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Perceptions towards electronic cigarettes for smoking cessation among Stop Smoking Service users

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Statement of contribution

What is already known on this subject?

- Research suggests that e-cigarettes may help smokers quit smoking but further studies are needed.
- Electronic cigarette use in Stop Smoking Services has increased substantially in recent years, although e-cigarettes are currently not regulated.
- There is debate within the academic community regarding e-cigarette efficacy and safety.

What does this study add?

- Service users interviewed in the current study felt uncertain regarding e-cigarette efficacy and safety.
- E-cigarette ever users viewed e-cigarettes as effective and safe, more often than never users.
- Accurate and up-to-date education will enable service users to make informed treatment decisions.

Abstract

Objectives

Electronic cigarettes (e-cigarettes) are promoted as smoking cessation tools, yet they remain unavailable from Stop Smoking Services in England; the debate over their safety and efficacy is ongoing. This study was designed to explore perceptions and reasons for use or non-use of electronic cigarettes as smoking cessation tools, among individuals engaged in Stop Smoking Services.

Methods

Semi-structured telephone interviews were undertaken with twenty participants engaged in Stop Smoking Services in the Northwest of England. Participants comprised of both individuals who had tried e-cigarettes (n = 6) and those who had not (n = 14). Interviews were digitally recorded and transcribed verbatim. The transcripts were subject to thematic analysis, which explored participant beliefs and experiences of e-cigarettes.

Results

A thematic analysis of transcripts suggested that the following three superordinate themes were prominent: (1) self-efficacy and beliefs in e-cigarettes; (2) e-cigarettes as a smoking cessation aid; (3) cues for e-cigarette use. Participants, particularly never users, were especially concerned regarding e-cigarette efficacy and safety. Overall, participants largely expressed uncertainty regarding e-cigarette safety and efficacy, with some evidence of misunderstanding.

Conclusions

Evidence of uncertainty and misunderstanding regarding information on e-cigarettes highlights the importance of providing smokers with concise, up-to-date information regarding e-cigarettes, enabling smokers to make informed treatment decisions. Furthermore,

identification of potential predictors of e-cigarette use can be used to inform Stop Smoking Services provision and future research.

Perceptions towards electronic cigarettes for smoking cessation among Stop Smoking Service users

Electronic cigarettes (e-cigarettes), also known as vapourisers or electronic nicotine delivery systems, are battery-powered nicotine delivery devices, which tend to be marketed as a less harmful alternative to smoked tobacco (Bauld, Angus, & De Andrade, 2014). E-cigarette use now appears to be prevalent amongst general populations in England; a recent survey estimated that 21.3% of current and recent former smokers reported any use of e-cigarettes (West, Beard, & Brown, 2015). Furthermore, it has been suggested that more than 6000 premature deaths per year could be avoided in the UK for every million smokers who convert to e-cigarettes (West & Brown, 2014).

Stop Smoking Services (SSS) in England provide evidence-based behavioural and pharmaceutical interventions to support smokers in quitting smoking and such services have proven to be highly effective in reducing smoking prevalence (Ferguson, Bauld, Chesterman, & Judge, 2005; Judge, Bauld, Chesterman, & Ferguson, 2005). Currently, the National Institute for Health and Care Excellence (NICE) (2013) recommend the use of licenced nicotine containing products to aid smoking cessation. E-cigarettes are not presently licensed and so, they are not recommended or prescribed within UK health services, including SSS. However, SSS practitioners are currently encouraged to be open and supportive to service users interested in trying e-cigarettes (National Centre for Smoking Cessation and Training, 2014).

There is currently limited research regarding e-cigarette use and perceptions within SSS. Beard, Brose, Brown, West, and McEwen (2014) initially documented increases in e-cigarette use within SSS, with 90% of practitioners reporting e-cigarette use among service users. Similarly, Hiscock et al. (2014) also reported significant increases in e-cigarette use within SSS between 2011-2013, whilst additionally highlighting practitioner uncertainties

regarding the provision of advice on e-cigarette use and safety. Sherratt, Marcus, Robinson, Newson, and Field (2015) surveyed SSS users and found that 51.7% had tried e-cigarettes. Furthermore, e-cigarette risk perceptions were significantly associated with e-cigarette use ($p < 0.001$), suggesting that smokers who view e-cigarettes as less harmful were more likely to use them.

Debate within the academic community regarding e-cigarette safety and efficacy is ongoing (Ashton, 2014; Watson & Forshaw, 2014). A Cochrane review suggested that e-cigarettes appear to help smokers stop smoking (compared to placebo e-cigarettes) and aid smokers in reducing cigarette consumption (McRobbie, Bullen, Hartmann-Boyce, & Hajek, 2014). Moreover, the randomised controlled trials included in the review reported no serious adverse events associated with e-cigarette use; however, the authors acknowledged that the review was based on a small number of trials, low event rates, and wide confidence intervals around the estimated effect sizes. A more recent meta-analysis (Allehebi, Khan, & Stanbrook, 2015) suggested that at one month, e-cigarettes significantly improve the prevalence of smoking abstinence among quitters, although this effect was not observed over longer periods of three or six months. Furthermore, adverse effects of e-cigarette use noted in this review included dry cough, throat irritation, and shortness of breath. The incidence of serious adverse events did not differ between e-cigarettes and placebo e-cigarettes, but e-cigarette use was associated with a higher rate of adverse effects than nicotine patches. Allehebi et al. (2015) suggest that whilst e-cigarettes remain unregulated, those seeking to quit smoking should use more established smoking cessation aids.

The current study primarily attempts to identify motivations to e-cigarette use among SSS users, and secondarily, considers any differences in beliefs between e-cigarette ever users (participants who currently or have previously used e-cigarettes) and never users (participants who have never tried e-cigarettes). By conducting this research, knowledge

regarding the motivations of e-cigarette use among SSS users will be investigated and gaps in e-cigarette understandings among service users will be identified. Both of the aforementioned outcomes have important implications for areas of SSS provision, including service planning and staff training; ultimately, improvements in SSS provision will influence smoking cessation success rates.

Methods

To our knowledge, previous research has not explored e-cigarette perceptions and experiences among treatment-seeking smokers and therefore, a qualitative approach was adopted; a qualitative approach can be particularly useful in circumstances whereby the area of research investigated is novel or if the phenomena explored is complex or dilemmatic (Smith, Michie, Stephenson, & Quarrell, 2002). An inductive data-driven thematic analysis (TA) has been utilised for this study as it provides a theoretically flexible approach, capable of providing detailed accounts and exploring patterned meaning across the whole dataset (Braun & Clarke, 2006). Thematic analysis has been used extensively across health and wellbeing research and is particularly relevant to applied research settings, such as SSS (Braun & Clarke, 2014).

Participants

An opportunity sample of twenty participants were recruited from SSS in the Northwest of England. All but one of the participants were White British (n = 19, 95%) and the majority of participants were male (n = 14, 70%). Participant median age was 51.5 years old (range 25-59). The rolling programme approach adopted by this SSS enabled us to capture e-cigarette perspectives among service users at varying stages of the smoking cessation process. Most participants (n = 13) were recent former smokers (i.e. they had not smoked within at least the last 7 days) and just under a third of participants (n = 6) had used e-cigarettes. Regardless of current smoking status, participants had or were (dependent on

smoking status) smoking a median of 30 tobacco cigarettes per day (range 10-50). Full ethical approval for the research was obtained from the local National Research Ethics Service Committee. Participants were informed that they could withdraw from the study at any time, that data would be anonymised, and that the results of the study might be published in a scientific journal.

Materials

Telephone interviews were undertaken for the current study. Some researchers argue that telephone interviews may inhibit rapport between interviewer and participant; however, telephone interviews can be beneficial in that they increase participant anonymity in relation to studying sensitive issues and they also reduce costs in relation to time and finances, such as travel expenses (Irvine, Drew, & Sainsbury, 2013). A topic guide was prepared prior to the interviews based upon previous quantitative pilot work and literature. Open-ended questions were asked in relation to e-cigarette awareness, use, and beliefs regarding safety and efficacy, for example: "Do you know of any risks at all in relation to electronic cigarettes?" and "Some people feel electronic cigarettes area a good thing and some feel they're a bad thing; what is your view?") The topic guide was, however, flexible to allow the participants to express their own views and experiences. The interviews averaged 21 minutes in duration (range 15-60 minutes), were audio taped, transcribed verbatim and anonymised, using allocation of pseudonyms.

Procedure

Participants were recruited from drop-in sessions delivered by a SSS, hosted within community venues (e.g. GP surgeries, children's centres, libraries). SSS advisors introduced service users to the interviewer (first author). The interviewer was a thirty year old female, never smoker. The interviewer provided potential participants with a participant information sheet and gave them the opportunity to ask any questions. Those who agreed to participate

provided informed consent to be contacted to complete a telephone interview. Furthermore, completion of a brief questionnaire was delivered to all consenting participants at this stage, which enabled collation of details pertaining to participant characteristics.

Participants were contacted for the interview shortly after providing consent. Interviews began with the interviewer introducing herself, emphasising that the research was independent of the SSS, and explaining that the aim of the interview was to explore participants' perceptions and experiences of smoking behaviours. This was part of a larger mixed methods study which aimed to explore service users' experiences at different stages in the cessation process, and only the accounts of e-cigarettes are referred to here.

Data Analysis

The data was subjected to thematic analysis, informed by Braun and Clarke's (2006) step-by-step guide. The first author, a social sciences PhD student transcribed the data verbatim, following which, both the first and second authors read and re-read the transcripts in order to become familiar with the breadth and depth of data being discussed. Data was entered into NVivo 10 (QSR International, 2012) and initial codes were generated systematically on a line-by-line basis relevant to the research question. These codes were collated into potential themes. Subsequent creation and discussion of themes occurred through face-to-face and online discussions between the first, second and fifth authors, which ensured that that themes were applicable to both the related coded extracts and the dataset as a whole.

Our analytical strategy was inductive and data-driven, focusing upon identifying and discussing the salient themes repeated across and within transcripts. Themes were reworked and subsequently validated across the data. The second author was a senior lecturer in health psychology who was independent of the project, which minimised interpretive bias in

analysis. The fifth author was a lecturer in sociology and the first author's PhD supervisor. Finally, a thematic map was generated, themes were defined and transcript quotations were selected to illustrate the themes identified. The results section presents participant quotes alongside the age, gender and e-cigarette status of the respective participant.

Results

The final analysis resulted in the creation of three superordinate themes: (1) self-efficacy and beliefs in e-cigarettes; (2) e-cigarettes as a smoking cessation aid; (3) cues for e-cigarette use. The first superordinate theme consists of two master themes, including "Uncertainty" and "Misunderstandings". The second superordinate theme is comprised of the master themes, "Safety" and "E-cigarette efficacy". The final superordinate theme includes the master themes, "Endorsement" and "Availability" (See Figure 1).

Self-efficacy and beliefs regarding e-cigarettes

Self-efficacy and beliefs regarding e-cigarettes is the first superordinate theme to be discussed. Glanz, Rimer, and Viswanath (2008) described perceived self-efficacy as one's own perception towards his or her capabilities to successfully perform a behaviour (i.e. e-cigarette use), which is necessary to achieve a given attainment (i.e. smoking cessation). Participants' beliefs regarding the consequences of using an e-cigarette on the success of their smoking cessation are underpinned by the two master themes: "Uncertainty" and "Misunderstandings"

Uncertainty. The results suggest that many participants felt uncertain or lacked confidence in regard to the use and content of e-cigarettes. This was most evident amongst never e-cigarette users (i.e. those who had never used an e-cigarette) compared to ever e-cigarette users (i.e. current or former e-cigarette users). Although never users typically understood the principles of e-cigarette use, most described use and content with uncertainty.

> I don't know, it's some kind of oil isn't it? And it's a flavour, you know, you pick your flavour of your ciggy? You know, what you used to smoke and stuff and I do know quite a few that have them but they don't smoke it like you would smoke a ciggy (59, Female, Never).

Never users were typically more uncertain regarding the use of e-cigarettes, which might suggest that self-efficacy regarding the use of e-cigarettes may contribute towards use. One e-cigarette ever user attributed discontinued e-cigarette use to her uncertainty regarding e-cigarette content and safety, "I bought one, but at the same time, I don't, I just don't trust them. Everyone keeps saying 'oh it's vapour' but I don't trust them." (57, Female, Ever). This suggests that insufficient education regarding e-cigarette use and content may deter use amongst some ever users, as well as never users.

Misunderstandings. It is noteworthy that throughout the data, participants referred to e-cigarettes as e-cigs, electronic cigarettes, and flavoured ciggys. Participants referred to using e-cigarettes, smoking, and vaping behaviours. Some participants appeared to misunderstand aspects regarding e-cigarette content, which could have contributed towards uncertainty of use. Several participants suggested that e-cigarettes may contain tar, tobacco, toxins, or toxic chemicals.

> I'm sure, you know when you go to these shops and they ask you, what brand cigarettes you smoke and they fill the electronic cigarettes with, it's like a tar. That's what I heard now, I don't know, what I have just heard, but they put like a tar… (49, Female, Never).

One participant explicitly described how they were deterred from using e-cigarettes as they believed that tobacco was present in e-cigarettes, "I just don't think that meself it's worth bothering with because you're still getting the tobacco aren't you?" (48, Male, Never).

This highlights how inadequate or inaccurate sources of information may have influenced decisions regarding e-cigarette use. This might suggest that if never users expressed greater confidence in their ability and knowledge regarding e-cigarette use, this would enable them to make more informed treatment decisions.

E-cigarettes as a smoking cessation aid

The second superordinate theme: "E-cigarettes as a smoking cessation aid" was denoted by the two master themes, "Safety" and "E-cigarette efficacy". This theme highlights how participants' beliefs about the use of e-cigarettes may facilitate or impede their smoking cessation efforts. The results suggest that this major theme is closely linked to the aforementioned theme, "Self-efficacy and beliefs regarding e-cigarettes". Many participants who described greater uncertainty surrounding self-efficacy and e-cigarette use were often more likely to perceive e-cigarettes as harmful or ineffective as a smoking cessation tool.

Safety. Safety appeared to be an important concern for all participants. E-cigarette ever users tended to perceive e-cigarettes as safer than smoked tobacco, "Well I mean, to me, I know they're not as harmful as cigarettes." (59, Male, Ever). Several users justified their perceptions, by recalling specific differences between smoked tobacco and e-cigarettes in regard to harm, "I can't see them being as harmful (as smoked tobacco) because there's no CO_2 in them" (40, Male, Ever). However, it is noteworthy that regardless of e-cigarette use, the language here indicates acceptance of e-cigarettes relative to the comparison of health risks against using tobacco cigarettes, as opposed to stating there are no health risks to using e-cigarettes per se.

Three never users also made comparisons between the health risks associated with e-cigarettes and tobacco cigarettes: For example, one participant explained, "These electronic

cigarettes, they're an alternative… it takes you away from the carbon monoxide and other toxins that are inherent in smoking" (54, Male, Never). Despite this, typically never users were substantially more cynical regarding safety, often expressing concerns regarding the content of e-cigarettes "I think there might be (risks) because looking at them, it's just like having a ciggy. It's just there all the time and I know it's not smoke or whatever it is but it was just all the time" (58, Male, Never), and deficiencies in research were also noted.

> As I say, they've done studies on it and stuff but no one really knows if there is any health risks at the moment with using them… well there could be a toxin in it that we don't realise and that could be damaging your health in time" (38, Male, Never).

E-cigarette efficacy. The second master theme, "E-cigarette efficacy" as a smoking cessation aid was a key consideration for participants. A number of ever users (*n* = 3) found e-cigarettes to be beneficial in reducing cravings and sustaining abstinence from tobacco smoking. For example, one participant commented "It does do your cravings" (56, Male, Ever), and another reported, "I thought it was good that if you do feel like a ciggy" (59, Female, Ever). A number of never users also acknowledged the potential for e-cigarettes as a smoking cessation tool (*n* = 4), although never users were less explicit and certain regarding efficacy. For example, one never user said, "Well personally, I see it as an aid to stopping" (40, Male, Never) and another explained, "I don't know, it might work for some people" (58, Male, Never).

Generally, participants supported the assumption that for some smokers, e-cigarettes may enhance smoking cessation. However, both ever and never e-cigarette users identified unfavourable similarities between e-cigarettes and smoked tobacco. For example, participants associated e-cigarettes with: (1) behaviours linked with tobacco smoking (e.g. mimicking aspects of the physical experience of smoking); (2) nicotine addiction; and (3) long term use. In regards to behaviours associated with tobacco smoking, one never user

commented, “I haven’t tried them. They are just as bad like (as regular cigarettes) – you’re still putting something in your mouth” (25, Male, Never), whilst another stated, “It has this steam of like… and the same hit that I was getting from cigarette” (59, Male, Ever). Many participants considered how e-cigarettes were associated with maintenance of habits and routines acquired through smoking. For example, one ever user commented, “… say I’m cleaning up and I’d get to finishing the hoovering or something, that’s when I’d go and have (an e-cigarette), so it was keeping the habit going” (59, Female, Ever).

In relation to nicotine addiction, both ever and never users described how e-cigarette use was unfavourably associated with maintenance of nicotine dependence, “It’s still nicotine filled isn’t it? So, to me, you’re fooling yourself really… ‘cause you’re still getting the nicotine that your body is craving” (34, Male, Never). Such comments suggest that long term nicotine dependence was disapproved of, independent of tobacco smoking.

With regards to long term e-cigarette use, many participants believed that e-cigarette users often become reliant on them long-term, which was typically viewed negatively, “I was speaking to a fella the other day and he’s been on one of them for three years!” (56, Male, Ever). This was seemingly viewed as problematic for some participants, and acted as a deterrent to try e-cigarettes as a smoking cessation aid, “I don’t think they’re ever going to give up. They’re just substituting rather than, or probably still smoking with it” (53, Male, Never). And “I didn’t want to buy one (e-cigarette) because it still reminded me of smoking” (38, Male, Never).

Overall, beliefs surrounding the identified similarities between e-cigarettes and smoked tobacco appeared to influence perceptions of e-cigarette efficacy overall. The findings suggest that participants typically did not characterise smoking cessation success simply by cessation of smoked tobacco, but by cessation of both smoked tobacco and nicotine containing products overall. The identified similarities between e-cigarettes and

smoked tobacco are undoubtedly part of the appeal for many smokers intending to quit smoking; however, many participants in the current sample explicitly described how e-cigarettes reminded them of smoking, which was a deterrent of use.

Cues for e-cigarette use

The last superordinate theme identified was "Cues for e-cigarette use", which was characterised by the two master themes, "Endorsement" and "Availability". This theme is influenced firstly, by the current lack of licencing with regards to e-cigarettes in the UK and plans to licence some forms of e-cigarette products in the future, and secondly, by the perceived acceptance or non-acceptance of using e-cigarettes among others.

Endorsement. Regardless of e-cigarette status, most participants referred to issues regarding regulation and control of e-cigarettes (n = 12). The recent proposal for regulation of e-cigarettes was viewed positively and no participants expressed views in which regulation was opposed. The comments suggest that the lack of regulation may presently be a barrier to using e-cigarettes as a smoking cessation tool; however, the introduction of regulation may be viewed, by some, as a safety endorsement which could result in increased e-cigarette up-take.

> I do think there needs to be regulations too. Well regulations may be too far but something to actually make sure they've got safe limits because I've read some of the things in the news and they were saying in some of the liquid, they were actually finding toxins (40, Male, Never).

Another participant described similar concerns and suggested a lack of trust regarding the production and distribution of e-cigarettes presently, due to the lack of regulation.

> The refills on them, you can go anywhere to buy them and who's controlling it? Is it those that you're getting? … I thought you might need ah, I don't know, a

> prescription to go the chemist, which is sort of controlled you know (53, Male, Never).

The results suggest that regulation may be viewed as an endorsement of e-cigarettes for some participants who feel uncertain or distrustful of e-cigarette safety. However, e-cigarette use within social networks appeared to be a particularly powerful cue for e-cigarette use. Five participants provided accounts of significant others who had used e-cigarettes; ever users or participants considering trying e-cigarettes were more likely to provide reports of significant others who had stopped smoking using e-cigarettes, "It could help people come off. I know a few people who have come off through them, that have, you know?" (56, Male, Ever). One participant described several significant others, who had used e-cigarettes to successfully stopped smoking, which appeared to increase his perceived efficacy of e-cigarettes as a smoking cessation tool.

> I know that for certain people they do work. I have two sisters and a brother. Now the entire family smoke, err, and I know both of me sisters have tried going down the electronic cigarettes route… so while it's working for her, I do consider it a good thing." (40, Male, Never)

Comments pertaining to the identified similarities between smoked tobacco and e-cigarettes (as explored throughout the aforementioned theme "E-cigarette efficacy") might suggest that some participants judge other e-cigarette users, as users might be classified as smokers despite not using smoked tobacco, "I turned around and said 'What are you still smoking (an e-cigarette) for?' and he said 'because I enjoy a ciggy, I enjoy something in me hands'... I thought it was a waste of time" (56, Male, Ever). Here the participant appears to be making downward social comparisons to others attempting to quit smoking, judging their choice to use e-cigarettes as a smoking cessation tool This demonstrates how the documented

use of e-cigarettes among significant others may also be perceived negatively, which demonstrates how social endorsement or even comparison, could contribute towards the formation of attitudes around social acceptability.

Availability. In addition to endorsement, availability appeared to be an additional cue for e-cigarette use. The majority of participants (*n* = 11) commented on the increasing presence of e-cigarettes in society, "Well there's a shop on (name removed) Road and I'll tell you now, every time I've gone past, it's always been packed" (49, Female, Never). Furthermore, several users were able to cite examples of local e-cigarette distributors. For example, one reported, "Well, I was going to St. John's market a couple of months ago and there was a shop that had a stall and I just said, 'Can I try one?'" (59, Male, Ever). Another ever user described a relationship with a local distributor, "I actually know someone who owns a shop who sells them" (40, Male, Ever). Never users were typically less likely to cite e-cigarette sources or distributors. Potentially, this could suggest that increased e-cigarette availability may enhance e-cigarette uptake.

Cost of e-cigarettes was also an important factor associated with availability. Whilst participants acknowledged that there were costs associated with buying e-cigarettes and the vapours. Many participants suggested that smokers were turning to e-cigarettes as a less costly alternative to smoked tobacco (*n* = 5).

"Well, I think that's why a lot of people have gone for those electronic cigarettes because ok, I know apparently they're not cheap, you know, once you buy the cigarette, it's the stuff that you pay for to go in the cigarette. Obviously it's going to be cheaper than buying cheaper cigarettes" (49, Female, Never).However, one never user who expressed intentions to try e-cigarettes explicitly described how e-cigarette cost was a negative cue for use, "Yeah, well they're quite expensive aren't they? I think they should drop a little bit and give everybody a chance" (48, Male, Never). This suggests that economically deprived SSS

users may be less likely to try e-cigarettes as cost may prevent them from being a viable option. It may be that once e-cigarettes become regulated products, should they become available via NHS prescription, more SSS users will try e-cigarettes as a smoking cessation aid.

Discussion

The current study revealed that self-efficacy and beliefs regarding e-cigarettes, e-cigarettes as a smoking cessation aid, and cues to e-cigarette use were pertinent themes in exploring perceptions and experiences of e-cigarettes among SSS users. Regardless of the current debate in the academic community regarding the safety and efficacy of e-cigarettes (Ashton, 2014; Watson & Forshaw, 2014), it is apparent that e-cigarettes are being used by many SSS users as an aid for smoking cessation.

Many participants were unsure as to how e-cigarettes worked, what they contained, and misunderstandings were also apparent, which contributed towards uptake. It could be that information regarding using e-cigarettes within SSS was unavailable or limited. This corresponds with previous studies, which have highlighted that practitioners often express uncertainties regarding e-cigarettes (Beard et al., 2014; Hiscock et al., 2014); further e-cigarette training for SSS practitioners could improve practitioner knowledge and confidence, which in turn, could enhance service user understandings regarding e-cigarettes. Improvements in awareness and education may additionally be of importance to the general public, as most smokers do not engage in SSS.

The current findings can also be considered in reference to the Theory of Planned Behaviour (Ajzen, 1991), which might provide some guidance regarding relevant mechanisms to behavioural intentions around e-cigarette use for smoking cessation. Participants who deemed e-cigarette use as detrimental to smoking cessation more often

exhibited negative attitudes towards them. Participants were uncertain regarding the overall safety of e-cigarettes, particularly in relation to e-cigarette content and associated potential health risks; however, participants often compared the perceived harms of using e-cigarettes to those associated with smoked tobacco. Complementary to Rogers (2003) diffusion of innovations theory, e-cigarettes were perceived to be a new product with reduced health risks compared to tobacco cigarettes; for some SSS users, this appeared to justify using e-cigarettes.

The results regarding comparisons between e-cigarettes and smoked tobacco reflect previous research, whereby SSS practitioners typically expressed negative attitudes towards e-cigarette efficacy and e-cigarettes were perceived as promoting the continuation of smoking (Hiscock et al., 2014). This also fits with a previous survey of SSS users, which found that e-cigarette ever users tended to perceive e-cigarettes as less harmful compared to never users (Sherratt et al., 2015). Participants needed to believe that using e-cigarettes would complement their intended goal of successfully quit smoking; however, participants appeared to be less inclined to try e-cigarettes if their perceived behavioural control regarding use was deemed low (i.e. if they deemed e-cigarettes as a negative influence on their quit attempt, potentially due to the unfavourable associations made between e-cigarettes and smoked tobacco).

In regards to normative beliefs and subjective norms many participants perceived the paucity of research and current lack of regulation as a barrier to acceptance and use. However, in 2016, products which make medicinal smoking cessation claims and/or products containing nicotine above 20mg/ml will be subjected to a medicinal regulatory regime (Medicines and Healthcare Products Regulator Agency [MHRA], 2013) and therefore, e-cigarettes will be licenced by the MHRA. This is the first study that we are aware of which suggests that following regulation, many smokers will be inclined to try e-cigarettes. The

results imply that risk perception will likely be reduced in line with the introduction of regulation. Moreover, following MHRA regulation of e-cigarettes, SSS may eventually recommend and prescribe e-cigarettes. This will affect the availability of e-cigarettes making them more accessible to those wanting to stop smoking, particularly those who receive help with prescriptions and perceive cost to be a barrier to use. This has important implications for SSS provision and should therefore be explored further.

In relation to social acceptability, service users who viewed e-cigarettes as a continuation of smoking and perceived them as more harmful were less likely to have tried e-cigarettes. Physiological and behavioural associations were identified between smoked tobacco and e-cigarettes, such as the hand-to-mouth action and maintained nicotine dependence. These observed similarities evoked disapproval, particularly among never users who verbalised no intention to try e-cigarettes. "Cigarette-like enjoyment" has previously been suggested as a benefit of e-cigarette use (Barbeau, Burda, & Siegel, 2013; McQueen, Tower, & Sumner, 2011); however, the current study demonstrates how such similarities can be perceived by some as negative and therefore, could discourage use.

Lastly, the findings imply a close relationship between social endorsement and social acceptability; participants with an approving significant other who had used e-cigarettes were inclined to view e-cigarettes as an acceptable smoking cessation tool. Social relationships have been shown to influence an individual's likelihood of engaging in a health risk or promoting behaviour such as smoking cessation (Gough, Fry, Grogan, & Conner, 2009); therefore, social reactions pertaining to e-cigarette acceptability may promote or discourage use.

There are a small number of research limitations that should be considered. Firstly, associations between e-cigarette ever use and specific beliefs were identified but causality cannot be inferred. A longitudinal study might be necessary to fully explore the role of beliefs

on e-cigarette uptake or intention among SSS users. Secondly, as participants were recruited from a SSS in the Northwest of England, the results may not necessarily be representative of all service users across all SSS in the UK, or internationally. Lastly, although twenty participants were recruited, ever e-cigarette users, current smokers, females, and minority ethnicities were arguably under-represented in the sample, however, the study aimed to represent service user attitudes overall, as opposed to specifically e-cigarette users in service. Service users were the focus of the current study, which also highlights that the views expressed by participants are unlikely to be representative of current and recent former smokers not accessing services.

In conclusion, this study highlighted various potential factors implicated in e-cigarette uptake and indicated uncertainties and misunderstandings among service users. Comprehensive practitioner training should improve service user confidence regarding e-cigarette use and help to avoid misconceptions. A public health campaign regarding the regulation and use of e-cigarettes as a smoking cessation aid may also influence social acceptability and normative beliefs. Ultimately, it is important that smokers are provided with accurate and up-to-date information regarding e-cigarette use. Better education will enable smokers to make informed treatment choices and therefore, may enhance smoking cessation success.

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Figures

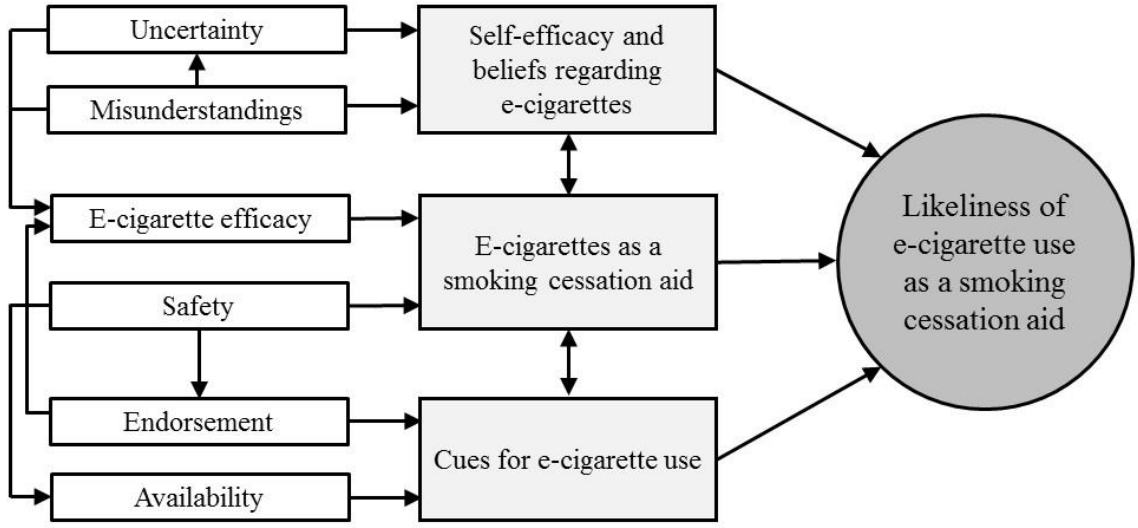

Figure 1. Observed psychosocial components of e-cigarette uptake: master themes, superordinate themes, and the potential outcome