

## The power of product innovation: Smokers' perceptions of capsule cigarettes

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### Abstract

**Introduction:** Since being brought to market in 2007, cigarettes with capsules in the filter that can be burst to change the flavour have had remarkable global success, highlighting the importance of product innovation for tobacco companies. Very few studies have explored how these products are perceived by smokers however. This paper sought to address this gap by exploring smokers' awareness of cigarettes with one or two flavour-changing capsules in the filter and the appeal of these products.

**Methods:** Twenty focus groups were conducted in Glasgow and Edinburgh in 2015 with current smokers (N=120), segmented by age (16-17, 18-24, 25-35, 36-50, >50), gender and social grade. **Results:** Awareness, use and appeal of capsule cigarettes was greater among younger adults (16-35 years), who showed most interest in these products. Those who perceived capsules positively mentioned multiple benefits: the ability to burst the capsule, convenience of being able to share cigarettes among menthol and non-menthol smokers, better taste, fresher breath, reduced smell and greater discretion. It was suggested that capsule cigarettes, particularly the double capsule cigarette (which had two differently flavoured capsules in the filter), would encourage non-smokers to experiment with smoking and discourage smokers from quitting. **Conclusions:** The findings offer some reasons behind the global growth of the capsule cigarette segment.

### Implications

Cigarettes with flavour-changing capsules in the filter have been one of the most successful product innovations of the last decade for tobacco companies. They have received very little academic attention however. Employing focus groups with 120 smokers aged 16 and over, we found that capsule cigarettes held most appeal to, and were considered to be targeted at, younger people, with it suggested that these products would encourage initiation and discourage cessation. This study provides some understanding of how these products are viewed by smokers.

## **Introduction**

Cigarettes with one or two capsules in the filter which can be compressed to change the flavour, typically to menthol (though myriad flavours are used), were introduced in Japan in 2007. Since then, they have experienced phenomenal global growth, with 64 billion sticks sold in 2015.<sup>1</sup> In the UK, for instance, approximately one in ten cigarettes sold in 2016 contained flavour capsules, despite only being introduced to market in December 2011.<sup>2</sup> This growth has been even greater in some Latin American countries.<sup>3</sup>

The novelty of capsule cigarettes may help to increase their appeal to consumers, particularly younger people.<sup>4</sup> These products are also considered to have multisensory appeal given the tactile response to bursting the capsule, the sound accompanying the capsule popping, and the resultant change in taste and aroma.<sup>5</sup> That smokers can alter the sensory experience at their discretion was considered desirable in an early patent for these products,<sup>6</sup> with this interactivity and the ability to customise the smoking experience considered a key reason for growth.<sup>5</sup>

Surprisingly few studies have explored use of these products.<sup>7-10</sup> In the Australian School Students Alcohol and Drug Survey with 12-17 year olds, more than half (51.8%) of past-month smokers reported having used capsule cigarettes, more likely females than males. Past-month smokers were more likely to report having used them six or more times (22.5%) rather than two-five times (17.2%) or just once (12.1%).<sup>7</sup> A qualitative study with 12-24 female non-smokers and occasional smokers in Scotland found that a capsule cigarette created significant interest, being considered novel, cool, high-tech and appealing to children.<sup>8</sup> A survey with 11-16 year old secondary school students in Mexico found that packs of capsule cigarettes were rated as more attractive than packs of non-capsule cigarettes, with greater interest in trying the capsule cigarettes.<sup>9</sup> Focus groups with 18–24 year old menthol smokers in the US found that many participants had tried Camel Crush (a capsule cigarette), which was considered fun and attractive for newer smokers, with the act of crushing the capsule viewed as entertaining and a perceived reason for their popularity.<sup>10</sup> An online survey with adult smokers (18-64 years) in the US, Mexico and Australia, found that preference for flavour capsules was much higher among younger than older adults in Australia and the US, and those who smoked capsule cigarettes perceived greater stylishness, taste and relatively lower harm for their brand compared to those who smoked non-capsule cigarettes.<sup>11</sup>

Given the dearth of research exploring capsule cigarettes, particularly qualitative research, we sought to understand what awareness smokers have of capsule cigarettes and how appealing they are to them and others.

## **Methods**

### **Design and sample**

Twenty focus groups (N=120) were conducted between February-April 2015 with smokers, defined as smoking at least one cigarette per week, in Glasgow and Edinburgh (Scotland). Participants were recruited by market researchers using purposive sampling. Market researchers intercepted potential participants in the street, explained that the study was concerned with smokers' perceptions of tobacco packaging and cigarette design, and used a recruitment questionnaire to capture information about age and smoking behaviour, and determine social grade. Participants were segmented by gender, age (16-17, 18–24, 25-35, 36-50, over 50) and social grade: ABC1 (professional, managerial and non-manual occupations) and

C2DE (manual and unskilled occupations and the long-term unemployed), see Table 1. Social grade was determined by the occupation of the chief income earner within the household using the National Readership Survey, an established classification system in the UK.<sup>12</sup>

**Table 1:** Demographic characteristics of, and number within, each group

<b>Group number</b>	<b>Age group</b>	<b>Gender</b>	<b>Social grade</b>	<b>Number in group</b>
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

### **Procedure**

Groups were moderated by one or two researchers, using a semi-structured discussion guide to explore perceptions of pack and cigarette design, and digitally recorded. Participants were given a number of cigarettes, including two capsule cigarettes (single capsule and double capsule), and asked if they were aware of capsule cigarettes, whether they found these products appealing and, if so, why. Consent was obtained prior to study onset, with participants informed that the study was anonymous, confidential and voluntary. Participants were given £25 for their time and to cover travel costs. The study received ethical approval from the School of Management ethics committee (University of Stirling).

### **Analysis**

The groups were transcribed verbatim and checked for accuracy. The data was analysed using thematic analysis.<sup>13</sup> Two members of the research team (AF, CM) independently read the transcripts several times to familiarise themselves with the content, and through subsequent discussion developed a coding frame to characterise this content. Transcripts were then systematically coded using an iterative approach, facilitated by qualitative software analysis NVivo11. Coded themes were then used as the categories for analysis which were interpreted and discussed among the wider research team in light of the research aims and relevant literature. Themes were also compared and contrasted between different groups of participants.

## Results

Four themes emerged from the data: Awareness and use; Appeal; Harm; and Perceived impact. These themes are common in research exploring consumer perceptions of cigarette design and packaging<sup>8,14,15</sup> and reflect the sequence of impact that capsule cigarettes may have on attitudes and behaviours, starting with awareness of their existence and continuing with both positive and negative associations and attributions that could lead people to consume this product or not. Age was an important factor across themes, in contrast to gender and social grade.

### Awareness and use

Awareness and use of capsules was greater among younger adults (16-35 years), who were most interested in these products. Older adults (50+) were more likely to question their purpose, view them as a gimmick, consider them most relevant to menthol smokers, and associate them with e-cigarettes due to the potential for different flavours.

### Appeal

Age featured prominently in the appeal of capsules, with the general perception that they held most appeal for young people. Reasons included the fact that they were viewed as novel, cool, innovative, fashionable and fun; something new that young people would be keen to experiment with.

*Incredible, that is really cool technology (18-24 Female, ABC1)*

*It's a bit like a designer cigarette isn't it... it's more dynamic as well, so it's a kind of young person's cigarette (36-50 Male, ABC1)*

Being able to choose if and when to burst the capsule was part of their appeal, as was the ability to share it with others (particularly between menthol and non-menthol smokers), especially among young females.

*But that's the point of them... like, for talking sakes my man smokes regular and I'm smoking menthol so he could just light up a fag and it's normal and I'm bursting the ball so it means you've got the two in the one (18-24 Female, C2DE)*

That they do not taste of traditional cigarettes and allow for fresher breath, simply by bursting the capsule, was perceived to make smoking more pleasant and thought to appeal to young people and those just starting to smoke.

*I think it's glamourising for younger folk that, maybe, say, don't like the taste of smoke but they want to look, 'Oh, I'm cool, I'm smoking' (36-50 Male, C2DE)*

*Loads of people that I know that do smoke them they'll smoke a normal cigarette and then just before they get to the end, they'll click it to try and make their breath smell better (25-35 Female, ABC1)*

*It's kind of like a starter cigarette as well, if you're smoking and it's feeling a bit rough, I'll make it menthol and that's a bit easier (36-50 Male, ABC1)*

Opinion among older adults regarding taste was mixed. On one hand were those opposed to different flavours because they enjoyed the taste of traditional cigarettes, but on the other were those who were attracted to alternative flavours because they could mask the taste of traditional cigarettes.

*I don't like the taste of cigarettes and I think that would appeal to me (50+ Female, C2DE)*

Linked to this was the perception that capsules, particularly double capsules, were similar to, or imitating, e-cigarettes, because of the multiple flavours offered.

*What they are doing is with that, is they're trying to cash in on the e-stuff – the flavoured tobacco. They are trying to put that into a cigarette (50+ Male, C2DE)*

The final element of appeal was concealment, which was especially relevant to young people smoking in school.

*I used to smoke them more at school because the smell is less than if you smoke a normal cigarette. You are less likely to get caught smoking (16-17 Female, C2DE)*

### **Harm**

Participants were not explicitly asked to comment on the perceived harm of capsule cigarettes, which was seldom discussed in groups. Where it was, discussion indicated some confusion about the harmfulness of capsule cigarettes in comparison to traditional cigarettes, which was generally related to mixed perceptions of menthol. One view was that capsules would be less harmful because they contain menthol, whereas others thought they could be more harmful because menthol was perceived to open up the airways and allow more toxins in the lungs. The final view was that there would be no difference in terms of harm.

### **Perceived impact**

Among younger female groups in particular, the various appeal factors previously discussed were thought to increase the potential of capsule cigarettes, especially double capsules, to encourage non-smokers to experiment, smokers to consume more, and to discourage attempts to quit.

*It would encourage non-smokers (16-17 Female, ABC1)*

*That's to encourage you to smoke more (25-34 Female, C2DE)*

*Yum. That is not going to help me quit (16-17 Female, C2DE)*

### **Discussion**

Capsule cigarettes were viewed as an innovative and cool technology, considered appealing by, and targeted at, younger people in particular. This appeal was related to

multiple factors, such as the ability to burst the capsule, allowing for perceptions of a better taste, fresher breath, greater discretion, and the opportunity to share cigarettes. While capsule cigarettes in the UK typically contain menthol, which is often associated with reduced harm,<sup>16</sup> harm did not appear to drive interest in these products. Indeed, harm was seldom discussed within groups and when it was there was no consensus about whether capsules were more, equally or less harmful than regular cigarettes. This is similar to findings from another qualitative study<sup>8</sup> but contrasts with survey research, where those who smoked capsule cigarettes were more likely to perceive their brand as less harmful than those who did not.<sup>10</sup> It may be that perceptions that capsules can reduce risk are associated with use. Nevertheless, our findings are generally consistent with industry reports that factors such as innovation, interactivity and personalisation are the greatest drivers of growth.<sup>5</sup>

It was suggested, particularly among younger women, that capsule cigarettes, especially double capsules, may encourage non-smokers to try smoking and discourage smokers from quitting. This idea of capsules being a cigarette for new smokers ties in with industry documents that suggest that product modifications increase appeal among starter smokers.<sup>17</sup> It is also consistent with research in the US, with young adult menthol smokers suggesting that capsule cigarettes would attract beginners,<sup>10</sup> and research in Mexico, with adolescents found to be more interested in trying cigarettes with capsules than without them.<sup>9</sup> With innovation fundamental to value growth for tobacco companies and younger people most receptive to such innovation,<sup>18</sup> the capsule segment has been a welcome success story for tobacco companies.

Whether this continues to be the case is contingent upon the action of governments. Importantly, guidelines recommending that countries regulate all product design features that increase the attractiveness of tobacco products, such as the use of flavour capsules, were adopted at the seventh Conference of Parties for the Framework Convention on Tobacco Control in November 2016.<sup>19</sup> While these guidelines are non-binding, they are likely to encourage regulators to ban these products. The European Commission has already done so, with the revised Tobacco Products Directive<sup>20</sup> banning capsule cigarettes across all 28 European Union member countries by 2020.

Interestingly, capsule cigarettes were likened to e-cigarettes because of the possibility of different flavours. The greatest likeness between these products concerns their success over the last decade, with perhaps the greatest difference the fact that capsule cigarettes have been almost completely overlooked by public health, as highlighted by the lack of research on these products. While there has been division with regards to e-cigarettes,<sup>21</sup> there is agreement about the dangers of combustible tobacco products. That a cigarette that has strong appeal to young people and puts the 'fun' into combustibles has received so little attention suggests that public health may have been somewhat blindsided by e-cigarettes.

In terms of limitations, while focus groups are an appropriate means of exploring consumer reactions to new ideas or products, and are routinely used in tobacco companies' market research,<sup>22</sup> they lack generalisability, despite the relatively large sample employed in this study. In terms of future research, given that it was suggested within the groups that capsules cigarettes may encourage smoking initiation, research exploring whether these products are associated with uptake of smoking would be of significant value.

It is clear from industry documents that cigarette design is used to increase appeal to specific target groups and help boost sales and market share.<sup>15</sup> Filter

innovation allows tobacco companies to introduce new products that are able to generate consumer interest, with their annual reports noting that capsules have been a significant contributor to the growth of particular brands.<sup>23,24</sup> Our study suggests that this consumer interest appears to be primarily driven by younger people.

**Funding**

Funding was provided by Cancer Research UK.

**Declaration of Interests**

*None declared.*

## References

1. Rossell S. Ready to bloom. *Tob J International* 2017;3:42-45.
2. Walker G. Keep calm and carry on. *Convenience Store* 2016;17 June:43-50.
3. Thrasher JF, Islam F, Barnoya J, Mejia R, Valenzuela MT, Chaloupka FJ. Market share for flavour capsule cigarettes is quickly growing, especially in Latin America. *Tob Control* (in press). doi: org/10.1136/tobaccocontrol-2016-053030
4. German Cancer Research Center. *Menthol capsules in cigarette filters – Increasing the attractiveness of a harmful product*. Heidelberg, Germany: German Cancer Research Center; 2012.
5. Meredith P. Back to the future – how patents have influenced filter innovation. *Tob J International* 2015;1:75-78.
6. Dube MF, Smith KW, Barnes VB. Filtered cigarette incorporating a breakable capsule. US Patent number 7836895, R. J. Reynolds Tobacco Company (Winston-Salem, NC), Application No.10/600712, filed on 23 June 2003, granted on 23 Nov 2010.  
<https://docs.google.com/viewer?url=patentimages.storage.googleapis.com/pdfs/US7984719.pdf>
7. White V, Williams T. *Australian secondary school students' use of tobacco in 2014*. Centre for Behavioural Research in Cancer Cancer Council Victoria.  
[www.nationaldrugstrategy.gov.au/internet/drugstrategy/Publishing.nsf/content/BCBF6B2C638E1202CA257ACD0020E35C/\\$File/Tobacco%20Report%202014.PDF](http://www.nationaldrugstrategy.gov.au/internet/drugstrategy/Publishing.nsf/content/BCBF6B2C638E1202CA257ACD0020E35C/$File/Tobacco%20Report%202014.PDF)
8. Moodie C, Ford A, Mackintosh AM, Purves R. Are all cigarettes just the same? Female's perceptions of slim, coloured, aromatised and capsule cigarettes. *Health Educ Res* 2015;30:1-12. doi: org/10.1093/her/cyu063
9. Abad-Vivero EN, Thrasher JF, Arillo-Santillán E, *et al*. Recall, appeal and willingness to try cigarettes with flavour capsules: Assessing the impact of a tobacco product innovation among early adolescents. *Tob Control* 2016;25:e113-e119. doi: org/10.1136/tobaccocontrol-2015-052805
10. Wackowski O, Evans KR, Harrell MB, *et al*. In their own words: Young adults' menthol cigarette initiation, perceptions, experiences and regulation perspectives. *Nic Tob Res*, in press. doi: 10.1093/ntr/ntx048
11. Thrasher JF, Abad-Vivero EN, Moodie C, *et al*. Cigarette brands with flavour capsules in the filter: trends in use and brand perceptions among smokers in the USA, Mexico and Australia, 2012–2014. *Tob Control* 2016;25:275-283. doi: org/10.1136/tobaccocontrol-2014-052064
12. Grant A, Morrison R, Dockrell MJ. Prevalence of waterpipe (shisha, narghille, Hookah) use among adults in Great Britain and factors associated with waterpipe use: data from cross-sectional online surveys in 2012 and 2013. *Nicot Tob Res* 2014;16:931–8. doi: org/10.1093/ntr/ntu015



13. Ritchie J, Lewis J. *Qualitative research practice: A guide for social science students and researchers*. London: Sage; 2013.
14. Ford A, Moodie C, Mackintosh AM, Hastings G. Adolescent perceptions of cigarette appearance. *Eur J Pub Health* 2014;24:464-468. doi: 10.1093/eurpub/ckt161
15. Moodie C, Stead M, Bauld L, *et al*. Plain tobacco packaging: A systematic review. Report prepared for the Department of Health. Stirling: Centre for Tobacco Control Research, University of Stirling; 2012
16. Klausner K. Menthol cigarettes and smoking initiation: a tobacco industry perspective. *Tob Control* 2011;20(Suppl 2):12–19. doi: org/10.1136/tobaccocontrol-2015-052805
17. Cummings KM, Morley CP, Horan JK, Steger C, Leavell N-R. Marketing to America's youth: evidence from corporate documents. *Tob Control* 2002;11(Suppl i):5–17. doi: org/10.1136/tc.11.suppl\_1.i5
18. Gilmore AB. Understanding the vector in order to plan effective tobacco control policies: An analysis of contemporary tobacco industry materials. *Tob Control* 2012;21:119-126. doi: org/10.1136/tobaccocontrol-2011-050397
19. World Health Organisation. *Conference of the Parties to the WHO Framework Convention on Tobacco Control Seventh session*. Delhi, India, 7–12 November 2016. [http://www.who.int/fctc/cop/cop7/FCTC\\_COP7\\_14\\_EN.pdf?ua=1](http://www.who.int/fctc/cop/cop7/FCTC_COP7_14_EN.pdf?ua=1)
20. European Commission. Directive 2014/40/EU of the European parliament and of the Council of 3 April 2014 on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco and related products and repealing Directive 2001/37/EC. Official Journal of the European Union 2014;L127:1-38.
21. Gornall J. Why e-cigarettes are dividing the public health community. *Br Med J* 2015;350:h3317 doi: 10.1136/bmj.h3317.
22. Yerger VB, Daniel MR, Malone RE. Taking it to the streets: responses of African American young adults to internal tobacco industry documents. *Nicot Tob Res* 2005;7:163–72. doi: org/10/1080/14622200412331328385
23. British American Tobacco. *Annual Report 2014*. [http://www.bat.com/group/sites/uk\\_9d9kcy.nsf/vwPagesWebLive/DO9DCL3B/\\$FILE/medMD9UWNKU.pdf?openelement](http://www.bat.com/group/sites/uk_9d9kcy.nsf/vwPagesWebLive/DO9DCL3B/$FILE/medMD9UWNKU.pdf?openelement)
24. Philip Morris International. *2015 Annual Report*. <http://phx.corporate-ir.net/phoenix.zhtml?c=146476&p=irol-reportsannual>