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Totally Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have been thinking a lot about quitting smoking recently</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I am eager for a life without smoking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Lately, I have been thinking about which cigarettes during my day would be the hardest to give up</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I am not prepared to make changes in my life in order to quit smoking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

29. On a scale of 1 to 10, where 1 equals “not at all” and 10 equals “very much”, how much do you want to quit smoking?

30. Are you seriously thinking of quitting smoking in the next 30 days, the next 6 months, or not at all?

<table>
<thead>
<tr>
<th>Option</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quit in the next 30 days</td>
<td>1</td>
</tr>
<tr>
<td>Quit in the next 6 months</td>
<td>2</td>
</tr>
<tr>
<td>Not thinking of quitting at all</td>
<td>3</td>
</tr>
</tbody>
</table>

31. On a scale of 1 to 5, where 1 is the lowest and 5 is the highest, how would you rate quitting smoking as a priority in your life?

<table>
<thead>
<tr>
<th>Priority</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Highest</td>
<td>5</td>
</tr>
<tr>
<td>priority</td>
<td></td>
</tr>
</tbody>
</table>

32. During the last 30 days, would you say you have thought about the changes you will have to make in your life to quit smoking?

<table>
<thead>
<tr>
<th>Option</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rarely</td>
<td>1</td>
</tr>
<tr>
<td>Some days</td>
<td>2</td>
</tr>
<tr>
<td>Most days</td>
<td>3</td>
</tr>
<tr>
<td>Every day</td>
<td>4</td>
</tr>
</tbody>
</table>
33. Have you ever tried to quit smoking before?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LINK: IF Q33=2, GO TO Q35**

34. In the past 12 months, how many times have you made a quit attempt that lasted at least one day?

Press CLR if you make a mistake

35. How confident are you that you could quit smoking for good in the next three months?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all confident</td>
<td></td>
<td></td>
<td></td>
<td>Extremely confident</td>
</tr>
</tbody>
</table>
### SELF-EXEMPTING BELIEFS

**[CURRENT SMOKERS ONLY] (Q15 = 1 or Q15=2-3 AND Q16=1)**

36. Please rate your agreement with the following statements on a scale of 1 (totally disagree) to 5 (totally agree)

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Totally disagree</td>
<td>Disagree</td>
<td>Neither agree nor disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>1. Lots of doctors and nurses smoke, so it cannot be all that harmful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. The medical evidence that smoking is harmful is exaggerated</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Smoking cannot be all that bad for you because many people who smoke live long lives</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. Smoking cannot be all that bad because some top sports people smoke and still perform well</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. More lung cancer is caused by such things as air pollution, petrol, and diesel fumes than smoking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Cancer mostly strikes people with negative attitudes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. They will have found cures for cancer and all the other problems smoking causes before I am likely to get any of them</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. You can overcome the harms of smoking by doing things like eating health food and exercising regularly</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. I think I must have the sort of good health or genes that means I can smoke without getting any of the harms</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. I think I would have to smoke a lot more than I do to put my health at risk</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. I would rather live a shorter life and enjoy it than a longer one where I will be deprived of the pleasure of smoking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. You have got to die of something, so why not enjoy yourself and smoke</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. Everything causes cancer these days</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. If smoking was so bad for you, the government would ban tobacco sales</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. It is dangerous to walk across the street</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. Smoking is no more risky than lots of other things people do</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
### EX-SMOKER PROFILE

**[EX-SMOKERS ONLY] (Q15 = 4 AND Q16 = 1)**

37. How long has it been since you quit smoking?

<table>
<thead>
<tr>
<th>Duration</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 3 months</td>
<td>1</td>
</tr>
<tr>
<td>3-6 months</td>
<td>2</td>
</tr>
<tr>
<td>Between 6 and 12 months</td>
<td>3</td>
</tr>
<tr>
<td>Between 1 and 2 years</td>
<td>4</td>
</tr>
<tr>
<td>Between 2 and 5 years</td>
<td>5</td>
</tr>
<tr>
<td>More than 5 years</td>
<td>6</td>
</tr>
</tbody>
</table>

38. Did you stop smoking suddenly or did you gradually cut down on the number of cigarettes smoked?

<table>
<thead>
<tr>
<th>Method</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stopped smoking suddenly</td>
<td>1</td>
</tr>
<tr>
<td>Gradually cut down number of cigarettes</td>
<td>2</td>
</tr>
<tr>
<td>smoked</td>
<td></td>
</tr>
<tr>
<td>Can’t remember</td>
<td>3</td>
</tr>
</tbody>
</table>

39. What type of tobacco did you normally use when you were smoking?

<table>
<thead>
<tr>
<th>Tobacco Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cigarettes (Pre-rolled)</td>
<td>1</td>
</tr>
<tr>
<td>Cigarettes (Roll your own)</td>
<td>2</td>
</tr>
<tr>
<td>Other smoked (e.g. cigars, pipe, chop chop)</td>
<td>3</td>
</tr>
<tr>
<td>Other smokeless (e.g. chewing tobacco, snuff)</td>
<td>4</td>
</tr>
</tbody>
</table>
TOBACCO CAMPAIGN – MASS MEDIA

ALL RESPONDENTS TO ANSWER

We would now like to get your opinion about some TV commercials you may have seen recently.

Two of three selected television ads presented by the Cancer Institute NSW will be displayed, each followed by this set of questions. The media clips ‘Bronchoscopy’, ‘Anthony’ and ‘Get Off Cigarettes’ can be sourced from: http://www.cancerinstitute.org.au/prevention-and-early-detection/public-education-campaigns/tobacco-control

40. Please indicate how much you agree or disagree with the following statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Slightly Disagree</th>
<th>Neither agree nor disagree</th>
<th>Slightly Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>This ad was easy to understand</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>This ad was believable</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>This ad taught me something new</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>This ad made me stop and think</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>This ad made me feel uncomfortable</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>This ad was relevant to me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>This ad provided good reasons to quit smoking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>This ad was an effective anti-smoking ad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I would be likely to talk to someone else about this ad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

41. Please indicate how much you agree or disagree with the following statements. (SMOKERS ONLY)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Slightly Disagree</th>
<th>Neither agree nor disagree</th>
<th>Slightly Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>This ad made me feel concerned about my smoking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>This ad made me more likely to try to quit</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>This ad made me feel more confident about quitting smoking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>This ad made me feel more informed about how to quit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
42. Please indicate how much you agree or disagree with the following statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Slightly Disagree</th>
<th>Neither agree nor disagree</th>
<th>Slightly Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>This ad made me crave a cigarette</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>This ad makes me want to smoke</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I don’t understand this ad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I don’t believe what the ad was saying</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>This ad is not relevant to me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The person/people in this ad are not like me/my friends</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I can’t relate to this ad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

43. Thinking about the ad you just watched, please indicate your response to each item. This ad was:

<table>
<thead>
<tr>
<th>Emotional</th>
<th>Not at all</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powerful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Intense</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>
44. On a scale of 1 to 7 (or 10), where 1 indicates “none of this feeling” and 7 (or 10) indicates “extremely” please rate the following. This ad made me feel...

<table>
<thead>
<tr>
<th>Feeling</th>
<th>Not at all</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxious</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ashamed</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disgusted</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fearful</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guilty</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sad</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accepted</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isolated</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strong-willed</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uneasy</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Embarrassed</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angry</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hopeless</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

45. Have you previously discussed this ad with family or friends?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>
QUITTING
[CURRENT SMOKERS ONLY] (Q15 = 1 or Q15=2-3 AND Q16=1)

46. Which statement best describes how interested you are in quitting smoking?

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am not interested in quitting smoking</td>
<td>1</td>
</tr>
<tr>
<td>I am a bit interested in quitting smoking</td>
<td>2</td>
</tr>
<tr>
<td>I am very interested in quitting smoking</td>
<td>3</td>
</tr>
</tbody>
</table>

47. What are your intentions regarding quitting? Do you plan to:

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quit in the next 30 days</td>
<td>1</td>
</tr>
<tr>
<td>Quit in the next 6 months</td>
<td>2</td>
</tr>
<tr>
<td>Quit, but not in the next 6 months</td>
<td>3</td>
</tr>
<tr>
<td>Never quit</td>
<td>4</td>
</tr>
<tr>
<td>Don’t know</td>
<td>5</td>
</tr>
</tbody>
</table>
48. Considering your *fortnightly income*, please estimate the *percentage* of money you would normally spend each fortnight in the categories below.

<table>
<thead>
<tr>
<th>Spending category</th>
<th>% allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOUSING + FOOD + TRANSPORT</td>
<td></td>
</tr>
<tr>
<td>HEALTH &amp; EDUCATION</td>
<td></td>
</tr>
<tr>
<td>PERSONAL: Alcohol, Tobacco, Entertainment, Clothing</td>
<td></td>
</tr>
<tr>
<td>PERSONAL SAVINGS</td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

49. For you personally, how often does the price of cigarettes influence…?

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>How much you smoke</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Where you buy cigarettes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The brand you smoke</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The type of product you smoke (for instance, roll-your-own in preference to manufactured cigarettes)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

50. If there was a 10% price increase, the average price of a 25-pack of cigarettes would increase by approximately $1.65 per pack. If this happened would you… (Choose as many as apply).

| Make no changes to my smoking             | 1 |
| Smoke more of each cigarette (i.e. smoke further down stick or draw harder) | 2 |
| Smoke less – cut down the number of cigarettes smoked per day | 3 |
| Buy smaller amount of tobacco or cigarettes at a time | 4 |
| Buy lower priced brands                   | 5 |
| Buy in bulk (e.g. cartons)                | 6 |
| Use loose tobacco / roll-your-own         | 7 |
| Buy unbranded tobacco, such as chop-chop  | 8 |
| Unsure                                   | 9 |
51. If there was a 20% price increase, the average price of a 25-pack of cigarettes would increase by approximately $3.30 per pack. If this happened would you... (Choose as many as apply).

<table>
<thead>
<tr>
<th>Make no changes to my smoking</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoke more of each cigarette (i.e. smoke further down stick or draw harder)</td>
<td>2</td>
</tr>
<tr>
<td>Smoke less – cut down the number of cigarettes smoked per day</td>
<td>3</td>
</tr>
<tr>
<td>Buy smaller amount of tobacco or cigarettes at a time</td>
<td>4</td>
</tr>
<tr>
<td>Buy lower priced brands</td>
<td>5</td>
</tr>
<tr>
<td>Buy in bulk (e.g. cartons)</td>
<td>6</td>
</tr>
<tr>
<td>Use loose tobacco / roll-your-own</td>
<td>7</td>
</tr>
<tr>
<td>Buy unbranded tobacco, such as chop-chop</td>
<td>8</td>
</tr>
<tr>
<td>Unsure</td>
<td>9</td>
</tr>
</tbody>
</table>

LINK: IF Q 48 OR 49 = 1, PRESENT Q 50, OR ELSE GO TO Q51

52. You have reported that if the price of cigarettes increased by either 10% or 20% you would not make any changes to your current smoking habits. In the situation where your weekly spending on cigarettes increases, but your income stays the same, which category of spending would you take money from (i.e. which category would you spend less on each week) in order to cover the increased cost of cigarettes?

<table>
<thead>
<tr>
<th>HOUSING</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOOD</td>
<td>2</td>
</tr>
<tr>
<td>TRANSPORT</td>
<td>3</td>
</tr>
<tr>
<td>HEALTH &amp; EDUCATION</td>
<td>4</td>
</tr>
<tr>
<td>ALCOHOL</td>
<td>5</td>
</tr>
<tr>
<td>TOBACCO</td>
<td>6</td>
</tr>
<tr>
<td>CLOTHING</td>
<td>7</td>
</tr>
<tr>
<td>ENTERTAINMENT</td>
<td>8</td>
</tr>
<tr>
<td>PERSONAL SAVINGS</td>
<td>9</td>
</tr>
<tr>
<td>OTHER</td>
<td>10</td>
</tr>
</tbody>
</table>

53. What price would a pack of 25 cigarettes need to get to for you to stop smoking?

$
### TOBACCO CAMPAIGN – PLAIN PACKAGING

ALL RESPONDENTS TO ANSWER & IMAGE ALWAYS PRESENT ON SCREEN – EXCEPT WHERE NOTED

54. What is the first thing you noticed about this pack? Choose one response only.

<table>
<thead>
<tr>
<th>Brand name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand imagery</td>
<td>1</td>
</tr>
<tr>
<td>Health warning image</td>
<td>2</td>
</tr>
<tr>
<td>Health warning text</td>
<td>3</td>
</tr>
<tr>
<td>Colour</td>
<td>4</td>
</tr>
</tbody>
</table>

55. What was the brand of the pack of cigarettes just displayed? (Pack image not present on screen)

<table>
<thead>
<tr>
<th>Brand</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpine</td>
<td>1</td>
</tr>
<tr>
<td>Benson &amp; Hedges</td>
<td>2</td>
</tr>
<tr>
<td>Dunhill</td>
<td>3</td>
</tr>
<tr>
<td>Holiday</td>
<td>4</td>
</tr>
<tr>
<td>Horizon</td>
<td>5</td>
</tr>
<tr>
<td>Longbeach</td>
<td>6</td>
</tr>
<tr>
<td>Marlboro</td>
<td>7</td>
</tr>
<tr>
<td>Peter Jackson</td>
<td>8</td>
</tr>
<tr>
<td>Peter Stuyvesant</td>
<td>9</td>
</tr>
<tr>
<td>Winfield</td>
<td>10</td>
</tr>
</tbody>
</table>

56. What is the most you would you be prepared to pay for this packet of cigarettes? (SMOKERS ONLY)

$ __________

57. On a scale of 1 (not at all effective) to 10 (very effective), how effective do you think this pack would be in encouraging established smokers to quit?
58. Which health warning appeared on the pack that was just displayed? (Pack image not present on screen)

<table>
<thead>
<tr>
<th>Health Warning</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking causes peripheral vascular disease</td>
<td>1</td>
</tr>
<tr>
<td>Smoking causes mouth and throat cancer</td>
<td>2</td>
</tr>
<tr>
<td>Don’t let your children breathe your smoke</td>
<td>3</td>
</tr>
<tr>
<td>Quitting will improve your health</td>
<td>4</td>
</tr>
<tr>
<td>Smoking causes lung cancer</td>
<td>5</td>
</tr>
<tr>
<td>Smoking causes heart disease</td>
<td>6</td>
</tr>
<tr>
<td>Smoking doubles your risk of stroke</td>
<td>7</td>
</tr>
</tbody>
</table>

59. How well do you think the following phrases relate to the cigarette pack shown from 1 (not at all well) to 7 (extremely well)?
   “This pack is....”

   Popular among smokers
   Attractive
   Sophisticated
   Is a brand you might try / smoke

60. On a scale of 1 (not at all) to 7 (extremely), please rate the following statements. “This pack...” (SMOKERS ONLY)

   Makes me want a cigarette now
   Makes me think about quitting now
   Would make it easier to quit smoking

61. How well do you think the following characteristics describe a typical smoker of the pack of cigarettes shown from 1 (not at all well) to 7 (extremely well)?
   “A typical smoker of this pack is....”

   Trendy
   Boring
   Successful
62. Please rate the following phrases describing the taste of cigarettes from the pack shown from 1 (not at all) to 7 (extremely).

“I would expect the cigarettes in this pack to be....”

<table>
<thead>
<tr>
<th>Enjoyable to smoke</th>
<th>Rich in tobacco flavour</th>
<th>High in tar and nicotine</th>
<th>Satisfying in taste</th>
<th>Harmful to your health</th>
</tr>
</thead>
</table>

63. If you ran out of cigarettes and only the packs below were available in the store you went to, which would you be most tempted to buy? (SMOKERS ONLY)

*Participants presented with BRANDED = SET A*

*Participants presented with PLAIN = SET B*

**A)**

<table>
<thead>
<tr>
<th>Pack 1</th>
<th>Pack 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Pack 1" /></td>
<td><img src="image2.png" alt="Pack 2" /></td>
</tr>
</tbody>
</table>

I would not buy any

**B)**

<table>
<thead>
<tr>
<th>Pack 1</th>
<th>Pack 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="Pack 1" /></td>
<td><img src="image4.png" alt="Pack 2" /></td>
</tr>
</tbody>
</table>

I would not buy any
64. To what extent to you believe the following statements?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Slightly Disagree</th>
<th>Neither agree nor disagree</th>
<th>Slightly Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking causes peripheral vascular disease</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Smoking causes mouth and throat cancer</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Don’t let your children breathe your smoke</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Quitting will improve your health</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Smoking causes lung cancer</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Smoking causes heart disease</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Smoking doubles your risk of stroke</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

65. In the last month have the warning labels on cigarette packs delayed or stopped you from having a cigarette when you were about to smoke one? (SMOKERS ONLY)

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Once</th>
<th>A few times</th>
<th>Many times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delayed a cigarette</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Stopped a cigarette</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
CLIENT ACCEPTABILITY

66. On a scale of 1 (strongly disagree) to 5 (strongly agree):

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Slightly Disagree</th>
<th>Neither agree nor disagree</th>
<th>Slightly Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too long</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Easy to read</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Upsetting</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Easy to understand</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Interesting</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Too personal</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Non-threatening</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Judgemental</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Enjoyable</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Embarrassing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Informative</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

67. On a scale of 1 to 10 where 1 is not at all distressed and 10 is very distressed, did completing this survey make you feel distressed?
16. APPENDIX C: Focus group materials

16.1 – Ethics approval: focus groups
16.2 – Manager Information Statement
16.3 – Manager Consent Form
16.4 – Client Information Statement
16.5 – Client Consent Form
16.6 – Client Focus Group Survey
16.7 – Discussion Guide
16.1 Ethics approval: focus groups

HUMAN RESEARCH ETHICS COMMITTEE

Notification of Expedited Approval

To Chief Investigator or Project Supervisor: Associate Professor Billie Bonevski
Cc Co-investigators / Research Students:
Mrs Ashleigh Guillaumier
Associate Professor Christine Paul
Professor Catherine d’Este

Re Protocol: Exploring the perceptions of a socially disadvantaged population to mass media and plain packaging tobacco control strategies

Date: 15-Aug-2012
Reference No: H-2012-0206
Date of Initial Approval: 15-Aug-2012

Thank you for your Response to Conditional Approval (minor amendments) submission to the Human Research Ethics Committee (HREC) seeking approval in relation to the above protocol.

Your submission was considered under Expedited review by the Ethics Administrator.

I am pleased to advise that the decision on your submission is Approved effective 15-Aug-2012.

In approving this protocol, the Human Research Ethics Committee (HREC) is of the opinion that the project complies with the provisions contained in the National Statement on Ethical Conduct in Human Research, 2007, and the requirements within this University relating to human research.

Approval will remain valid subject to the submission, and satisfactory assessment, of annual progress reports. If the approval of an External HREC has been "noted" the approval period is as determined by that HREC.

The full Committee will be asked to ratify this decision at its next scheduled meeting. A formal Certificate of Approval will be available upon request. Your approval number is H-2012-0206.

If the research requires the use of an Information Statement, ensure this number is inserted at the relevant point in the Complaints paragraph prior to distribution to potential participants. You may then proceed with the research.

Conditions of Approval

This approval has been granted subject to you complying with the requirements for Monitoring of Progress, Reporting of Adverse Events, and Variations to the Approved Protocol as detailed
below.

PLEASE NOTE:
In the case where the HREC has "noted" the approval of an External HREC, progress reports and reports of adverse events are to be submitted to the External HREC only. In the case of Variations to the approved protocol, or a Renewal of approval, you will apply to the External HREC for approval in the first instance and then Register that approval with the University's HREC.

- Monitoring of Progress

Other than above, the University is obliged to monitor the progress of research projects involving human participants to ensure that they are conducted according to the protocol as approved by the HREC. A progress report is required on an annual basis. Continuation of your HREC approval for this project is conditional upon receipt, and satisfactory assessment, of annual progress reports. You will be advised when a report is due.

- Reporting of Adverse Events

1. It is the responsibility of the person first named on this Approval Advice to report adverse events.
2. Adverse events, however minor, must be recorded by the investigator as observed by the investigator or as volunteered by a participant in the research. Full details are to be documented, whether or not the investigator, or his/her deputies, consider the event to be related to the research substance or procedure.
3. Serious or unforeseen adverse events that occur during the research or within six (6) months of completion of the research, must be reported by the person first named on the Approval Advice to the (HREC) by way of the Adverse Event Report form within 72 hours of the occurrence of the event or the investigator receiving advice of the event.
4. Serious adverse events are defined as:
   - Causing death, life threatening or serious disability.
   - Causing or prolonging hospitalisation.
   - Overdoses, cancers, congenital abnormalities, tissue damage, whether or not they are judged to be caused by the investigational agent or procedure.
   - Causing psycho-social and/or financial harm. This covers everything from perceived invasion of privacy, breach of confidentiality, or the diminution of social reputation, to the creation of psychological fears and trauma.
   - Any other event which might affect the continued ethical acceptability of the project.

5. Reports of adverse events must include:
   - Participant's study identification number;
   - date of birth;
   - date of entry into the study;
   - treatment arm (if applicable);
   - date of event;
   - details of event;
   - the investigator's opinion as to whether the event is related to the research procedures; and
6. Adverse events which do not fall within the definition of serious or unexpected, including those reported from other sites involved in the research, are to be reported in detail at the time of the annual progress report to the HREC.

- Variations to approved protocol

If you wish to change, or deviate from, the approved protocol, you will need to submit an Application for Variation to Approved Human Research. Variations may include, but are not limited to, changes or additions to investigators, study design, study population, number of participants, methods of recruitment, or participant information/consent documentation. **Variations must be approved by the (HREC) before they are implemented** except when Registering an approval of a variation from an external HREC which has been designated the lead HREC, in which case you may proceed as soon as you receive an acknowledgement of your Registration.

**Linkage of ethics approval to a new Grant**

HREC approvals cannot be assigned to a new grant or award (ie those that were not identified on the application for ethics approval) without confirmation of the approval from the Human Research Ethics Officer on behalf of the HREC.

Best wishes for a successful project.

Professor Allyson Holbrook  
Chair, Human Research Ethics Committee

*For communications and enquiries:*  
**Human Research Ethics Administration**  
Research Services  
Research Integrity Unit  
HA148, Hunter Building  
The University of Newcastle  
Callaghan NSW 2308  
T +61 2 492 18999  
F +61 2 492 17164  
Human-Ethics@newcastle.edu.au

**Linked University of Newcastle administered funding:**
Information about the Tobacco Control Focus Group Project
Document Version 1: 19/07/2012

What will the research project involve?
The research team would like to undertake a number of focus groups in which clients of Social and Community Service Organisations are invited to talk about their thoughts and feelings regarding tobacco control advertising campaigns and changes to cigarette packaging. Interested clients would be asked to participate in one 1.5 hour focus group facilitated by two members of the research team.

Who is conducting this research?
This research is part of Mrs Ashleigh Guillaumier’s PhD (Behavioural Science) studies at the University of Newcastle, supervised by A/Prof. Billie Bonevski, Associate Professor Chris Paul and Prof Cate D’Este.

What role would my community service organisation play in this research?
If you consent to your service being involved in the research, we would like to have your staff distribute study information statements to all eligible clients who attend your service during a set recruitment time period. Staff will receive a list of criteria to assess client eligibility against. Staff may also be asked to record the name and contact details of interested clients, or else clients may contact the research staff directly. Ideally, the focus group would be held onsite at your service (or at an affiliated community facility).

Privacy and Ethical Considerations
All research procedures and materials will gain approval from the University of Newcastle Human Research Ethics Committee prior to the commencement of the project. No organisation or individual participants will be identifiable in the reporting of the results of this research. Data collected will be confidential and on completion of the study all research documents and recordings will be kept in a locked storage facility for five years, after which they will be destroyed. If you consent for your organisation to assist in this research, you may withdraw your consent at any time, without providing a reason.

Further Information
If you have any questions about the study, please contact Ashleigh Guillaumier on (02) 4033 5711 or on Ashleigh.Guillaumier@newcastle.edu.au, or Billie Bonevski on (02) 4033 5711 or Billie.Bonevski@newcastle.edu.au

Thank you for considering this invitation.
Yours sincerely,

Billie Bonevski
A/Prof. Billie Bonevski (PhD)
School of Medicine & Public Health
University of Newcastle
Level 5, McAuley Centre, The Calvary-Mater Hospital
Callaghan NSW 2308 Australia
Ph: (02) 4033 5710 / Fax: (02) 4033 5692
E: Billie.Bonevski@newcastle.edu.au

This project has been approved by the University’s Human Research Ethics Committee, Approval No H-2012-0206. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, telephone (02) 49216333, email Human-Ethics@newcastle.edu.au
Manager Consent Form

Manager Consent Form for the Research Project:

Perceptions of Population-level Tobacco Control Strategies
A/Prof Billie Bonevski, A/Prof. Chris Paul, Prof. Cate D'Este, Mrs Ashleigh Guillaumier

Document Version [1]; dated [19/07/2012]

I agree to have my service organisation participate in the above research project and give my consent as the Manager of [insert name of organisation] freely.

I understand that the project will be conducted as described in the Information Statement, a copy of which I have retained.

I understand [insert name of organisation] can withdraw from the project at any time and do not have to give any reason for withdrawing.

I agree that:
- Staff of [insert name of organisation] will assist the research team by distributing the project information statement to service clients

I understand that the identity of [insert name of organisation] will remain confidential, and will only be reported as a ‘Social and Community Service Organisation in the NSW Hunter Region’ in any reports arising from the research.

I have had the opportunity to have questions answered to my satisfaction.

Organisation: ________________________________________________________________

Print Name: ________________________________________________________________

Signature: ___________________________ Date: ________________________________
INFORMATION SHEET
Tobacco Control Focus Groups
Document Version 2: 19/07/2012

You are invited to take part in a research project to talk about your thoughts and feelings about some tobacco control advertising campaigns and changes to cigarette packaging.

Who is conducting this research?
This research is part of Mrs Ashleigh Guillaumier’s PhD (Behavioural Science) studies at the University of Newcastle, supervised by Associate Professor Billie Bonevski, Associate Professor Chris Paul and Prof Cate D’Este.

Who can take part in the research?
People aged over 18 years who are current daily smokers and can speak and understand English are invited to take part. People who may be too unwell to participate in a focus group discussion, or who may find discussions about smoking and health to be distressing are asked not to participate.

What will the research involve?
If you agree to participate, you will be invited to take part in a group discussion. This discussion will involve 4 to 8 people who are also clients of community service organisations talking about their perceptions of and responses to selected tobacco control policies. This discussion will be held at [insert location/date/time], and will take 1.5 hours including time for refreshments and explanations at the start and you will be reimbursed with a $50 Woolworths “Essentials” Grocery gift card (excludes purchase of tobacco, alcohol and gift cards) for your time. The discussion will be conducted by Mrs Ashleigh Guillaumier, and will be recorded on audiotape. Before the discussion begins we would also like you to complete a short pen-and-paper survey about your smoking history and demographics.

What choice do you have?
Participation in this research is entirely your choice. Only those people who give their informed consent will be included in the project. Whether or not you decide to participate, your decision will not disadvantage you in any way.

If you do decide to participate, you may withdraw from the project at any time without giving a reason, and have the option of withdrawing any data which identifies you. At the end of the discussion you can listen to the audiotape of the discussion and erase your comments if you wish.

What will the information collected be used for?
This research will provide information about what people think about some tobacco control policies. The information may be used to develop future tobacco control policies, may be published in health journals and used in presentations, and included in a thesis submitted for Mrs Guillaumier’s University studies. While quotes from some discussions may be used to give examples of people’s points of view, individual participants will not be identified in any reports arising from the research. If you would like a summary of the results of the research, please contact Mrs Ashleigh Guillaumier via email on the address provided below.
How will your privacy be protected?
We will ensure your privacy is protected. All information we collect is private, and will be kept in locked cabinets that can only be accessed by the researchers. At the end of the study, all paper documents will be stored in locked storage, and electronic information will be stored in password protected files for a minimum of 5 years. We will not use your contact details for anything other than to contact you about this study and will not give your name to anyone outside the researchers involved in this study.

What are the risks and benefits of participating?
By participating in this research you are providing us with information that may assist in the development and targeting of population-level tobacco control policies to reduce the population smoking rate and better support those people trying to quit. We do not think there are any risks to participating in this research, however if you find any questions to be distressing you may leave the focus group at any time. If participating in the focus group brings up any personal issues you would like to discuss the following free telephone services may be helpful: Quitline on 13 78 48 or Lifeline on 13 11 14.

What do you need to do to participate?
Please read this information statement and be sure you understand its contents before you consent to participate. If you would like to participate, please contact Ashleigh Guillaumier via phone on (02) 4033 5711 or by email on Ashleigh.Guillaumier@newcastle.edu.au to register your attendance at the discussion group that will be held [insert venue name, location and date/time]. You may also leave your details with the [insert name of organisation] staff, who will pass these details on to the research team only. A member of the research team will then contact you to confirm your attendance at the group. On the day of the group, once all participants have arrived, you will each be asked to complete a participant consent form and brief demographics survey, which the researchers will collect prior to commencement of the recorded discussion.

For more information
If you have any questions about participating in the study, please speak to the research assistant who gave you this information sheet or contact Mrs Ashleigh Guillaumier on (02) 4033 5711 or by email on Ashleigh.Guillaumier@newcastle.edu.au

Thank you for considering this invitation.

Yours sincerely,

Associate Professor Billie Bonevski
CINSW Research Fellow
School of Medicine & Public Health
Billie.Bonevski@newcastle.edu.au
(02) 4033 5710

Associate Professor Chris Paul
Senior Research Academic
Health Behaviour Research Group
Chris.Paul@newcastle.edu.au
(02) 4913 8472

Professor Cate D’Este
Director
Centre for Clinical Epidemiology and Biostatistics
Catherine.DEste@newcastle.edu.au
(02) 4913 8147

Mrs Ashleigh Guillaumier
PhD Candidate
School of Medicine & Public Health
Ashleigh.Guillaumier@newcastle.edu.au
(02) 4033 5711

This project has been approved by the University’s Human Research Ethics Committee, Approval No. H-2012-0206. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, telephone (02 49216333, email Human-Ethics@newcastle.edu.au.
16.5 Client Consent Form

Consent Form for the Research Project:
Perceptions of Population-level Tobacco Control Strategies
A/Prof. Billie Bonevski, A/Prof. Chris Paul, Prof. Cate D’Este, Mrs Ashleigh Guillaumier

Document Version [2]; dated [19/07/2012]

I agree to participate in the above research project and give my consent freely.

I understand that the project will be conducted as described in the Information Statement, a copy of which I have retained.

I understand I can withdraw from the project at any time and do not have to give any reason for withdrawing.

I agree that:
- The group discussion will be audio taped
- I can edit or erase anything I say from the tape
- Anything said in the discussion is confidential
- Comments or quotes recorded on the tape may be used in written reports (subject to consent below), however no names or identifying information will be used
- I can withdraw from the discussion at any time, without giving a reason
- I have had the opportunity to have questions answered to my satisfaction.

I understand that my personal information will remain confidential to the researchers.

I have had the opportunity to have questions answered to my satisfaction.

I consent to:

<table>
<thead>
<tr>
<th>Participate in a focus group discussion</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>The researchers using comments or direct quotes from the audio tapes in written reports and publications. I understand no names or identifying information will be used.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Complete a participant demographics and smoking history survey</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

I have received the $50 Woolworths Essentials Gift Card as reimbursement: [ ]

Print Name: ____________________________________________________________

Signature: ____________________________ Date: ____________________________
16.6 Client Focus Group Survey

1. How often do you smoke tobacco products?
   - Daily
   - At least once a week
   - Less often than once a week

2. What type of tobacco do you normally use? Choose one option only.
   - Cigarettes (Pre-rolled)
   - Cigarettes (Roll your own)
   - Other

3. On an average day, how many cigarettes do you smoke?
   

4. At what age did you first start smoking daily?
   
   years

5. How soon after waking up do you smoke?
   - Within 5 minutes
   - 6-30 minutes
   - 31-60 minutes
   - After 60 minutes

6. Have you ever tried to quit smoking before?
   - Yes
   - No

*If you answered “No” go to Q8.
7. In the past 12 months, how many times have you made a quit attempt that lasted at least one day?

8. Which statement best describes how interested you are in quitting smoking?
   - I am not interested in quitting
   - I am a bit interested in quitting
   - I am very interested in quitting

9. What are your intentions regarding quitting? Do you plan to:
   - Quit in the next 30 days
   - Quit in the next 6 months
   - Quit, but not in the next 6 months
   - Never quit
   - Don’t know

10. Are you:
    - Male
    - Female

11. In what year were you born?
    

12. Are you of Aboriginal or Torres Strait Islander origin?
    - Aboriginal
    - Torres Strait Islander
    - Both
    - No
13. What best describes your marital status?

- Married
- De facto or living with a partner
- Separated or divorced
- Never married or single
- Widowed

14. What is the highest education that you have completed?

- Primary school
- High school years 7-10
- High school years 11-12
- TAFE or trade qualification
- University

15. What is your personal income each week (that is, after tax has been taken out)?

- Less than $100 per week
- Between $100 - $199 per week
- Between $200 - $299 per week
- Between $300 - $399 per week
- Between $400 - $499 per week
- More than $500 per week
- Prefer not to answer

THANK YOU!
Hi all. My name is ______. I am from the ______. This is [name] from [name] and we will be running today's discussion.

Today we are here to talk about smoking, including how you feel about the anti-tobacco mass media campaigns and packaging of cigarettes, and the impacts that these types of tobacco control measures have on your tobacco use. The discussion will take about 60 minutes and we welcome everyone's opinion. I will be asking some specific questions to guide us through the discussion today, but you can talk about any aspect of smoking you want.

To start off, I just need to remind you about some parts of the information that you were all provided with before the start of the group today. Firstly, anything you say during this discussion will remain confidential. This discussion today will be audio-taped, however if you wish to delete your comments from the audiotape please see me at the end of this session. Some quotes from today's discussion may be used to illustrate your views; however your name will not be used in any reports arising from the research. You do not have to answer any questions you do not want to, and if you no longer wish to participate at any stage just let me know.

Ok. Before we start it is important to set some basic ground rules which help to ensure everyone has an equal opportunity to participate in the group discussion. As I have said, I will be asking some specific questions today to guide us through our discussion. Sometimes it is easy to get caught up on a particular issue, but if this happens it won't allow sufficient time for all relevant issues to be covered. If this occurs I will suggest we move on to the next issue. Finally, we ask that all comments made as part of the group remain confidential to today's discussions. Are there any questions?

Warm up question

1. The first thing I would like to ask you to do is to introduce yourselves. Just give me a very quick introduction – tell me your name and a little bit about your smoking, [maybe how long you've smoked for; how many cigarettes you smoke per day; how you feel about smoking]. Starting on my left…

Packaging: Brand Preference & Image Association:

2. Some of the things we want to talk about today relate to various aspects of a pack of cigarettes as a product. Is there a brand of cigarettes you prefer?
   - If “YES”:
     o Which one?
Why do you prefer this brand over others? [prompt: colours, logos, pictures, strength, quantity, price, other people]

- If “NO”:
  - Why not?
  - How do you decide which pack to purchase each time?

3. What stands out to you most on a cigarette packet?

**Plain Packaging:**

4. Do you know about plain packaging?
   *Prompt if required:*
   - What do you know about it?
   - What will happen when plain packaging is introduced?

*Hand out models of what plain packaging will look like.*

5. Are these packets different to what you expected? If yes, how?

6. Do you think plain packaging will make you think differently about smoking?
   - Will it alter your smoking in any way?
   - Will it make you think/feel differently about your preferred brand?

**Health Warnings:**

7. Does seeing the health warning labels on cigarette packaging make you think about your own personal health concerns?
   *Prompt if required:*
   - What are these concerns?
   - How does it make you feel about your health and these diseases?

8. Do you think these labels are a good way to encourage smokers to quit?
   *Prompt if required:*
   - Why / why not?

9. Do you think these provide enough information to help you quit?

**Mass Media Anti-Tobacco Campaigns:**

10. What do you think / how do you feel about anti-smoking advertising on television?

11. What ads or elements of ads stand out most to you?

12. What do you do when one of these ads appears on the television?
Play three selected Australian anti-smoking advertisements to the group.

13. Have you seen these ads before?

14. Which of these three ads that you have just seen do you think is the most effective anti-smoking advertisement?
   Prompt if required:
   - Why? What about the ad makes it effective
   - What could the other ads do better?

Health warning message:

15. Health warning messages appear on both cigarette packets and in anti-smoking advertising? Is there ever any warnings or health information that you do not understand or are confused about?

16. Have you ever been prompted to make a quit attempt after seeing one of these health warning messages? If yes, what did you do?

17. What do you do with the information from the health warnings associated with tobacco?
   Prompt if required:
   - Do you know where to go for further information or help?

18. The phone number for Quitline appears on all tobacco packaging and is named in anti-smoking advertising. Have you ever used the Quitline service?
   Prompt if required:
   - Why / Why not
   - Was it helpful / Would you recommend to others
   - What would make you use it?

Conclusion:

Those are the main things I wanted to cover today, and I have really appreciated all the things people have had to say. Are there any things anyone would like to add, or clarify before we finish our discussions?

Thank you again for all of your comments. They have been really useful. I will turn the tape off now.
17. APPENDIX D: Interview materials

17.1 – Ethics approval: interviews

17.2 – Information Statement

17.3 – Consent Form

17.4 – Interview Schedule
17.1 Ethics approval: interviews

HUMAN RESEARCH ETHICS COMMITTEE

Notification of Expedited Approval

To Chief Investigator or Project Supervisor: Associate Professor Billie Bonevski
Cc Co-investigators / Research Students: Mrs Ashleigh Guillaumier
                                                Associate Professor Christine Paul
                                                Professor Catherine d’Este
Re Protocol: Exploring the influence of tobacco price on smoking behaviour and personal budgeting strategies in a socially disadvantaged population
Date: 03-Sep-2012
Reference No: H-2012-0274
Date of Initial Approval: 03-Sep-2012

Thank you for your Response to Conditional Approval (minor amendments) submission to the Human Research Ethics Committee (HREC) seeking approval in relation to the above protocol.

Your submission was considered under Expedited review by the Ethics Administrator.

I am pleased to advise that the decision on your submission is Approved effective 03-Sep-2012.

In approving this protocol, the Human Research Ethics Committee (HREC) is of the opinion that the project complies with the provisions contained in the National Statement on Ethical Conduct in Human Research, 2007, and the requirements within this University relating to human research.

Approval will remain valid subject to the submission, and satisfactory assessment, of annual progress reports. If the approval of an External HREC has been "noted" the approval period is as determined by that HREC.

The full Committee will be asked to ratify this decision at its next scheduled meeting. A formal Certificate of Approval will be available upon request. Your approval number is H-2012-0274.

If the research requires the use of an Information Statement, ensure this number is inserted at the relevant point in the Complaints paragraph prior to distribution to potential participants. You may then proceed with the research.

Conditions of Approval

This approval has been granted subject to you complying with the requirements for Monitoring of Progress, Reporting of Adverse Events, and Variations to the Approved Protocol as detailed below.
PLEASE NOTE:
In the case where the HREC has "noted" the approval of an External HREC, progress reports and reports of adverse events are to be submitted to the External HREC only. In the case of Variations to the approved protocol, or a Renewal of approval, you will apply to the External HREC for approval in the first instance and then Register that approval with the University's HREC.

- **Monitoring of Progress**

Other than above, the University is obliged to monitor the progress of research projects involving human participants to ensure that they are conducted according to the protocol as approved by the HREC. A progress report is required on an annual basis. Continuation of your HREC approval for this project is conditional upon receipt, and satisfactory assessment, of annual progress reports. You will be advised when a report is due.

- **Reporting of Adverse Events**

  7. It is the responsibility of the person **first named on this Approval Advice** to report adverse events.
  8. Adverse events, however minor, must be recorded by the investigator as observed by the investigator or as volunteered by a participant in the research. Full details are to be documented, whether or not the investigator, or his/her deputies, consider the event to be related to the research substance or procedure.
  9. Serious or unforeseen adverse events that occur during the research or within six (6) months of completion of the research, must be reported by the person first named on the Approval Advice to the (HREC) by way of the Adverse Event Report form within 72 hours of the occurrence of the event or the investigator receiving advice of the event.
  10. Serious adverse events are defined as:
      - Causing death, life threatening or serious disability.
      - Causing or prolonging hospitalisation.
      - Overdoses, cancers, congenital abnormalities, tissue damage, whether or not they are judged to be caused by the investigational agent or procedure.
      - Causing psycho-social and/or financial harm. This covers everything from perceived invasion of privacy, breach of confidentiality, or the diminution of social reputation, to the creation of psychological fears and trauma.
      - Any other event which might affect the continued ethical acceptability of the project.

  11. Reports of adverse events must include:
      - Participant's study identification number;
      - date of birth;
      - date of entry into the study;
      - treatment arm (if applicable);
      - date of event;
      - details of event;
      - the investigator's opinion as to whether the event is related to the research procedures; and
      - action taken in response to the event.
12. Adverse events which do not fall within the definition of serious or unexpected, including those reported from other sites involved in the research, are to be reported in detail at the time of the annual progress report to the HREC.

- **Variations to approved protocol**

If you wish to change, or deviate from, the approved protocol, you will need to submit an *Application for Variation to Approved Human Research*. Variations may include, but are not limited to, changes or additions to investigators, study design, study population, number of participants, methods of recruitment, or participant information/consent documentation. **Variations must be approved by the (HREC) before they are implemented** except when registering an approval of a variation from an external HREC which has been designated the lead HREC, in which case you may proceed as soon as you receive an acknowledgement of your registration.

**Linkage of ethics approval to a new Grant**

HREC approvals cannot be assigned to a new grant or award (ie those that were not identified on the application for ethics approval) without confirmation of the approval from the Human Research Ethics Officer on behalf of the HREC.

Best wishes for a successful project.

Professor Allyson Holbrook  
**Chair, Human Research Ethics Committee**

*For communications and enquiries:*

**Human Research Ethics Administration**

Research Services  
Research Integrity Unit  
HA148, Hunter Building  
The University of Newcastle  
Callaghan NSW 2308  
T +61 2 492 18999  
F +61 2 492 17164  
Human-Ethics@newcastle.edu.au

*Linked University of Newcastle administered funding:*

<table>
<thead>
<tr>
<th>Funding body</th>
<th>Funding project title</th>
<th>First named investigator</th>
<th>Grant Ref</th>
</tr>
</thead>
</table>
17.2 Information Statement

INFORMATION SHEET
Tobacco Price Interviews
Document Version 2: 28/08/2012

Thank you for taking part in our computer-based research about tobacco. As you indicated you might be interested in participating in further research in this area, we would now like to invite you to take part in a research project to talk about your thoughts and feelings about the price of cigarettes.

Who is conducting this research?
This research is part of Mrs Ashleigh Guillamier’s studies at the University of Newcastle, supervised by Associate Professor Billie Bonevski, Associate Professor Chris Paul and Professor Cate D’Este.

Who can take part in the research?
People aged over 18 years who are current daily smokers are invited to take part.

What will the research involve?
If you agree to participate, you will be invited to take part in a face-to-face interview to be held onsite at the ANGLICARE Community Care Centre Campbelltown. This interview will take about 1 hour and we will ask about your opinions and experiences with the price of cigarettes. The interviews will be conducted by Mrs Ashleigh Guillamier, and you will be given a $50 Woolworths gift card for your time. The interviews will be recorded on audiotape. Once the interview has finished you will be invited to complete a short assessment on your understanding of health information.

What choice do you have?
Participation in this research is entirely your choice. Only those people who give their informed consent will be included in the project. Whether or not you decide to participate, your decision will not disadvantage you in any way.

If you do decide to participate, you may withdraw from the project at any time without giving a reason, and have the option of withdrawing any data. The interview will be audiotape recorded on the day and later transcribed by a member of the research team. You will be given the opportunity to review and edit the transcript of your interview if you wish.

What will the information collected be used for?
This research will provide information about what people think about some tobacco control policies. The information may be used to develop future tobacco control policies, may be published in health journals and used in presentations, and included in a thesis submitted for Mrs Guillamier’s University studies. While quotes from some discussions may be used to give examples of people’s points of view, individual participants will not be identified in any reports arising from the research. If you would like to receive a summary of the research results please check the appropriate box on the consent form on the day of the interview.
How will your privacy be protected?
We will ensure your privacy is protected. All information we collect is private, and will be kept in locked cabinets that can only be accessed by the researchers. At the end of the study, all paper documents will be stored in locked storage, and electronic information will be stored in password protected files for a minimum of 5 years. We will not use your contact details for anything other than to contact you about this study and will not give your name to anyone outside the researchers involved in this study.

What are the risks and benefits of participating?
By participating in this research you are providing us with information that may assist in the development and targeting of policies to reduce the population smoking rate and better support those people trying to quit. We do not think there are any risks to participating in this research, however if you find any questions to be distressing you may stop the interview at any time. If participating in the interview brings up any personal issues you would like to discuss the following free telephone services may be helpful: Quitline on 13 78 48 or Lifeline on 13 11 14.

What do you need to do to participate?
Please read this information statement and be sure you understand its contents before you consent to participate. You will receive a call from the research team approximately one week after receiving this information statement to discuss the possibility of research participation. Alternatively, you may call Mrs Ashleigh Guillaumier on the number listed below to enrol in the study.

For more information
If you have any questions about participating in the study please contact Mrs Ashleigh Guillaumier on (02) 4033 5711 or by email on Ashleigh.Guillaumier@newcastle.edu.au

Thank you for considering this invitation.

Yours sincerely,

As/Prof. Billie Bonevski
CINSW Research Fellow
School of Medicine & Public Health
Billie.Bonevski@newcastle.edu.au
(02) 4033 5710

As/Prof. Chris Paul
Senior Research Academic
Health Behaviour Research Group
Chris.Paul@newcastle.edu.au
(02) 4042 0693

Prof. Cate D’Este
Director
Centre for Clinical Epidemiology and Biostatistics
Catherine.DEste@newcastle.edu.au
(02) 4042 0517

Mrs Ashleigh Guillaumier
PhD Candidate
School of Medicine & Public Health
Ashleigh.Guillaumier@newcastle.edu.au
(02) 4033 5711

This project has been approved by the University’s Human Research Ethics Committee, Approval No. H-2012-0274 . Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, telephone (02) 4921 6333, email Human-Ethics@newcastle.edu.au
**Consent Form for the Research Project:**

**Tobacco Price Interviews**  
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Document Version [2]; dated [28/08/2012]

I agree to participate in the above research project and give my consent freely.

I understand that the project will be conducted as described in the Information Statement, a copy of which I have retained.

I understand I can withdraw from the project at any time and do not have to give any reason for withdrawing.

I agree that:

- The interview will be audio taped
- I can edit or erase anything I say from the tape
- Anything said in the interview is confidential
- Comments or quotes recorded on the tape may be used in written reports (subject to consent below), however no names or identifying information will be used
- I can withdraw from the interview at any time, without giving a reason
- I have had the opportunity to have questions answered to my satisfaction.

I understand that my personal information will remain confidential to the researchers.

I have had the opportunity to have questions answered to my satisfaction.

I consent to:

<table>
<thead>
<tr>
<th>Participation</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face-to-face interview</td>
<td></td>
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<tr>
<td>Researchers using comments or direct quotes from the audio tapes in written reports and publications. I understand no names or identifying information will be used.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Participate in a health literacy questionnaire</td>
<td>Yes</td>
<td>No</td>
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</table>

I have received the $50 Woolworths Essentials Gift Card as reimbursement: [ ]

Print Name: __________________________________________________________________________

Signature: ___________________________ Date: ____________________________

If you would like to receive a summary of the research results of this project, please provide your mailing details in the Request for Results box provided over the page.
I would like to receive a summary of the research results:

Request for Results
On completion of this research, a summary of results will be made available to those who would like a copy. If you would like to pick up a copy of the please provide your name and address or email address below.

Name____________________________________

Mailing Address________________________________________________________
________________________________________________________________________
________________________________________________________________________

Email_____________________________________________________________
________________________________________________________________________
17.4 Interview Schedule

Hi [participant name]. My name is ______, I am from the University of Newcastle and I will be running today’s interview.

Today I want to talk to you about smoking, including your thoughts about the price of cigarettes, and how the cost of cigarettes affects you. The interview will take about 40 minutes and once we have finished I will ask you to complete a brief assessment on your understanding of health information which will take about 3-5 minutes to complete.

For today’s interview I will be asking some specific questions to guide us through, but you can talk about any aspect of cigarettes and price that you want.

To start off, I just need to remind you about some parts of the information that you were provided with before the interview today. Firstly, anything you say during this discussion will remain confidential. This interview today will be audio-taped, however you may ask for any of your responses or comments to be deleted from the recording. Some quotes from today’s discussion may be used to illustrate your views; however your name will not be used in any reports arising from the research. You do not have to answer any questions you do not want to, and if you no longer wish to participate at any stage just let me know.

Are there any questions you would like to ask me?

**If the participant asks questions regarding the audio-taping:**

“The only thing kept on the digital copy of the audio-taping that relates to you is your participant ID number. The rest of the information will include my initials and the date of the interview. No other information that identifies you is kept with the recording. Digital recordings will be kept on a hard drive in a locked cabinet. Do you have any questions?”

**Switch on audio-tape recorder.**

**When participant is ready to begin:**

I’m now going to ask you about your use of tobacco, as well as your attitudes and experiences with the price. I want to remind you that you are under no obligation to answer these questions. Of course, the more questions you answer honestly, the more useful the information is to me and the project, but you do not have to answer them all.
STATE THE DATE & TIME OF THE INTERVIEW ON THE AUDIO-TAPE RECORDER
Proceed with semi-structured interview focussing on the areas of:

Current tobacco use
1. How often do you currently smoke?
   Prompt:
   - Daily / weekly / less often
   - Number of cigarettes smoked

2. Do you have a regular: brand / variant / pack size?
   - If YES:
     o What one
     o Why do you regularly choose this brand / variant / pack size?
     o What is the price?
     o Has this always been your brand/type/size?
       ▪ Yes – why?
       ▪ No – what other brands/types/sizes have you smoked?
   - If NO:
     o How do you decide on which pack to buy
     o How much do you pay roughly for each pack?
     o Have you always chosen cigarettes this way?

Tobacco expenditure
3. How much do you spend on tobacco products each week?
   a. Prompt: how many packs per week?

4. How do you usually buy your tobacco products?
   a. Carton / single packs
   b. Where do you buy them: grocery store / tobacconist
      i. Why?
      ii. Always the same place?
   c. Do you tend to buy them as part of your grocery shop, or whenever you need them?
      i. Why is that?

5. What proportion/percentage of your income do you think you spend on tobacco?
   - Interviewer to assist with calculation of proportions.
   - Is this something you have thought about or calculated prior to this interview (other than during the survey)?

6. How do you feel about the proportion of your money that you spend on tobacco?

Household budgeting and expenditure
7. When you get paid each week/fortnight, [what do you do with the money / how do you divide up and spend the money]?
   a. Paid work? Centrelink?
   b. Are there standard expenses that you have each pay cycle [food / bills / petrol etc]
   c. Do you budget your money / plan out what needs to be spent on what?
      i. If yes, how do you do that?

8. What else do you spend your money on?
   a. Prompt: Holidays / go out for dinner (takeaway) / new clothes etc.

9. How does tobacco fit into your regular pay/spending cycle?
   a. Do you set aside money to be spent on tobacco
b. *Is tobacco one of the first vs. last things you buy*

10. If the price of tobacco increases, are you more likely to change your smoking or spend less on other things?

*Tobacco prices vs. Household & essential spending*

11. When tobacco prices increase, but people want to keep smoking at the same rate, they often cut down spending in other areas, such as:
   a. Groceries / Bills / Alcohol / Entertainment

   Do you know of these types of things happening?
   Do a lot of people you know smoke?

   *Prompt for different categories…*

   ***Do you know anyone who does this?***

   ***Has there ever been a time where this has happened to you?***

   ***In order to keep smoking, what other things do you do to save money?***

12. Has there been a time when you’ve gone without household essentials, such as food, to buy tobacco?
   a. Has it happened to anyone you know?

*Tobacco prices & changes to smoking behaviour*

13. If the price of cigarettes did increase and you wanted to keep smoking, would you change something else about your smoking to make it more affordable?

   *Prompt:*
   - Cut down? – How do you cut down?
   - Change brands / product type
   - Share smokes with other people

   ***What are some of the other ways that people change their smoking in order to afford it?***

   ***Black market, chop chop – do you know anyone who smokes these? Have you tried them?***

14. In the past when the price of cigarettes has changed, have you ever made these types of changes in your smoking? (cut down, change brands etc.)
   - How long did you stick with those changes?

15. What price would a pack of 25 cigarettes need to get to for you to stop smoking?
   - Why that price?
   - Has this happened before? *(i.e. have you set a price, reached it and then kept smoking?)*
   - What would you be happy to pay?

16. Do you think that increasing the price of cigarettes will help smokers to quit?
   - If “Yes”: in what way?
   - If “No”: why not?
   - Do you think that increasing the price of cigarettes will help you to quit?
     o If “Yes”: in what way?
     o If “No”: why not?
17. Do you think it’s fair to increase the price of cigarettes to help smokers to quit?
   a. Why/why not?

18. Have you ever attempted to quit smoking when the price of cigarettes increased?
   - If “Yes”
     o Was price the only reason you attempted to quit?
     o Were you successful?
     o How long did that last?

19. Do you know anyone else who has quit smoking because the price of cigarettes went up?
   - If “Yes”
     o Who was it (e.g. friend, colleague)? When did they do it? Are they still quit?
     o Was price the only reason they quit?

20. Do you and your friends ever talk about the price of cigarettes?
   - If “Yes”:
     o What do you talk about?
   - What do most people you know think about the price of cigarettes?

Every 10-20 minutes during interview
How are you going? Are you still right to continue with the interview?

If yes:
Continue with Interview

If no:
Would you like to take a break, or would you like to stop altogether? (End interview if requested)

At the end of the interview
Those are the main things I wanted to cover today, and I have really appreciated all the things that you have had to say. Are there any final things that you would like to add, or clarify before we finish our interview?

Now that we have finished the interview, would you like the opportunity to review and edit the recording?

And finally is it still alright that the recording of that interview be used by the research team, transcribed and analysed to identify the main themes and issues raised?

If no:
OK. Thank you for participating and I’ll erase the recording of this interview straight away.

If yes:
Thank you for participating and I will turn the tape off now.