

# Teenage perceptions of electronic cigarettes in Scottish tobacco-education school interventions: co-production and innovative engagement through a pop-up radio project

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## Keywords

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## Abstract

**Aims:** This article thematically analyses spontaneous responses of teenagers and explores their perceptions of electronic cigarettes (e-cigarettes) with a focus on smoking cessation from data collected for research exploring Scottish secondary school students' recall of key messages from tobacco-education interventions and any influence on perceptions and behaviours.

**Methods:** E-cigarettes were not included in the research design as they did not feature in interventions. However, in discussions in all participating schools, e-cigarettes were raised by students unprompted by researchers. Seven of 19 publicly funded schools in the region opted to participate. Groups of 13- to 16-year-olds were purposely selected to include a range of aptitudes, non-smokers, smokers, males and females. A total of 182 pupils took part. Data were generated through three co-produced classroom radio tasks with pupils (radio quiz, sitcom, factual interviewing), delivered by a researcher and professional broadcast team. All pupils were briefly interviewed by a researcher. Activities were recorded and transcribed verbatim and the researcher discussed emerging findings with the broadcast team. Data were analysed using NVivo and transcripts making reference to e-cigarettes examined further using inductive thematic analysis.

**Results:** Key themes of their impressions of e-cigarettes were easy availability and price; advertising; the products being safer or healthier, addiction and nicotine; acceptability and experiences of use; and variety of flavours.

**Conclusions:** This was a qualitative study in one region, and perception of e-cigarettes was not an a priori topic. However, it provides insights into youth perceptions of e-cigarettes. How they discerned e-cigarettes reflects their marketing environment. The relative harmlessness of nicotine, affordability of e-cigarettes, coolness of vaping, absence of second-hand harms and availability of innovative products are all key marketing features. Conflicting messages on safety, efficacy, potential 'gateway' to smoking and nicotine may be contributing to teenagers' confusion. The allure of 'youthful cool' to vaping offers no public health gain, so children should be protected from misleading promotion. Consistent tobacco-education initiatives need to account for this popular trend.

## INTRODUCTION

Electronic cigarettes (e-cigarettes) are battery-operated devices that simulate the experience of smoking cigarettes by vaporising a nicotine-based

liquid for users to inhale. The United Kingdom e-cigarette market began with an array of small independent companies competing in a niche sector, but sales volume has grown rapidly by

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49.5% from autumn 2013 to 2014, with sales rising to £122.7 million.<sup>1</sup> It has become a major and mainstream sector, albeit still much smaller than the smoked tobacco one, and all tobacco multinationals have now heavily invested in the e-cigarette market. An amendment to the Children and Families Act 2014 will prohibit the sale of e-cigarettes to under 18s in England and Wales, with a similar provision being considered in Scotland.

A content analysis of e-cigarettes marketing through a variety of UK media channels from 2012 to 2013 found wide-ranging techniques used by their manufacturers, including sponsorship of sports teams and stadia, product placement, price promotions, group voucher discounts, celebrity endorsement, advertising through traditional billboard, radio, television, print and social media.<sup>2</sup> Also in the UK, a newspaper content analysis of e-cigarette coverage from 2007 to 2012 showed that newspaper articles often described e-cigarettes as a way of bypassing smoke-free legislation and glamorised use through association with celebrities.<sup>3</sup> This marketing may appeal to children, in addition to the intended adult audience. The recent Committee on Advertising Practice and Broadcast Committee of Advertising Practice<sup>4</sup> (CAP/BCAP) UK consultation led to the introduction of marketing rules in November 2014, including those that intend *'to prevent advertising which might, through its content or context, encourage children or young people to use e-cigarettes'* and that *'people shown using e-cigarettes or playing a significant role must neither be, nor seem to be, under 25'*.

The prevalence of e-cigarette use by adolescents in Britain is low.<sup>5</sup> In July 2014, an online Scottish survey with a self-selecting sample found 24% 13- to 14-year-olds, 48% 15- to 16-year-olds and 46% 17- to 18-year-olds reported ever use.<sup>6</sup> The same survey found 81% of 13- to 18-year-olds were aware of e-cigarettes, and among the youngest group (13-14 years), 48% first saw them used at school. In April 2015, 12% of Welsh secondary school pupils reported ever use with 1.5% prevalence of regular use.<sup>7</sup> An analysis of the available surveys

shows the slight variation in prevalence across the different countries in the United Kingdom in 2013–2014, and the authors indicate that e-cigarette use is concentrated to teenagers who already smoke tobacco.<sup>8</sup>

Survey data are important; however, qualitative data are also required to aid the exploration and interpretation of these findings for adolescents. Most published qualitative research with youth has focussed on perceptions of e-cigarettes by older teenagers and young adults in the United States,<sup>9–12</sup> or by younger age groups, for example, 6- to 10-year-olds from Maori and Pacific populations.<sup>13</sup>

One Connecticut study with adolescents and young adults used focus groups to elicit smokers' and non-smokers', e-cigarette users' and non-users' perceptions of e-cigarettes.<sup>14–16</sup> Most high-school respondents described e-cigarettes as leading to smoking cessation by nicotine reduction or 'weaning off'; and most recounted family members' and friends' experiences rather than their own.<sup>16</sup> Among high-schoolers who had ever used e-cigarettes, themes relating to experimentation were influence of family and friends, being 'cool', curiosity, ready availability and flavours. Among tobacco smokers only, experimentation related to comparing e-cigarettes to tobacco cigarettes (healthier, less harsh, cheaper, smells better, more convenient, can hide it, use it indoors).<sup>14</sup> All age groups expected the cost of e-cigarettes to be high at first, but costing less over time. Middle-school students expressed interest in the lighting up components of e-cigarettes.<sup>15</sup>

Hardcastle *et al.*'s<sup>17</sup> focus group study with 45 13- to 17-year-olds in Cheshire and Merseyside aimed to gain insight into their views and experiences of e-cigarettes. They saw *'e-cigarettes as a product in their own right'* and their *'main focus ... was on the different flavours and designs of e-cigarettes'*, although some of the older teenagers associated e-cigarettes with smoking cessation (p. 1).<sup>17</sup> Teenagers *'discussed the range of different flavours they had encountered as if they had intentions to "collect them all" or as if they were seen*

*as badges of honour and could demonstrate that someone was a credible e-cigarette user'* (p. 11).<sup>17</sup>

There is a lack of published literature on qualitative research into the perceptions of teenagers in other parts of the United Kingdom regarding e-cigarettes. In terms of smoking prevention and cessation programmes targeted to teenagers, this is a valuable area to research, as well as providing an insight into their perceptions of how e-cigarettes are promoted. Results such as these can inform larger scale, more representative studies of adolescents' perceptions of these relatively new products.

### AIMS

This article presents an analysis of data collected for an innovative research project exploring secondary school pupils' recall of key messages from previous tobacco-education interventions and any influence these had on perceptions and behaviours. Discussions on e-cigarettes were not included in the research design as they did not feature in the interventions. However, in discussions in all seven schools, e-cigarettes were raised by pupils, unprompted by researchers. Unlike other studies that aimed to gather adolescents' understanding of these products,<sup>11,14,16,17</sup> this article thematically analyses spontaneous responses of the 13- to 16-year-olds and explores their perceptions of e-cigarettes with a focus on smoking cessation. Previous qualitative tobacco control research with adolescents that has reported on emerging participant responses when using a holistic approach has had wide-reaching implications for policy and practice.<sup>18</sup>

### METHODS

#### Design and sample

Two health education and promotion programmes designed to reduce the uptake of smoking were delivered in schools in Fife, Scotland. *Smoke Factor* (SF) is a set of activities, including optional participation in an interactive theatre production, for primary school pupils (9–12 years); and *Smoke-Free*

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*Class* (SFC) is a secondary school competition (11–13 years) to encourage at least 90% of the class to remain smoke-free over the competition period to win class prizes.

Data were collected in schools in May 2014 via the Pop-Up Radio Project which aimed to apply principles of asset-based approaches, co-production and co-design to engage with pupils using innovative methodologies, and explore the extent to which pupils recalled key messages from SF and SFC and whether/how the tobacco-education interventions influenced smoking perceptions and behaviours.

Discussions on e-cigarettes were not included in the study design as they did not feature in SF or SFC. However, the products were raised voluntarily in all schools – usually around question 3 of the ‘Factual Radio’ activity (Text Box 1) when pupils considered options for smoking cessation.

The principal investigator (PI) worked with a professional broadcasting production team of five (3 males, 2 females; 3 facilitators per school). Practicalities and logistics were considered during Phase I, Pre-Production, including how many schools participated in SF and SFC, Pop-Up Radio project’s feasibility and appeal to schools, size of pupil groups and how sessions would be conducted, how the production team would work with the PI to deliver sessions in a creative and methodologically rigorous manner and how data would be collected, documented, analysed and presented to the funder, Health Promotion Fife. There are 19 public (government-funded) Fife secondary schools and only one (S1) had never taken part in SFC. Seven secondary schools opted to take part, including S1. The remaining schools included a mix of pupils, who had taken part in SF, SFC or both (Supplementary Table 1).

As the primary school intervention was relatively costly, SFC could only be offered to a maximum of 30 schools per year (from 139 public primary schools in Fife). Non-participating schools were offered a resource pack with teaching materials, but Health Promotion Fife was unable to ascertain whether schools used it.

The Pop-Up Radio Project was delivered in seven secondary schools to a maximum of 30 pupils (aged 13–16 years) per school for one school day (approximately 5 h). Schools covered a variety of socioeconomic status (SES) areas – low 3, mid-low 1, mid-high 2, high 1. Participants were purposely selected to include a range of aptitudes, smokers, non-smokers (if any), males and females. A total of 182 pupils took part (Supplementary Table 1). Nine said they were smokers.

### Materials and procedure

Three co-produced radio tasks were delivered in each school in Phase II (Production) using the same methodological framework, programme schedule and ‘radio clock’ (Text Box 1).

All pupils were also briefly interviewed by the PI to determine whether they had taken part in any interventions, gather perceptions of the interventions (if appropriate) and of smoking, assess views on smoking prevalence for young people and ascertain how interventions can be improved.

The comments reported in this article were largely generated during the project’s three co-produced activities, particularly ‘Factual Radio’ (see Text Box 1). Some emerged during interviews with the PI, which took place while the project was underway in schools.

Pupils received a project information sheet and could only participate upon receipt of consent forms completed by them and their parent or guardian. Ethical approval was obtained from the University of Stirling and Disclosure Scotland checks conducted.

### ANALYSIS

At the end of each day, the PI discussed matters arising with the production team and potential emerging findings were shared. E-cigarettes were highlighted as key topics in all schools and broad themes identified – awareness, flavours, experimentation, confusion and relevance to smoking.

All activities and interviews were recorded and transcribed verbatim and analysed using qualitative software

NVivo. Transcripts making reference to e-cigarettes were examined further using inductive thematic analysis – emergent assumptions and themes were strongly linked to the data.<sup>19</sup>

The iterative process entailed reading and rereading texts until broad codes were refined and key themes identified to allow a rich and thorough understanding of teenagers’ perceptions of e-cigarettes.<sup>20,21</sup> Each theme characterised ‘some level of patterned response or meaning within the data set’ (p. 82).<sup>22</sup> Results are presented by theme with quotes attributed by pupils’ schools (Supplementary Table 1). Schools’ SES have been omitted to protect anonymity.

## RESULTS

### Availability and price

Pupils from all schools said e-cigarettes were easily available from ‘shops, newsagents and online’ (School (S) 2, Respondent (R) 1) and ‘teleshopping [television shopping channels]’ (S5, R1). They named stores they could purchase the products from, ‘market stalls’ (S1, R1), kiosks in local shopping centres (S6), speciality e-cigarette shops (S1) and ‘cheap ones’ from the ‘Pound Shop’ (S2, R2).

One pupil said,

*Ah’ve seen it in every wan ah’ve been in [I have seen e-cigarettes in every shop I have been in].* (S5, R2)

Another remarked,

*I think they [stalls selling e-cigarettes] have started like popping up all over the town.* (S7, R1)

It was noted that ‘really cheap’ (S3, R1), ‘wee tiny liquid bottles’ (S1, R2) were available online – especially Amazon and eBay – and ‘that’s where you can get most of the flavoured ones’ (S3, R1). Pupils also said they were sold at point-of-sale (i.e. at shops’ tills):

*In the local shop it [e-cigarette stand] is sat on the front desk so when I am going to buy chewing gum or that I can see them.* (S3, R2)

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*They're always right next to where they sell the cigarettes, like at the back of the counter. (S5, R3)*

Several pupils compared the price of e-cigarettes to traditional cigarettes, suggesting 'it's dearer [more expensive] to smoke' (S2, R3) and e-cigarettes are 'pretty cheap' (S4, R1):

*They're only, like, £3 ... which is saving them [smokers] a lot o' [of] money. A lot more money in a week than what they usually did on cigarettes. (S1, R2)*

### Advertising

It was noted 'there's loads o' [of e-cigarette] posters up' (S5, R4) alongside promotions in popular press:

*You know how in magazines they have got like the back page? I have seen it in them and obviously in the shops ... (S2, R4)*

*In the [news]paper, there was this thing ... it was like the Vapour Lounge ... I was just sitting reading the paper and it was, 'come for a free trial'. (S7, R2)*

Several pupils said e-cigarettes were advertised in shopping centres and on television. Some named specific brands:

*... VIP the advert on telly. (S2, R5)*

*There's an advert ... ah [I] think it's the E-Lite brand. (S5, R5)*

*Skycigs ... were being advertised in a shopping centre ... (S3, R3)*

*In the shops ... like sometimes they advertise them for sale ... you know how they advertise for Sky and stuff? They were advertising the fags [e-cigarettes] and the people were actually like smoking them and showing you. (S6, R1)*

### Safer, healthier, nicotine and addiction

Several pupils described e-cigarettes as 'safer' (S3, R3), 'harmless' (S3, R4),

'healthier' (S7, R3) and 'less toxic' than smoking (S7, R4):

*... It is to try and help you quit and they have not got like all the chemicals that are in cigarettes in them so it's a cleaner smoke basically. (S2, R6)*

*There's way less chemicals in it cos [because] there's, like, four thousand or something chemicals in a real cigarette. (S1, R3)*

*It hasn't been tested what's inside them ... it's just vegetable oil in them and nicotine and then a flavour ... really bad toxins ... (S3, R5)*

*It's just they don't have all the crap that gets put into normal cigarettes, like tar and stuff ... and the poison it's not got that in it ... (S2, R7)*

In one school, where e-cigarettes were described as 'less harmful', pupils said they were 'just like a flavoured smoke' and 'evaporated water' – 'it's just flavour. It's nothing bad in it' (S5, R6).

Pupils also reflected on e-cigarettes in the context of addiction and nicotine – often suggesting that the latter was not 'bad':

*... nicotine's no' bad for ye [not bad for you] – ah [I] think it's addictive but it's no' bad for ye – cos they have that in hospitals to purify the air or something. (S3, R6)*

*It's easier tae [to], like, come off the fags an' go onto the e-cigarettes than just to come off the fags ... because then the e-fags are still gieing ye [giving you] the nicotine but ... there's no' a' [not all] the bad effects on your body ... (S7, R5)*

*Don't you just get addicted to like the actual electric ones and then just keep smoking them instead of [real cigarettes]? (S6, R2)*

Other pupils said 'there's only nicotine, there's no tar [in e-cigarettes]' but 'you can still get addicted', and 'nobody knows what's in them' but 'there are still harmful chemicals in them as well' (S4, R2).

### Acceptability and experimentation

E-cigarettes were generally described as nicotine replacement therapies even though none were licensed as cessation products at the time. Participants shared their or family members' experiences of using the devices to quit:

*Ma [my] mum doesn't like e-cigarettes. She tried them an' she says, like, she prefers smoking. (S7, R6)*

*... just these stupid, like, e-cigarette things ... it's like a cigarette and it's got, like, the same nicotine in it as proper fags but it stops you from smoking. (S1, R4)*

*My mum used to use them ... she stopped smoking for about two months there and then she got back into it. (S1, R5)*

*Ah've [I've] tried, like, the e-cigs ... but they didn't work either. (S1, R6)*

This prompted debates about how vaping compared to smoking. Some viewed it 'in a different way', while others said it was 'the same' (S7, R7) and 'it's still bad but not as bad [as smoking]' (S1, R7):

*... technically if you smoke it [e-cigarette] like you would normally smoke like the amount as you would a cigarette then technically you are still a smoker. (S4, R3)*

*The thing is like people could just be puffing on them all day and they don't realise that they've actually smoked the equivalent of 60 fags. (S4, R4)*

*You can smoke them in front of, like, babies cos it's not proper smoke ... (S1, R8)*

Some highlighted the difference between those who buy e-cigarettes for smoking cessation and recreational purposes: 'if they keep doing it [vaping] then I would class them as smokers, if they don't plan on stopping then yeah they would be counted as smokers' (S3, R7).

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Several said e-cigarettes are more acceptable as they do not 'leave a trace of smell' (S3, R8):

*... your parents won't know either because if you're like out with friends and they're all smoking and that and you decide you want to have one then they'll smell it on you ... but if you have like an e-fag then they can't smell it on you at all.* (S3, R9)

Pupils also said e-cigarettes can be used indoors:

*They don't give off second-hand smoke, so they can do that anywhere really ... obviously not in school, but in the buildings you can walk past them and it won't harm you as much as the real cigarette will.* (S6, R3)

*Can you not use them on aeroplanes? ... my uncle smokes so he bought one to smoke on the plane because he was like on a plane for like nine hours.* (S7, R8)

Some thought an e-cigarette 'looks like a sweet' and liked that 'it lights up blue at the end' (S1, R9), while others thought 'it looks stupid' as 'you're sookin' [sucking] on a metal thing' (S5, R7).

Several suggested pupils used 'e-fags' to be 'cool' (S7, R5):

*... when it blows out smoke it looks cool ... cos it's not a proper fag ...* (S1, R10)

*... maist [most] folk are just daen [doing] it for popularity ...* (S5, R8)

In one school (S5), it was suggested that up to 30 pupils used e-cigarettes and some then went on to use cigarettes:

*... ah [I] think that's why most people go on tae [to] fae [from] e-cigarettes to actual [cigarettes], just to see what it's like, the actual wans [ones], an' [and] then they get addicted tae [to] it.* (S5, R9)

*They [e-cigarette users] might no' [not] feel like they're getting anything fae [from] the e-cigs ...* (S5, R10) ...

*like, a kick fae [from] it ... they might get a better kick fae a fag [from a cigarette].* (S5, R11)

Elsewhere, some non-smokers said they had or would experiment with e-cigarettes – although some feared addiction:

*... you could do it because it's not as bad as smoking, so they might as well do it.* (S3, R9)

*... it's just to try it to see what it's like ... I've only tried it once ... I don't want to become addicted ...* (S3, R10)

Pupils from a different school (S1) said 'at one point I just saw everyone walking around with them', 'we all had one' (S1, R11), there were 'a lot of people using them' (S1, R12) and 'people in the school were selling them' (S1, R12). One added,

*I thought it was a pen until I saw, like, the smoke coming out of his mouth in English [class] ...* (S1, R13)

### Flavours

Most pupils from all schools mentioned the variety of flavours – including Vimto, watermelon, peach, chocolates, Gummy Bears, toffee, cherry, Jamaican grass, cherry menthol and 'a cherry one [that] smells like Dr Pepper' (S1 – S7) – which led to experimentation:

*Ah [I] just wanted tae [to] try it because it was a, like, fruity flavour.* (S7, R8)

*Loads of people in our school had them. Like, they were walking about and everyone was, like, 'try this', because they all had different flavours.* (S1, R13)

*I've tried a shisha pen thing ... it's like a powdery flavoured thing ... almost like a sherbet ...* (S5, R12)

*... the bubblegum ... it was good ...* (S3, R11)

*They are nice actually ... the ones that look like cigarettes are like bad in taste, but the ones that press the*

*button ... the vapour ones ... they are good.* (S3, R12)

*I wanted to see what the flavour was like ... it tasted of vanilla ...* (S2, R4)

*... I work in a shop and like at the till area where the sales of cigarettes and alcohol and stuff, there is like a massive line, it's like a metre long of like different flavours. There is like blueberries, bananas, Red Bull, like Lucozade flavours, apple ...* (S2, R8)

Pupils debated whether flavours should be allowed due to potential appeal to younger people:

*I don't think there should be nice tastes for it [e-cigarettes] because that's sort of advertising people to do it more, it's like, you can be smoking and it's not as harmful but you can be like, it tastes nice. It shouldn't happen.* (S4, R5)

Commenting on a cola-flavoured e-cigarette, another expressed concern it might set a bad example for children:

*... if they saw like their big brother or something having one and they were like it's Cola and then the wee bairn [small child] will try it and they will get addicted to them ... that would be how the little one would start smoking, just trying one of them as well ...* (S2, R9)

### DISCUSSION

On the one hand, young people in this project see e-cigarettes as cessation devices, some noting they were cheaper than tobacco cigarettes; as such, e-cigarettes are very much an adult product. Conversely, the perceived coolness of vaping, ready availability and vast array of appealing flavours suggest this is a product for young people, which has led to high levels of awareness and experimentation.

In both cases, safety is a big part of the discourse. Vaping is seen as much safer than smoking because there are no tar or chemicals involved. Nicotine, by contrast, is felt to be relatively harmless – its only drawback being its potential to cause addiction. As a result, it is seen to

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be safe to vape indoors or close to babies.

These perceptions are linked to direct experience. The behaviour of parents and significant adults reinforces the cessation message, while the appeal to young people reflects life in the playground.

Unlike this Fife sample, young people in Cheshire and Merseyside had limited awareness of e-cigarette advertising and marketing campaigns.<sup>17</sup> It is noticeable, however, that perceptions of respondents in both parts of the UK reflect the marketing environment. The harmlessness of nicotine, affordability of e-cigarettes, coolness of vaping, absence of second-hand harm and ready availability of innovative products are all key messages and features of UK e-cigarette marketing.<sup>2</sup> Similarities with how the products are marketed in the United States could account for overlapping findings in the Connecticut research.<sup>14–16</sup>

The study design has some limitations. The pupils' spontaneous responses about e-cigarettes were respondent-led as opposed to researcher-led, and thus have less depth when compared with data captured in interviews or focus groups by a researcher with a planned

topic guide who elicits detailed responses. Also, the responses should be regarded within the context they were collected – exploring the impact of tobacco-education school interventions – which may have influenced the school pupils' viewpoints.

## CONCLUSION

As this is a qualitative study in one area, caution is needed when drawing solid conclusions. In Fife, 19% of 15-year-olds and 10% of 13-year-olds reported either trying or using e-cigarettes in 2013 – both figures were 3% higher than the Scottish average for their age groups – so views may be different in other areas.<sup>23</sup>

Nonetheless, the research provides rich insights into youth perceptions of e-cigarettes particularly as responses were unprompted. Researchers in North West England had designed their research to capture this and also found 'discussions around these devices and experiences of their use form part of the social milieu of young people, with a dynamic vocabulary to support these conversations' (p. 20).<sup>17</sup>

This study shows children are acquiring a set of perceptions that have

much in common with e-cigarette marketing, but limited relationship to an increasingly contradictory evidence base and media reports where e-cigarettes are frequently (and often simultaneously) presented as safe and effective,<sup>24,25</sup> dangerous and ineffectual,<sup>26,27</sup> unlikely to become a 'gateway' to smoking,<sup>7</sup> showing a major increase of 'dual use' with smoked cigarettes<sup>28</sup> and nicotine portrayed as both relatively harmless and toxic.<sup>26,29,30</sup> Conflicting messages may be contributing to teenagers' confusion.

It is clear, however, that the allure of youthful cool to vaping offers no public health gain. This suggests that much more needs to be done to protect children from misleading messaging and promotion. Consistent tobacco-education initiatives need to account for this trend.

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## References

- Hegarty R. The Grocer's top products survey in association with Nielsen: Liquids drive e-cigs growth as NRT flops. *The Grocer*, 20 December 2014, p. 179.
- De Andrade M, Hastings G, Angus K. Promotion of electronic cigarettes: Tobacco marketing reinvented? *BMJ* 2013; 347: f7473. DOI: 10.1136/bmj.f7473.
- Rooke C, Amos A. News media representations of electronic cigarettes: An analysis of newspaper coverage in the UK and Scotland. *Tobacco Control* 2014; 23: 507–12. DOI: 10.1136/tobaccocontrol-2013-051043.
- Committee on Advertising Practice and Broadcast Committee of Advertising Practice (CAP/BCAP). *New Rules for the Marketing of E-cigarettes. CAP and BCAP's Joint Regulatory Statement*. London: Committee of Advertising Practice, 2014. Available online at: [http://www.cap.org.uk/News-reports/Media-Centre/2014/~/\\_/media/Files/CAP/Consultations/ecig%20consultation/Regulatory%20Statement.ashx](http://www.cap.org.uk/News-reports/Media-Centre/2014/~/_/media/Files/CAP/Consultations/ecig%20consultation/Regulatory%20Statement.ashx) (accessed 17 November 2014).
- ASH. *Use of Electronic Cigarettes in Great Britain*. London: ASH, 2014. Available online at: [http://www.ash.org.uk/files/documents/ASH\\_891.pdf](http://www.ash.org.uk/files/documents/ASH_891.pdf) (accessed 23 October 2014).
- ASH Scotland. *Young People and E-cigarettes in Scotland: Report on a Survey of Young People*. Edinburgh: ASH Scotland, 2014. Available online at: <http://www.ashscotland.org.uk/media/365090/e-cig-final-report-16714.pdf> (accessed 23 October 2014).
- Moore G, Hewitt G, Evans J, Littlecott HJ, Holliday J, Ahmed N *et al*. Electronic-cigarette use among young people in Wales: Evidence from two cross-sectional surveys. *BMJ Open* 2015; 15: e007072. DOI: 10.1136/bmjopen-2014-007072.
- Bauld L, MacKintosh AM, Ford A, McNeill A. E-Cigarette uptake amongst UK youth: Experimentation, but little or no regular use in non-smokers [Letter]. *Nicotine & Tobacco Research*. Epub ahead of print 6 August 2015. DOI: 10.1093/ntr/ntv132.
- McQueen A, Tower S, Sumner W. Interviews with 'vapers': Implications for future research with electronic cigarettes. *Nicotine & Tobacco Research* 2011; 13: 860–7. DOI: 10.1093/ntr/ntu088.
- Choi K, Fabian L, Mottey N, Corbett A, Forster J. Young adults' favorable perceptions of snus, dissolvable tobacco products, and electronic cigarettes: Findings from a focus group study. *American Journal of Public Health* 2012; 102: 2088–93. DOI: 10.2105/AJPH.2011.300525.
- Akre C, Curis JC. E-cigarettes as a gateway to smoking: What do adolescents themselves think? *Journal of Adolescent Health* 2015; 56(2): S31. DOI: 10.1016/j.jadohealth.2014.10.062.
- McDonald EA, Ling PM. One of several 'toys' for smoking: Young adult experiences with electronic cigarettes in New York City. *Tobacco Control*. Epub ahead of print 6 January 2015. DOI: 10.1136/tobaccocontrol-2014-051743.
- Faletau J, Glover M, Nosa V, Pienaar F. Looks like smoking, is it smoking?: Children's perceptions of cigarette-like nicotine delivery systems, smoking and cessation. *Harm Reduction Journal* 2013; 10: 30. DOI: 10.1186/1477-7517-10-30.
- Kong G, Morean ME, Cavallo DA, Camenga DR, Krishnan-Sarin S. Reasons for electronic cigarette experimentation and discontinuation among adolescents and young adults. *Nicotine & Tobacco Research*. Epub ahead of print 6 December 2014. DOI: 10.1093/ntr/ntu257.
- Palmer A, Kong G, Camenga D, Cavallo D, Morean M, Krishnan-Sarin S. Youth descriptions of electronic cigarettes: A qualitative study. *Annals of Behavioral Medicine* 2014; 47: S86. DOI: 10.1007/s12160-014-9596-9.
- Camenga DR, Cavallo DA, Kong G, Morean M, Connell CM, Simon P *et al*. Adolescents' and

## Teenage perceptions of electronic cigarettes in Scottish tobacco-education school interventions

- young adults' perceptions of electronic cigarettes for smoking cessation: A focus group study. *Nicotine & Tobacco Research*. Epub ahead of print 2 February 2015. DOI: 10.1093/ntr/ntv020.
17. Hardcastle K, Hughes K, Worsley J, Bennett A, Ireland R, Sweeney S. 'Most people I know have got one': Young people's perceptions and experiences of electronic cigarettes. Liverpool: Centre for Public Health, Liverpool John Moores University, 2014. Available online at: <http://www.cph.org.uk/wp-content/uploads/2014/03/Ecig-focus-groups-final-report.pdf> (accessed 23 October 2014).
  18. Amos A, Wiltshire S, Bostock Y, Haw S, McNeill A. 'You can't go without a fag ... you need it for your hash' – A qualitative exploration of smoking, cannabis and young people. *Addiction* 2004; 99(1): 77–81.
  19. Boyatzis R. *Transforming Qualitative Information: Thematic Analysis and Code Development*. Thousand Oaks, CA: Sage, 1998.
  20. Murray M, Chamberlain K. *Qualitative Health Psychology*. London: Sage, 1999.
  21. Smith JA. *Qualitative Psychology: A Practical Guide to Research Methods*. London: Sage, 2003.
  22. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology* 2006; 3: 77–101.
  23. Information Services Division (ISD), NHS National Services Scotland. Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) 2013. *Summary Findings for Fife*, 25 November 2014. Available online at: [http://www.isdscotland.org/Health-Topics/Public-Health/Publications/2014-11-25/SALSUS\\_2013\\_Fife.pdf](http://www.isdscotland.org/Health-Topics/Public-Health/Publications/2014-11-25/SALSUS_2013_Fife.pdf) (accessed 12 March 2015).
  24. Hajek P, Etter JF, Benowitz N, Eissenberg T, McRobbie H. Electronic cigarettes: Review of use, content, safety, effects on smokers and potential for harm and benefit. *Addiction* 2014; 109(11): 1801–10. DOI: 10.1111/add.12659.
  25. Rahman MA, Hann N, Wilson A, Mnatzaganian G, Worrall-Carter L. E-cigarettes and smoking cessation: Evidence from a systematic review and meta-analysis. *PLoS ONE* 2015; 10: e0122544. DOI: 10.1371/journal.pone.0122544.
  26. Schraufnagel DE. Electronic cigarettes: Vulnerability of youth. *Pediatric Allergy Immunology and Pulmonology* 2015; 28(1): 2–6. DOI: 10.1089/ped.2015.0490.
  27. Al-Delaimy WK, Myers MG, Leas EC, Strong DR, Hofstetter CR. E-cigarette use in the past and quitting behavior in the future: A population-based study. *American Journal of Public Health*. Epub ahead of print 16 April 2015. DOI: 10.2105/AJPH.2014.302482.
  28. Goniewicz ML, Gawron M, Nadolska J, Balwicki L, Sobczak A. Rise in electronic cigarette use among adolescents in Poland. *Journal of Adolescent Health* 2014; 55(5): 713–5. DOI: 10.1016/j.jadohealth.2014.07.015.
  29. Hall W, Gartner C, Forlini C. Ethical issues raised by a ban on the sale of electronic nicotine devices. *Addiction*. Epub ahead of print 5 April 2015. DOI: 10.1111/add.12898.
  30. England LJ, Bunnell RE, Pechacek TF, Tong VT, McAfee TA. Nicotine and the developing human: A neglected element in the electronic cigarette debate. *American Journal of Preventive Medicine*. Epub ahead of print 7 March 2015. DOI: 10.1016/j.amepre.2015.01.015.