




Young people's use of disposable vapes: A qualitative study

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Abstract

Background and aims: Youth use of disposable vapes has increased markedly in the United Kingdom in recent years, yet little is known about the motivations, experiences and perceptions of young people themselves. This study aimed to explore young people's experiences and use of disposable vapes.

Methods: This was a qualitative study recruiting young people reporting regularly vaping disposables, collecting data via dyad guided, individual and group interviews. Data analysis was theoretically informed by the Social Ecological Model. Inductive and deductive coding approaches were used, with resolution of coded interpretations by consensus.

Results: Twenty-nine young people aged 16–20 years participated in qualitative interviews. At the individual level, participants discussed how characteristics of disposable vapes were important to them—particularly price, accessibility and the attractive designs, colours, names and flavours. Young people frequently engaged in both vaping and tobacco smoking, seeing the behaviours as interchangeable dependent on context, and having inaccurate relative harm perceptions of vaping compared with smoking. Experimentation was widespread and many used vapes as a way of managing stress and anxiety. Vaping was positioned as a social behaviour, common among peers. Parental influence on vaping behaviour was minimal, although vaping initiation could be influenced by family vaping norms. Culturally, vaping was a widespread normalized behaviour. Young people were aware of media reports and potential harms, but were less aware of smoking related harms as a consequence.

Conclusions: Disposable vapes appear to be attractive and accessible to young people in the United Kingdom. Vaping is normalized in this population, despite being seen as potentially damaging to health, and vaping and smoking are engaged in interchangeably. Underage sales of vapes are reportedly widespread. Strict regulation, such as banning products or increasing prices, may prompt UK youth to switch from vaping to smoking.

KEYWORDS

E-cigarette, qualitative, tobacco, vaping, young people, youth

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INTRODUCTION

In recent years there has been a clear shift in nicotine product consumption, particularly among young people. One phenomenon that has gained prominence is the widespread use of disposable vapes (e-cigarettes). These are defined as an 'e-cigarette closed system that has a non-rechargeable battery and no replaceable parts' [1], and deliver nicotine effectively, often via high-strength (20 mg/ml in United Kingdom/European Union) nicotine salts e-liquid [2]. Between January 2021 and April 2022 vaping prevalence rose from 11.3% to 17.7% among 18-year-olds in England, and there was an uncertain decline in smoking prevalence [3]. In the same time-period disposable use increased from 0.4 to 54.8% among current 18-year-old vapers [3]. Disposable vapes are now the most used product among current vapers [4]. This shift in nicotine consumption patterns has raised concerns regarding the popularity of disposable devices due to possible health implications [5] and environmental concerns [6].

The appeal of disposables may lie in their design, ease of use, diverse array of flavours [7] and low unit price [8], and there is concern that lack of regulation has enabled aggressive marketing that has not protected young people [9]. A qualitative focus group study of both vapers and non-vapers in Scotland reported that young people described disposables as 'cool', 'fashionable' and 'enticing', and viewed them as a life-style accessory [10]. Perceptions of the relative harm of disposables are mixed, and there appears to be great confusion. Data from Action on Smoking and Health (ASH) suggests that four in 10 smokers incorrectly believe vaping in general is as or more harmful than smoking [11], compared to the evidence that vaping represents only a small fraction of the risk of smoking [5], and young people (vapers and non-vapers) noted the uncertainty of ingredients in disposables [10].

Previous qualitative literature has reported that unique psychological, social and identity-related factors are important in adult vaping [12], and in particular may sustain continued use [13]. Specific features of disposables may conceivably contribute to their appeal among young people, and may influence patterns of initiation and sustained use. However, little is known about the use and experiences of disposable vapes from the perspective of young people themselves. In this study we set out to explore situated experiences of young people's use of disposable vapes.

METHODS

The study comprised qualitative data collection, reported according to Consolidated criteria for REporting Qualitative research (COREQ) guidance [14]. A number of different approaches were offered to best suit the needs of participants. Dyad-guided interviews were an innovative approach where we recruited friendship pairs, gave them prompt cards and asked them to have a guided discussion in a private room without a researcher present. We provided participants with an audio recorder and asked them to record the discussion. This method was selected in an attempt to gather naturalistic data, less influenced by the presence of a researcher. Individual interviews with a

researcher were offered to young people who wanted to take part but did not have a friend to participate with. Small group interviews were also offered, as some with special educational needs needed

TABLE 1 Sample demographics.

Demographic categories	n = 29
Gender	
Female	10 (34%)
Male	17 (59%)
Non-binary	2 (7%)
Ethnicity	
White British	29 (100%)
Age (years)	
16–17	19 (65%)
18–20	10 (35%)
IMD*	
IMD 1–2	4 (13%)
IMD 3–4	14 (48%)
IMD 5–6	3 (10%)
IMD 7–8	2 (7%)
IMD 9–10	3 (10%)
Missing	3 (10%)
Disclosed special educational need or disability (SEND)	12 (41%)
Age started vaping	
Mean (SD)	15 (1.964)
Median	15
Range	11–18
Vaping frequency	
Daily	20 (69%)
5–6 times per week	2 (7%)
3–4 times per week	1 (3%)
1–2 time per week	6 (21%)
Tobacco smoking	
Currently smoking	15 (52%)
Ex-smoker	11 (38%)
Never smoker	3 (10%)
Currently smoking (cannabis only)	2/15
Age started smoking (n = 26)	
Mean (SD)	14 (3.0453)
Median	14.5
Range	5–18
Smoking frequency (n = 15)	
Daily	8 (55%)
5–6 times per week	2 (13%)
1–2 time per week	4 (27%)
Less than weekly	1 (7%)

*Index of Multiple Deprivation (IMD) [23]. IMD bands reflect areas of deprivation, with the lowest IMD representing the most deprived. SD = standard deviation

support during data collection. We sought to recruit young people aged 16–21 years who vaped disposables. Participants were recruited from a community college, by personal recruitment at community events, from a youth group and via snowballing. Initial approach was opportunistic, by a researcher or had been ‘informed’ by a friend or peer. Data were collected between July 2023 and October 2023 by two experienced researchers (A.V. and E.W.). We continued to recruit until the researchers felt that we would have sufficient data to reach consensus to answer the research questions, which were exploratory. Ethical approval for the study was granted from the University of East Anglia Faculty of Medicine and Health Sciences (UEA FMH) research ethics committee ref: ETH2223–2239.

Participants gave verbal recorded consent following a discussion with the researcher regarding the purpose of the study, where there

was opportunity to ask any questions. Interviews took place in private rooms at the college or in quiet spaces in the community (not research offices). Prompt cards were co-designed with input from two young people who volunteered as Patient and Public Involvement (PPI informants). They undertook an initial dyad interview together as a pilot. The finalized prompts encouraged dyads to discuss use of disposable vapes, devices, flavours, patterns and situations of use, purchasing and social aspects. We also gave prompts to ask about tobacco smoking and quit attempts and views on regulation (see Supporting information). Researcher-guided and group interviews followed the same prompts. Interviews lasted an average of 24 minutes. Data were transcribed verbatim and anonymized. Transcripts were thematically analysed [15] systematically case-by-case independently by E.W. using NVivo, with verification by C.N. Analysis was inductive, and then

TABLE 2 Themes structured around the socio-ecological model.

Theme	Subthemes
Individual level	
Characteristics of disposable vapes	Youth product perception; device and flavour experimentation; convenient and easy to use; tricks; concerned about affordability; risky behaviours: unregulated vapes, counterfeit vapes and tampering with batteries; concerned about environmental impact
Mental health and disposables	Vaping manages everyday anxiety, stress and boredom; vaping related to transitions and stressful events
Nicotine dependence	Range of perspective: addiction, habit or controlled situation use; ‘heavy’ or ‘social’ vaping identities; fluid or changeable frequency of use; low desire to stop in short term
Attitudes towards health risks of vaping disposables	Unpleasant side effect experiences; long-term or unknown health risk belief; vaping worse or same as smoking belief
Tobacco smoking	Vaping for smoking cessation; vaping and smoking interchangeable behaviour; tobacco advantages: satisfying hit, cheaper as use more sporadically; disposable advantages: smell/taste nicer, easier to conceal, more convenient, and less stigma.
Interpersonal level	
Peers	Normalized youth behaviour—readily accessible; trendy and rebellious behaviour; disposables use to fit in with group and foster belonging; peer pressure; peer-to-peer selling
Family	Family disapproving, indifferent or accepting; range of openness from young people; intergenerational vaping practices—normalization within family
Organization/community level	
Community	Normalized within community; use across different locations, e.g. home, car, city centre, friends’ houses etc.; stealth vaping; vaping illicitly in school—range of consequences given; schools places of purchase; outside vaping policies encourage group vaping; corner shop purchasing prolific—no ID and cheaper non-compliant products
On-line communities	Normalized content in on-line communities; Snapchat used to discuss vaping and buy and sell; on-line purchasing—avoid ID and cannabis vapes available
Society/policy level	
Media	Mainstream and social media; stories recounted included: acute negative health impacts, ‘popcorn lung’ narrative, contents of e-liquid, vaping in schools, calls for bans; intense youth vaping scrutiny compared to lack of youth smoking scrutiny.
Marketing	Unavoidable prominent shop displays; deals: offers, cheaper unregulated devices, free merchandise; appealing packaging and flavours
Regulation	Danger to young people and environmental discourses reasons for regulation; personal choice to vape; adult hypocrisy perception; potential reactions to banning devices or flavours: stockpiling, use illegal devices, use refillable device, smoke instead; suggested regulation: reduce accessibility, enforce identification processes, reduce number of shops allowed to sell vapes, consequences for adults who buy children disposables; suggested regulation: reduce appeal, remove prominent shop displays, ban packaging and flavour names that appeal to children, apply tobacco marketing regulations; suggested regulation: reduce environmental harms, encourage or nudge young people to use refillable devices, develop easier methods/routes to recycling batteries, use sustainable materials to make devices

deductively organized according to the Social Ecological Model [16]. Coding was discussed at regular team meetings and anomalies were resolved by consensus.

RESULTS

Table 1 shows demographics and smoking and vaping information. All young people were vaping disposables regularly (at least weekly aside from two individuals, who reported less than weekly use.

The sample ($n = 29$) represented a relatively deprived population; more than half were from Index of Multiple Deprivation (IMD) bands 1–4, and more than half were also current tobacco smokers. All were of white British ethnicity. Eighteen young people were recruited from a community college, with the rest recruited from personal contacts or community events. All locations were in a single county of the United Kingdom. On average, the age of initiation of tobacco smoking [14] preceded the age of first vaping [16]. Twelve people (41%) self-disclosed a special educational need.

Qualitative data were checked to assess quality between interview modes of data collection. There were no substantive differences, although researcher-guided interviews resulted in richer descriptions due to prompting. Analysis themes are summarized in Table 2.

Individual-level experiences and reasons for use

Characteristics of disposable vapes

Disposables were viewed as a young person's product. Participants reported experimentation with different brands, depending on availability. They liked to experiment with flavours, with fruit being most frequently mentioned. They also appreciated the convenience and ease of use of disposable vapes, especially compared to refillables or rolling tobacco, which they viewed as messy and complex. Performing tricks with the exhaled vapour was seen as an appealing aspect of disposables by some young men in particular:

'The other thing I have about vapes is that I just play with them. Duo's, waterfall, dragon. Dragon I will just do by myself where I have it coming out my nose and mouth at the same time, which is really hard to do.'

(YP12, Community College)

Affordability was raised by a few young people who discussed vapes being cheap to buy initially, but then becoming more expensive longer-term. This was cited as a reason for trying to cut down vaping, but also for engaging in risky behaviours such as buying unregulated larger-sized disposables and, for a couple of the young men, tampering with disposables so that they can be re-charged.

'In a vape, you have batteries, right? They're lithium. So, you can be charging them the same as the phone

battery, but smaller. So, I've bought a power bank module on Amazon for like a fiver and then cut a hole in the bottom of it for a USB port, and there you go, it's a power bank.'

(YP25, Community College)

A few young people were concerned about the environmental impact of disposables such as single-use plastic and battery waste.

'My concern is the litter, like the litter is ridiculous. It's not just packaging, it is the disposables which have got batteries in. They are very harmful, especially if they end up in waterways.'

(YP01, Community Event)

Mental health and disposables

Many discussed vaping disposables as a way of managing stress and anxiety experienced in their day-to-day lives and believed that vaping was calming. Some said that it helped with social anxiety. Vaping initiation and increased vaping were related by some young people to coping with specific stressful events such as examinations, family breakdown or bereavement.

'I've got, like, some mental health issues and I feel like it really helps anxiety and things just having it. I do not know how to explain like if I'm quite anxious and I have a vape it makes me less anxious and also because of it you can leave anywhere you find overwhelming, so you can go and go outside and just vape instead.'

(YP04, Youth Group)

Nicotine dependence

Approximately half of the young people believed they were dependent upon vaping nicotine to at least some degree. The other half felt that they were not dependent and their use was dictated by access to disposables. A few described vaping to be habit rather than an addiction, with use akin to compulsive phone use. Young people had constructed vaping identities around their level of dependence and viewed themselves as either 'heavy vapers', addicted to vaping and vaping throughout the day, or 'social vapers', only vaping when out with friends or drinking.

'like pulling your phone out, you just automatically go to your phone if it's in your jeans pocket. That's what you do with a vape. You feel it, you automatically pull it out and hit it. If you ain't got it there, you cannot feel it, so it slips your mind'.

(YP24, Community College)

Vaping frequency was not static and young people commented on how they had become more or less dependent over time. Undertaking a vaping quit attempt was only discussed by a couple of young people, but a few described periods of time where they had not vaped, such as going on holiday, being admitted to hospital or simply not being around vaping friends. Consequently, some perceived vaping as a choice rather than an addiction. Most young people did not have any immediate plans to stop and reported enjoying the pleasurable aspects of vaping or perceiving it as a useful way of managing mood. However, longer-term quitting desire was expressed by a few. Reasons given for quitting included to save money, improve performance at the gym or work and having a family in the future.

Attitudes towards health risks of vaping disposables

Some of the young people reported experiencing unpleasant known side effects of nicotine, especially when they initiated vaping disposables, including nausea, head rushes and coughing. A couple commented that they had learnt to avoid certain flavours or devices that they believed had given them sore throats or headaches. These experiences seemed to reinforce that vaping could pose health risks. Many of the young people commented that vaping was dangerous to health, that long-term effects were not fully known, and most believed that vaping was as risky to health as smoking. Risks of chemical ingredients in disposables seemed to be the main concern, yet only a couple appeared to be aware of the greater relative risk from chemicals found in tobacco.

'I do not think they are any better than smoking, so obviously that the health benefits and stuff, there is no, there is none. It's really bad for your health and if anything it's probably worse because if it's just like aerosols, so it has a lot of chemicals in and I do not think it just affects the lungs. I think it affects like bloodstream and brain function.'

(YP04, Youth Group)

Tobacco use

Smoking was common in the sample, with only three young people stating that they had never smoked tobacco and approximately half saying that they currently smoked. Three said that they vaped specifically for smoking cessation and one for cannabis cessation but, for most, their pathways of smoking and vaping behaviour were less clear. Young people varied in whether they had tried tobacco or vaping first. They seemed to view smoking and vaping disposables as interchangeable behaviours, with use influenced primarily by what was available at the time or the situation they were in. One of the advantages of smoking over vaping was described as experiencing a more satisfying nicotine hit, especially when used with alcohol. A few young people commented that smoking was cheaper than vaping disposables

because they used tobacco sporadically at irregular intervals, rather than the regular puffing adopted with disposables. Advantages of vaping over smoking included better smell and taste, easier to conceal, more convenient to use and buy and reduced stigma.

'I think vaping's a lot more expensive, especially disposables, because they do not last that long really. A pouch of tobacco that could last me like longer than a vape could.'

(YP19, Community College)

Interpersonal level

Peers

All the young people believed that vaping disposables was normalized among peers. They commented that disposables were a trend and perceived to be fashionable by younger teenagers. Some felt there was peer pressure to vape disposables and had witnessed cajoling from friends to try them. Most young people, however, commented that they had tried disposables simply because they had access in their friendship group and were curious. Disposable use was seen as a social activity and was used to fit in and foster belonging. A common reason given for starting to buy disposables rather than using friends' devices was to avoid feelings of guilt and being accused of 'freeloading'. Some of the young people discussed peer-to-peer selling, especially when they were aged under 18; friends who could be served in shops would buy them and sell them on.

'I started vaping similar to you because my family were vaping or smoking and I wanted to try it and then when I was at college, everyone else like, it's basically the same story everyone else would go out to vape and you want to go join them to go outside and like have a break and stuff like that and I just kept it up really cause it tasted nice.'

(YP05, Youth Group)

Family

Beliefs about parental views varied. Some young people concealed their vaping from their family due to fears, or actual parental expressions, of disapproval, disappointment or concerns about possible health harms. Others reported indifference, acceptance or actual vaping among family members, and felt comfortable vaping in front of their family. A few commented that past worries about negative family views had abated after reaching age 18, when they could purchase vapes legally and could now vape openly.

'They do not like me doing it but then again, they kind of know, they told me to stop. I did not really listen,

and now I'm kind of a bit older and just kind of getting to that point where, like, in a few months, I'll be old enough to do it anyways. Like maybe they feel as though it's a little bit pointless telling me to stop it, because I'm just not going to.'

(YP27, Personal Contact)

Many commented that parental smoking or vaping could influence the likelihood of a child starting to vape through familial normalization. A couple of young people stated that their family members' vaping had directly influenced their vaping initiation through access to (older style) vapes and it was seen as an acceptable behaviour. There were examples given of family members buying them vapes and passing on vaping knowledge. In two instances, this had been to assist with smoking cessation.

'I was smoking cigarettes and she did not like it. So, she said to just vape instead. It's what she does.'

(YP12, Community College)

Organization/community level

Community

The young people believed that vaping disposables was common, accepted and normalized in their community. Many stated that they used disposables 'everywhere' including friends' houses, in the car and while shopping. Using disposables on a night out in the smoking area of a club or pub was mentioned by a few as a way of instigating or maintaining relationships. Some discussed 'stealth vaping'; that, is using disposables discreetly inside public spaces where vaping is forbidden, including the bus, a cinema, a bowling alley and a work-place.

'they are just everywhere. Guarantee you if you walk to say, you can walk two-minutes in the city centre and see like a million of them. And also, the use of them inside as well. There's definitely those people who just do not care, and just use it inside.'

(YPO6, Personal Contact)

Although the young people had left school, many discussed their past vaping behaviour at school. Prohibition policies had meant that these young people would often vape disposables in the toilets, where they would sometimes meet to share devices. Consequences for vaping ranged from confiscation, informing parents, isolations and even exclusions. However, these consequences were not reported as a deterrent but instead added to the excitement of undertaking an illicit behaviour. Now at college or university, most of the young people generally adhered to policies of vaping outside or in designated areas only. These policies encouraged groups of young people to congregate together, which reinforced vaping disposables as a peer-driven behaviour.

Some of the young people described schools as places where disposables were bought and sold. They explained that older children who were served in shops would sell them on for profit. The most popular purchasing location was the 'corner shop' (small independent grocery stores). Their main reason for buying from these shops is because age identification proving they were aged over 18 was rarely sought. One young person even commented that they had previously been served in their school uniform. A few of the young people stated that they did not try to buy vapes from vape shops or supermarkets because they perceived that they would almost certainly be asked to provide identification. Young people had acquired local knowledge of which shops in their community would serve them. Those aged 18 years or over continued to purchase disposables from corner shops because they perceived them to be better value, especially as they could buy illegal devices capable of thousands of puffs.

'I'm sure there's probably so many shops that sell them, but obviously being underage, it's more like specific ones I have to go to, which do not ask for ID.'

(YP27, Personal Contact)

On-line communities

The young people described disposable use being a normalized behaviour in the on-line communities they engaged with. Images and videos of young people vaping were commonly described, and some used Snapchat to converse about vaping, compare flavours, share photos and videos and, for a few, to buy from peers. However, some young people commented that they did not engage with social media, or that their vaping was not influenced by it. On-line purchasing and tricking the on-line age verification process was also discussed.

'Pretty much any picture you see of people my age [on social media], you'll be able to spot a vape or a disposable vape, and I feel like that it sort of gets in your head a bit. Well you see a lot of people like on social media, on TikTok like young people vaping and it's like everyone's doing it, it's kind of become like a trend everywhere you go.'

(YPO6, Personal Contact)

Society/policy level

Media

Young people reported hearing overwhelmingly negative stories around disposables in both mainstream media and social media, including content provided by medical influencers. Many stories they recounted were related to negative health impacts such as lung damage, hospitalization and even mortality. 'Popcorn lung' was perceived by a few young people as a proven consequence of vaping because of

what they had seen in the media. A couple of young people discussed sensationalist stories about e-liquid content, such as it containing urine.

'I remember seeing something on the news about like the dangers of vaping. I have not really seen much positive things, more like negative, like the dangers and things like that.'

(YP27, Personal Contact)

Some commented on the intense scrutiny youth vaping received in the media compared to youth smoking which was seemingly not of interest.

'It's always just like how bad it is and how there's so many health problems and how everyone needs to ban it and young people are dying and being put in hospitals over it and stuff like that but the same issue could be said for smoking like you know, young people smoke too but that was never talked about in this much of an extent, as it is now. You know, I mean, like I've known people who were like, 13 who have started smoking and I never hear about that in the media.'

(YP04, Youth Group)

Marketing

Most young people reported seeing promotion of disposables outside shops via sandwich boards communicating deals, and colourful displays within shops. They felt that the promotion was visible and 'unavoidable'. All the young people discussed the deals that shops offered, which seemed to vary considerably depending on the area and shop. This was especially true for non-regulated and counterfeit devices, which almost every young person used interchangeably with legal devices depending on availability and affordability.

'it's like every corner shop now has like vape displays and all brand new vapes with like this deal or that deal like everywhere you go it's just like you have a vape shoved in your face.'

(YP02, Community Event)

Many stated that they liked the bright colours, packaging, funny images and creative flavour names, which most felt were aimed at children. A few stated that the packaging did not influence which devices they picked, seeing it as irrelevant or inconvenient. However, many said that it did influence their decision, with a couple collecting packaging and old devices. One young man said that he made models out of packaging and one young woman stated that she liked to colour co-ordinate her disposable to match her outfit. A few young people discussed how the packaging style was in complete contrast to cigarette packaging, which they viewed as 'scary'.

'They're so pretty. I keep all my packaging.'

(YP22, Community College)

Regulation

The young people felt that youth disposable use was looked down upon by society. Like wider society and the media, most of the young people subscribed to this discourse that disposables were a danger to young people. Interestingly, however, they did not necessarily apply it to themselves, but to children younger than them, giving examples of primary school aged children using disposables:

'society does not like young people vaping and like they keep calling it like the "crisis of young people vaping" but I think it's a different issue. I do not think it's got to do with young people at all. Young people should not have access to vapes, and if they are, then that's the shop owner's problem'.

(YP04, Youth Group)

The environmental impact of disposables was also given as a reason for banning disposables by some of the young people. While most supported some sort of regulation, a few did not agree with prohibition. They felt that calls for banning disposables were over-reactions and that they should be allowed to choose what they put in their bodies, especially if they perceived it to help with their mental health. These young people were also acutely aware of perceived adult hypocrisy around alcohol use compared to vaping and adults engaging in different, less scrutinized, behaviours which harmed the environment.

'You want to go and go down the pub each Friday night and have a glass of wine, that's up to you. If I wanna go down the corner shop each Friday night and buy a vape for me, that's on me. So, why is it different to drinking alcohol and vaping? It's my preference, it's my life, let me f**k it up or let me live'.

(YP24, Community College)

Most of the young people believed that if disposables were banned, they would be able to continue using them by stockpiling or purchasing illegally (as many of them were currently doing). They made comparisons to illegal drugs such as cannabis, which they felt was easy to purchase. A few young people commented that they would buy a refillable device if disposables were banned, and a few believed that people, including themselves, would smoke instead.

'if you get rid of the vapes, people are just gonna start smoking.'

(YP18, Community College)

DISCUSSION

In this qualitative study we clearly heard that disposable vapes are an attractive product for young people. Aspects of disposables that seemed particularly attractive were the small size, ease of use and accessibility, the colours and flavours and social aspects, such as sharing with peers. These themes are similar to other qualitative studies [10,17] and a recent systematic review [18], although the data reported here draws specifically upon young people's experiences of disposable vapes. The data demonstrate a unique role for disposables that is separate from previous smoking identities, unlike previous qualitative research with young people on e-cigarette use that pre-existed the availability of disposables [19,20]. We found reported widespread engagement with potentially risky practices, including purchasing illicit disposables, 're-charging' devices by dismantling them, and (older) young people purchasing disposables to sell on to young people.

There was marked and consistent confusion around the potential health risks of vaping, as other studies have also recently reported [21]. The majority of our sample saw the harms of vaping as equivalent to tobacco smoking. This may underpin the reporting of interchangeable vaping and smoking behaviour, as most participants were also using tobacco. Participants could recall media stories about the dangers of vaping very clearly, but could only recall limited information on the harms of smoking. In the United Kingdom in recent years there has been a significant decline in funding for public health campaigns on the harms of tobacco smoking [22], yet sustained and widespread media attention to vaping, and particularly youth disposable vaping, which can be reflected in our data through young people's awareness of vape harm messages. This was apparent in the data, as conflicting stories were recounted as having been heard in the media which may be consequential for harm perceptions of both tobacco and vaping. Despite these messages, concerns about health clearly did not impact greatly upon this population of continuing regular disposable vapers.

The cost, design and accessibility of disposables were key influences on use. Concern about environmental harms was also expressed, so might be an aspect to emphasize in interventions to prevent uptake of vaping, alongside increased cost/taxation. However, it is clear from this sample that there may be unintended consequences of price rises, including increased tobacco smoking.

Vaping was perceived to play a functionally positive role in these young people's lives. On an individual level, some reported vaping to help them cope with stress or anxiety. The products were also clearly an important part of young people's identity, with use being normative within peer groups. Most initiation and experimentation occurred with friends, and there was a culture of buying together, sharing, discussing flavours and vape 'tricks'. Some young people reported heavy dependence, but others reported vaping specifically for social purposes, seemingly able to cope without vaping in other situations. For these people, situationally specific use suggests a strong social function and association.

The young people in this sample did not appear to be particularly influenced by family, teachers or regulations. Although vaping was

clearly tolerated within some families, others disapproved, with limited impact on the young people's use. Schools responded to vaping in various punitive ways which also seemed to impact very little upon behaviour. Young people were not always aware of regulations, but were very able to circumvent any restrictions, by choosing illicit devices and by purchasing from known 'permissive' shops where their age would not be asked. Banning or restricting sales was felt to be an inappropriate potential response to the issue as young people thought bans would make little difference, or they would just smoke tobacco instead.

Limitations

This was a modest qualitative study with a selected sample of young people reporting regular disposable vaping. Although accessing individuals from relatively deprived areas was a strength of the study, it means that the sample may not be representative of the majority of young people. Specifically, our sample were all of white British ethnicity, and therefore the views of ethnic minorities were not captured. However, the widespread prevalence of disposable use by young people [3] suggests that the views reported in this paper are at least reflective of a general trend among young people. Our approach of dyad-guided interviews was novel and insightful, resulting in 'naturally occurring' data. However, being unguided by an interviewer meant that interviews varied in quality and also depth of description. Given the very strong negative view of disposable vapes which young people perceived from the media and society generally, it is perhaps unlikely that the topic posed any great potential for social desirability bias in the responses, such that the dyad approach may not have gleaned especially novel data. These data were supplemented by researcher guided interview data, giving depth of understanding with little difference in emergent themes.

CONCLUSION

The use of disposable vapes is normalized among young people, who try them at a young age. Features that encourage this are ease of use, accessibility, range of colours and flavours and social aspects that make their use integral to peer networks. These therefore offer potential targets for reducing young people's use of disposable vapes by tighter enforcement of age of sale and restricting packaging and marketing. However, policymakers should bear in mind that our evidence suggests that these sorts of interventions have the potential for significant unintended consequences, including increased use of illicit vapes and, most worryingly, increased tobacco use among young people. It is also noteworthy that, despite restrictions, young people below the legal age of purchase are still able to access tobacco easily. Therefore, any interventions to combat use of disposables may need to be accompanied by policy interventions to reduce access to illicit vapes and tobacco and increase awareness of the relative harms of tobacco compared to vapes.

AUTHOR CONTRIBUTIONS

Caitlin Jade Notley: Conceptualization (equal); data curation (equal); formal analysis (equal); funding acquisition (lead); methodology (equal); supervision (equal); validation (equal); writing—original draft (lead); writing—review and editing (lead). **Anna Varley:** Conceptualization (equal); data curation (equal); methodology (equal); project administration (equal); writing—review and editing (supporting). **Ian Pope:** Conceptualization (equal); supervision (equal); writing—review and editing (supporting). **Lynne Dawkins:** Conceptualization (supporting); funding acquisition (supporting); methodology (equal); writing—review and editing (supporting). **Emma Ward:** Conceptualization (equal); data curation (equal); formal analysis (lead); methodology (equal); project administration (equal); software (equal); visualization (equal); writing—original draft (supporting); writing—review and editing (supporting).

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DECLARATION OF INTERESTS

C.N. has received an honorarium from Vox media company for filming a ‘nicotine explainer’ on the role of nicotine in addiction. L.D. has acted as a paid consultant for Johnson & Johnson who manufacturer smoking cessation medications. All other authors have no conflicts of interest to declare.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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