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Citation for published version:

Mitchell, D, Moodie, C & Bauld, L 2019, 'Smokers' perceptions of cigarette packaging with audio warning messages: A focus group study in Scotland', *Nicotine and Tobacco Research*.
<https://doi.org/10.1093/ntr/ntz075>

Digital Object Identifier (DOI):

[10.1093/ntr/ntz075](https://doi.org/10.1093/ntr/ntz075)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Peer reviewed version

Published In:

Nicotine and Tobacco Research

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Title: Smokers' perceptions of cigarette packaging with audio warning messages: A focus group study in Scotland

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Keywords: Audio health warnings, Smoking Cessation, Public Health

ABSTRACT

Aims: The use of audio pack cues or messages is a recent trend in packaging design. There is scope to use audio technology to communicate health and cessation messages via cigarette packaging. We explored how smokers responded to cigarette packs which played audio health messages.

Methods: Twenty focus groups were conducted in Scotland in 2015 with smokers ($n=120$) segmented by age (16-17, 18-24, 25-35, 36-50, >50), gender and social grade. Perceptions of cigarette packs which played audio warnings were explored, with four messages used: (1) a cessation message with a quitline number, (2) mortality message, (3) fertility message, and (4) message about ageing skin.

Results: Audio warnings were thought to increase message impact, particularly among younger smokers, as they would be hard to ignore or avoid, and repetition may lead to the messages being memorised. The warnings were considered annoying or embarrassing, and participants suggested they may discard the packs and use alternative storage. Some participants suggested that the audio warnings were off-putting and may alter their smoking behaviour, with the mortality message deemed most effective and was considered relatable and felt personal. Older smokers were least likely to believe that audio warnings would affect their smoking behaviour, although some thought that they may enhance cessation attempts among smokers seeking to quit, and could deter new or potential smokers, for example young people.

Conclusions: Cigarette packs with audio messaging may have a role to play, now or in the future, as a novel way of communicating health and cessation information.

IMPLICATIONS

There is a lack of research exploring smokers' perceptions of cigarette packs which play audio health messages. This focus group study provides an understanding of smokers' immediate responses to cigarette packs which played a short health message when opened. Smokers generally viewed them as annoying or embarrassing, and some suggested the use of alternative storage. Audio warnings were thought to increase message salience, memorability and impact, for younger smokers in particular, and some suggested that they be off-putting for themselves or others.

Accepted Manuscript

INTRODUCTION

Packaging is an established marketing tool which has multiple roles, from communicating product information through to motivating consumer action.^{1,2} Manufacturers of fast moving consumer goods place great emphasis on packaging innovation to generate interest, differentiate brands, and create a competitive advantage.³ Although marketers have typically focused on pack shape, colour, and texture to create multisensory appeal, there has been an increased use of audio cues, particularly in the food and drinks sector.⁴ Auditory cues are considered to have the ability to shape product perceptions.⁵ In one of the earliest examples, from over 25 years ago, consumers had the chance to win a prize if they found a ‘talking’ beer can of Coors Light, which played an audio message when opened.⁶ For the 2010 FIFA World Cup, supermarket chain Tesco released a sandwich pack which played a football anthem when opened.⁷ More recently, cheese brand Dairylea launched packaging which mimicked the sound of a cow when opened.⁸ Other examples include birthday cards that play music every time they are opened and children’s toys that contain pre-recorded or personalised messages. Tobacco companies have also used audio pack cues to extend the sensory experience and influence brand perceptions and behaviour. For instance, packs of Marlboro Bright Leaf (Philip Morris International) and Lucky Strike Red and Blue (British American Tobacco) make a distinctive ‘clicking’ sound when closed.⁹

Audio messages have also been used for health promotion, albeit not to the same extent as for brand promotion. For example, pharmaceutical packaging has been designed to allow pharmacy staff to record verbal dosage instructions which can be downloaded by visually impaired consumers using pen readers.¹⁰ Tobacco control has recognised the potential of tobacco packaging to influence smoking-related attitudes and behaviours, with over 110 countries requiring pictorial health warnings on packs¹¹ and six countries having

now fully implemented standardised packaging.^{12,13} Given that tobacco companies have identified audio cues as a further opportunity to use packaging to influence consumer perceptions, research exploring the potential to use audio cues to communicate health messaging appears warranted.

Only two studies have explored consumer response to tobacco packaging with audio warning messages. Moodie et al¹⁴ conducted focus groups with young female smokers (16-24 years) exploring several novel packaging measures, including cigarette packs which, when opened, played a cessation message with a quitline number or a message about fertility. Participants considered packs with audio warnings annoying, and suggested that they would remove the device or discard the packs and use alternative storage (e.g. a cigarette tin). Some participants suggested that they would feel embarrassed as a result of the audio warning and avoid using the packs in public. It was also suggested that the audio warnings may encourage smokers to quit and deter non-smokers from starting.¹⁴ In the second study, interviews were conducted with academic and non-academic marketing and packaging experts to explore novel packaging-related measures, including cigarette packs with audio warnings. Marketing experts thought that the audio warnings would be feasible, with the cost per pack minimal when mass produced. Although some thought that audio packs would be irritating, and may therefore be discarded and alternative storage used, they also thought that they may encourage smokers to think about their behaviour and could possibly discourage uptake. Concerning the content and style of health messages, marketing experts suggested that messages focused on the health effects in a ‘chilling tone’, or playing on the insecurities of being a smoker, would have the most effect.¹⁵

Data from the Scottish Health Survey¹⁶ shows that in 2015 21% of adults in Scotland reported smoking (20% women, 22% men), with smoking rates highest among 25-54 year olds. Notably, smoking rates in the most deprived areas in Scotland were 35%, opposed to the

11% in the least deprived areas,¹⁷ where educational attainment is often lower, and as a consequence, literacy levels may be poorer.¹⁸ As such, an audio message to communicate health related information may be better understood by those in the lower social grade, who are a key group to consider.

We build upon past research with young female smokers by examining how a more diverse sample of smokers respond to cigarette packs that play audio health messages.

METHODS

Design and sample

Twenty focus groups were conducted with smokers ($n=120$) in Glasgow and Edinburgh (Scotland). Data were collected as part of a study exploring responses to tobacco packaging, pack inserts promoting cessation, and cigarette design.^{19,20} Groups were conducted January to March 2015, with six in Edinburgh and 14 in Glasgow. Groups were segmented by age (16–17, 18–24, 25–35, 36–50, over 50), gender, and social grade (ABC1 and C2DE) (Table 1). Social grade was determined via the National Readership Survey (NRS), an established classification system in the United Kingdom (UK), based on the chief income earner within the household. Grades ABC1 typically signify middle-class groups, and C2DE signify working-class.

Market researchers recruited participants using convenience sampling in Glasgow and Edinburgh. Market researchers were instructed to intercept potential participants in the street and explain that the study was concerned with smokers' perceptions of tobacco packaging and warnings. Information about age, social grade and smoking behaviour was captured via a recruitment questionnaire. To be eligible to take part, participants needed to be in one of the gender, age and social grade groups and have smoked cigarettes at least once a week. Response rates were not recorded.

Table 1 here

Materials

Four audio messages were pre-recorded on to sound devices and included within cigarette packs. At the time of the study, cigarette packs in Scotland were required to display text only health warnings, which covered 43% of the front of packs, and pictorial warnings covering 53% of the pack reverse. The message themes were chosen to reflect those used on warnings on cigarette packs: (1) A cessation message with quitline number: “Get help to quit, call 0800 0224 332 for more information on the options”; (2) A testimonial style mortality message: “Each cigarette increases your risk of dying. Stay alive for those that care about you, stop smoking”; (3) A fertility message: “Smoking reduces fertility. If you are planning to have a child now or in the future smoking can reduce your chance of conception by up to 70%”; and (4) An ageing skin message: “Smoking ages the skin and causes wrinkles. Quit smoking and avoid your skin prematurely ageing”. The second, testimonial style message was presented in a serious tone by an elderly man with a hoarse voice, with the other messages presented in an informative tone and voiced by middle-aged women.

Procedure

At recruitment, participants were given an information sheet explaining what the study was about and that it would be audio recorded, anonymous and confidential, and that responding to questions was optional and data would be stored safely. Participants were also asked to complete a consent form if they wished to be involved. Each group took place in a venue suitable for holding a group discussion (e.g. a hotel function room or a community centre) and convenient for participants. At the start of each group, participants were reminded that

the study was confidential and anonymous, and their right to withdraw and avoid questions if they did not want to answer them. Groups were moderated by one or two experienced researchers employed by the University of Stirling.

A discussion guide was used to ensure that common questions were asked across groups, but otherwise, participants were allowed to lead the discussion on audio warning messages, with the interviewer(s) following up on comments made. Each group was shown two fully-branded cigarette packs (Camel Yellow, Marlboro Gold), each containing 20 cigarettes and playing an audio message when the lid was opened. The messages were intended to be relevant to the gender and age of the group. For instance, the fertility message was used for young women (see Table 2 for the messages shown to each group). Participants were shown one pack at a time and it was explained that when the lid is opened it plays an audio message. They were asked about their initial impressions of this. They were also asked how they thought they would react if they heard the message when they opened a pack of cigarettes, whether it would have an impact on how they feel about smoking, whether they are helpful, off-putting or annoying, whether they would engage with the message, and whether they considered there to be any benefits to having an audio message.

Each group typically lasted 90 minutes and at the end, participants were debriefed about the study and received a £25 incentive for taking part. Ethical approval was obtained from the Ethics Committee of the School of Management at the University of Stirling.

Table 2 here

Analysis

All groups were transcribed verbatim, with the transcripts checked against the audio files to ensure accuracy. Transcripts were analysed with NVivo version 11, using an iterative

thematic approach. A thematic coding framework was established, where the content was categorised according to inductively developed codes pertaining to specific quotations and relevant text. The initial themes were developed by two members of the research team (DM and CM). Matrix coding was used in to identify any common relationships or differences based on gender, age and social grade. Each transcript was then reassessed by DM to identify any relevant quotes that were missed but could add to the five main themes identified: Initial response; Salience; Message style; Personal impact; Impact on others.

RESULTS

Initial response

The audio warnings were initially viewed by some as ridiculous, a gimmick or a novelty, e.g. *'It's a novelty; it's a joke shop type of thing'* (25-35 Male, ABC1). Several participants also mentioned that the packs were, or would become, annoying.

That would be so annoying (16-17 Male, C2DE)

This is quite annoying but, like, to me, if I was going try and turn it off, I would still be hearing the message every single time... So it would be more impactful (18-24 Male, ABC1)

Others described the audio warnings as scary, mortifying and frightening, mostly among females, with some males describing them as shocking.

That is so scary (25-35 Female, ABC1)

That just kind of gave me a bit of a shock factor more than anything (16-17 Male, C2DE)

Saliency

The audio warnings were typically considered unavoidable, particularly among 16-35 year olds and those in the higher social grade (ABC1). Several participants suggested that if the messages played every time the pack was opened, it would become 'memorised', while others said that it would be easily ignored if it played only once.

You're actually hearing it. Like, you have a choice whether to bypass what's written on the packet, cause I usually do, but with the audio thing, if that is playing every time you open the packet then... you can't stop it (16-17 Female, ABC1)

It's shoving it down your throat really; you would probably end up memorising it by the end of the packet (18-24 Male, C2DE)

Several participants suggested that they would empty the cigarettes out of the pack to avoid the audio warning message, mostly women and those in the lower social grade (C2DE). Alternative storage such as tins and old packs were suggested as potential substitutes for these packs, generally in the higher social grade. Removing or breaking the audio device, or switching to hand rolling tobacco, were also discussed as means of avoiding audio warnings, mostly among males. Some participants commented that they would avoid buying the packs completely.

If they had things like that, people would just buy the fags and having their own personal cigarette packets (50+ Male, C2DE)

Yeah, or just put them in a tin or something (18-24 Male, ABC1)

No I wouldn't touch them, I wouldn't buy them (18-24 Male, C2DE)

Message style

The testimonial style message (*Each cigarette increases your risk of dying. Stay alive for those that care about you, stop smoking*) was commonly considered the most effective, particularly among men, given it was viewed as genuine and relatable, with the person voicing the message perceived to be someone suffering from a smoking-related illness that was trying to reach out to warn others. For some the message reminded them of members of their own family, e.g. *'Ah think that was ma Ma [my mum] actually'* (25-35 Male, C2DE).

When it personalises it, like, to that, so you actually think it's, like, a person rather than, like, an anonymous voice, like, reading out a number (18-24 Male ABC1)

That's quite effective cos then in your head you've got, like, a picture of some guy who's... and got, like, lung cancer or something, like, giving the message (18-24 Male, ABC1)

Participants proposed other possible messages. For instance, several thought that a smoker's cough would be effective in emphasising the damage that smoking can cause, with others suggesting messages that highlight the benefits of quitting and the financial costs associated

with smoking. The use of a child's voice was also suggested among 50+ females in the lower social grade.

More positive sort of facts... like, how much you could save, sort of stuff like that (25-35 M C2DE)

If it was a child, that would be far more effective... Phone numbers don't mean anything tae [to] me (50+ Female, C2DE)

Personal impact

Younger participants, particularly 16-24 year olds, were most likely to suggest that the packs would have an impact upon their behaviour, generally as a result of smoking around other people and concern about the opinions of others.

I'd definitely be less likely to smoke – I couldn't open that in front of people (16-17 Female, C2DE)

Yeah I'd wait till I was somewhere no one was around and if it was just once then that's alright but if it was every time... that would have a massive effect on me (16-17 Female, ABC1)

Among young women (16-35 years) the audio warnings were considered embarrassing, with some also mentioning that they would make them feel self-conscious, and were off-putting.

It would really affect me as well. I'd be quite embarrassed of that (25-35 Female, ABC1)

Cos then you would actually feel, like, self-conscious about doing it [Smoking] when people are around, or even with that message you'd still feel self-conscious (18-24 Male, ABC1)

If that was, like, sort of standard, that would put me off smoking (18-24 Male, ABC1)

Impact on others

The potential impact of the audio warnings on other people was most frequently commented on within the lower social grade groups. The packs were thought to be potentially effective in deterring newer smokers from continuing to smoke and non-smokers from starting. It was also suggested that the packs may be able to help smokers thinking about quitting, by acting as a prompt.

I think for people who don't smoke it would be really, really off-putting and annoying... and for new smokers as well (16-17 Female, C2DE)

Maybe people like that, that have maybe been thinking about it for a while but they just cannae [cannot], they've no got the sort of willpower or whatever. And that might just sort of maybe help them along (25-35 Male, C2DE)

Discussion

Audio messages have been used across a number of product categories to communicate product information, engage consumers and extend the sensory brand experience. Similar technology could be used in cigarette packaging to communicate health-related information to encourage cessation and dissuade smoking uptake, particularly when mass produced.¹⁵

We found that cigarette packs playing audio messages were frequently considered annoying and embarrassing, with participants indicating that they would remove the cigarettes from the pack or attempt to remove the sound device. There was a similar response in previous research with young female smokers,¹⁴ suggesting that these reactions may be consistent across different groups of smokers. That the audio messages were considered salient, especially among younger participants, and unavoidable, may help explain the desire to escape from a message that may be uncomfortable to hear. However, if participants did react by using alternative storage this would result in the audio and on-pack messages being missed, which would be detrimental to public health. Naturalistic research would help understand whether participants would actually attempt to disable the sound device or use alternative containers.²¹

Regarding the potential impact on their own behaviour, older participants were the least likely to believe that the audio warnings would impact their smoking behaviour, however, they did believe that they would put off newer smokers and deter non-smokers from starting. In contrast, younger participants suggested that the audio warnings would impact their behaviour, by being embarrassing and causing them to feel self-conscious, particularly when around other people. This reaction suggest that audio warning messages may have the potential to shape normative beliefs, particularly among young people and their perception of how others view them and their smoking behaviour.²²

With regards to messaging style, the testimonial style mortality message was considered the most powerful and, for some, it reminded them of family members. Several countries have introduced testimonial health warnings on packs,^{8,23,24} which feature the experience of a person and how their own health, or that of someone close to them, has been affected by the use of tobacco.²⁴ The health communication literature suggests that by using the experience of a person who is suffering as a result of a particular behaviour, this can increase message credibility and believability.²⁵ Testimonial warnings may also be able to form a stronger connection with smokers by providing support that may not be gained from warnings that only communicate factual information, as well as increase message engagement and motivation to quit.^{26,27} A testimonial warning used on packs in Canada features Barb Tarbox (who following her diagnosis with terminal lung cancer decided to share her story), showed an image of her in the late stages of her illness and read: ‘This is what dying of lung cancer looks like. Barb Tarbox died at 42 of lung cancer caused by cigarettes’.^{28,29} The testimonial style message used in this study did not feature a named person, but it did elicit a strong response as many people viewed the person speaking as a smoker advising them not to make the mistakes they did.

Our study extends the previous two studies to have explored audio health messages on cigarette packs, one with marketing experts and the other with young women smokers, with a more diverse sample, thus providing insight into how responses differ by gender, age and social grade. The study does have a number of limitations however. Although the sample included young, middle aged and older male and female smokers from different socioeconomic backgrounds, the opinions expressed are not necessarily representative of the general population. In addition, reactions to the packs could be a result of their novelty. The results are subject to social desirability bias, whereby participants may have given answers

that they feel would be viewed favourably by the researchers. The perceptions of smokers on the impact on non-smokers may also have limited validity.

Given that packaging measures are intended not only to encourage cessation but also to prevent uptake, future research with those under the age of 16, and non-smokers, exploring the effect of audio warnings on their attitudes towards smoking would be of value. Plain packaging has been fully-implemented in the UK since this study was conducted and research exploring audio health messaging in the UK, or other markets with plain packaging, would be of interest. While we used a qualitative design, which is appropriate given the lack of research in this area, it would be possible to gauge response to audio messages using other designs, such as online surveys, which researchers may wish to consider. Researchers should explore different messages, particularly testimonial style messages, and messaging tailored specifically towards adolescents, whether they have tried smoking or not.

Acknowledgements: We would like to thank Dr Richard Purves, Ms Jennifer McKell and Ms Fiona Dobbie for helping conduct the groups.

Funding: Funding was provided by Cancer Research UK (A16943).

Declaration of Interests: None declared.

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Table 1: Sample and demographic characteristics

Group	Age group	Gender	Social grade	Number in group
1	16-17	Female	ABC1	7
2	18-24	Female	C2DE	7
3	25-35	Female	ABC1	6
4	36-50	Female	C2DE	6
5	25-35	Female	C2DE	6
6	36-50	Female	ABC1	5
7	18-24	Female	ABC1	5
8	16-17	Female	C2DE	7
9	36-50	Male	ABC1	6
10	50+	Female	C2DE	7
11	36-50	Male	C2DE	5
12	50+	Male	C2DE	6
13	50+	Female	ABC1	6
14	50+	Male	ABC1	7
15	25-35	Male	C2DE	6
16	18-24	Male	ABC1	7
17	16-17	Male	C2DE	6
18	18-24	Male	C2DE	5
19	16-17	Male	ABC1	5
20	25-35	Male	ABC1	5

Table 2: Messages shown to each group

Message style	Message used	Group shown to
Cessation message	Get help to quit, call 0800 0224 332 for more information on the options	16-17-year-old males and females; 36-50 males and females, 50+ males and females
Testimonial message	Each cigarette increases your risk of dying. Stay alive for those that care about you, stop smoking	16-17 males, 25-35 females, 36-50 males, 50+ males and females
Fertility message	Smoking reduces fertility. If you are planning to have a child now or in the future smoking can reduce your chance of conception by up to 70%	16-17, 18-24, 25-35-year-old females
Aging skin message	Smoking ages the skin and causes wrinkles. Quit smoking and avoid your skin prematurely ageing	16-17, 18-24, 36-50-year-old females