

Knowledge, attitudes and beliefs towards waterpipe tobacco smoking and electronic shisha (e-shisha) among young adults in London: a qualitative analysis

Shrinal Kotecha¹, Mohammed Jawad² and Steve Iliffe¹

¹Department of Primary Care and Population Health, University College London, London, UK

²Department of Primary Care and Public Health, Imperial College London, Hammersmith, London, UK

Introduction: Waterpipe tobacco smoking (WTS), known in the United Kingdom as shisha, is popular among adolescents worldwide. Some electronic cigarettes are marketed in the United Kingdom as ‘electronic shisha’ (e-shisha). This study aimed to understand how WTS users view e-shisha and whether it could be used as a harm-reduction or cessation aid. **Method:** In-depth face-to-face interviews were conducted with 16 young adults recruited by snowball sampling in London, UK. Recurrent themes were derived iteratively through thematic analysis. **Results:** WTS is a socially acceptable activity, carried out at home or in a café. Peer influence and flavour play a key role in its use. Participants were aware of some health risks of WTS, although many accepted this risk and reported a need for more health-related WTS information. Although participants were familiar with e-shisha, there was no evidence of its use as a harm-reduction or cessation product. E-shisha tasted different to flavoured waterpipe tobacco and removed the positive social attributes typically ascribed to WTS. Waterpipe users felt e-shisha may encourage non-users to initiate cigarettes or WTS. **Conclusion:** Opinions of reduced risk in using WTS may be due to the lack of available information, misconceptions and its easy accessibility. E-shisha does not appear to play a role in WTS harm reduction or cessation. On-going research efforts should test educational interventions addressing the adverse health impacts of WTS in this population group.

Key words: prevention; qualitative research; substance use; tobacco industry; treatment and intervention; youth tobacco use

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Introduction

Waterpipe tobacco smoking (WTS), known in the United Kingdom as ‘shisha’, involves an apparatus where smoke sourced from a flavoured tobacco mixture is inhaled after passing through water (Maziak *et al.*, 2005). Waterpipe tobacco is thought to contain 30% tobacco with 70% honey,

humectants and fruit flavours, which give it a unique appeal and distinctive aroma (Knishkowsky and Amitai, 2005), a main motive for its use (Akl *et al.*, 2013). Recent longitudinal data suggest an upward trend of WTS across all ages, especially in the younger population. Although the Global Youth Tobacco Survey witnessed a net decrease in cigarette smoking among 13- to 15-year olds, an increase in tobacco use in other forms was indicated, attributable mainly to WTS (Warren *et al.*, 2009). The recent industrialisation of flavoured waterpipe tobacco, widespread social acceptance

Correspondence to: Shrinal Kotecha, University College London, Gower Street, London WC1E 6B, UK. Email: shrinal.kotecha.11@ucl.ac.uk

and globalisation are some of the reasons given for the rise in WTS (Maziak, 2011).

Despite evidence of its detrimental health effects (Akl *et al.*, 2010; Raad *et al.*, 2011), including significant toxicant exposure and increased risk of cancer, stroke and coronary heart disease (Monzer *et al.*, 2008; Shihadeh *et al.*, 2012), the United Kingdom has recently experienced a 5-year, 210% increase in the number of waterpipe-serving premises (BHF, 2012). National estimates show 1% of adults are regular waterpipe smokers; a figure 10-fold higher in the young South Asian community (Grant *et al.*, 2014). Among young people in the United Kingdom, WTS appears more prevalent than cigarettes (7 versus 3%) in some settings (Jawad *et al.*, 2013b), although robust data are lacking. Waterpipe premises are seen as socially acceptable environments for the non-drinking community and an alternative for young individuals who cannot access alcohol-selling venues (Nakkash *et al.*, 2011; Jawad *et al.*, 2013a).

The majority of waterpipe tobacco smokers have no intention to quit but believe they can quit anytime (Akl *et al.*, 2013). Motivations to quit often involve health concerns, but barriers to cessation include peer pressure, dependence and social characteristics (e.g. ambient atmosphere) associated with waterpipe premises (Akl *et al.*, 2013). Two randomised controlled trials on WTS cessation show promising results in favour of behavioural support (Dogar *et al.*, 2013; Asfar *et al.*, 2014); however, data are lacking on the effectiveness of other interventions. Much interest has arisen regarding the cessation effectiveness of electronic cigarettes, which appear to appeal to the cigarette-using community and appear to be as effective as other forms of nicotine-replacement therapy (Christensen *et al.*, 2014). Confusingly, some electronic cigarettes are marketed as electronic shisha (e-shisha) in the United Kingdom. These are flavoured, disposable versions of electronic cigarettes produced by the electronic cigarette industry (Andrade *et al.*, 2013); however, the literature lacks information on waterpipe users and electronic nicotine devices.

The UK evidence surrounding WTS remains poor, despite recommendations of the Department of Health describing it as a 'health risk warranting attention', particularly among young and ethnic population groups (Department of Health, 2011). We, therefore, sought to address

this by qualitatively assessing the knowledge, attitudes and behaviour towards WTS among young adults in London, aiming to understand how WTS users view e-shisha and whether it could be used as a harm-reduction or cessation aid. By virtue of the marketing stance of e-shisha (Andrade *et al.*, 2013), we hypothesised that waterpipe tobacco users may be interested in using e-shisha as a harm-reduction or cessation aid, a subject on which the literature is limited.

Method

Design, sample and setting

We conducted a qualitative analysis of face-to-face interviews among 18- to 24-year-old current waterpipe tobacco smokers. Current use was defined as smoking waterpipe tobacco at least once in the past 30 days (Maziak *et al.*, 2005; Maziak *et al.*, 2014). Our sample frame was young adults across London, United Kingdom, who were recruited through snowball sampling. University students and young adults are known to have the highest prevalence of WTS (Akl *et al.*, 2011), making them a population group to help answer this research question. A 'privileged researcher' from the South Asian community recruited peers and colleagues to instigate the snowball sampling process. This method has been used before to recruit waterpipe tobacco smokers in the United Kingdom (Jawad *et al.*, 2013a). Inclusion criteria involved age and currency of waterpipe use; those who could not speak English were excluded. We conducted in-depth face-to-face semi-structured interviews at local waterpipe premises, which are dedicated waterpipe-serving cafes or bars. Interviews were conducted at a convenient time for the participant on any day during the afternoon from January to April 2014. Afternoons are usually the least busy time for waterpipe premises, which allowed for interviews to be carried out in a quiet setting. This setting provided participants with a familiar, comfortable and accessible environment. Local waterpipe premises further offer an opportunity for first-hand observations of behaviours towards WTS. We conducted a pilot interview to validate the interview schedule, to determine the clarity of the audio recording, to determine the safety and practicality for conducting interviews in a waterpipe premises and to determine that

questions were unambiguous and gave the potential for detailed answers. No adjustments were made to the methodology as a result of the pilot interview.

Interview structure

We collected demographic data including age, gender, ethnicity and profession, as well as age of waterpipe initiation and current frequency of use. A series of open-ended questions covered four main areas: WTS habits, health effects, existing beliefs, attitudes and knowledge and view on e-shisha as a potential harm-reduction or cessation aid. Interviews lasted ~15–40 min. Although keeping the basic framework consistent, an iterative approach was used to allow modification and addition of questions as new concepts emerged. Participants were encouraged to freely express their views, ensuring robustness of the ideas generated while adhering to the broad aims of the study.

Analysis

To assess the validity of our findings, we carried out a member-checking process, confirming whether findings were correct and consistent with each participant's views, and this provided an opportunity to collect further data. This also allowed triangulation of data to verify findings. Data analysis was carried out after the interviews following

an iterative approach. Interviews were transcribed verbatim and a thematic analysis approach was used to analyse the transcripts. This involved gradually forming themes and categories, which could be explored in detail in subsequent interviews.

Through manual analysis, emerging categories were charted and organised according to relevant themes, and subdivided into related sub-topics to provide an adequate representation and classification of the data. These were then discussed and agreed upon by a second reviewer to improve reliability and minimise research bias. Triangulation of the data further increased validity.

Finally, four main themes were formulated and explored further to develop deeper meanings and theories relevant to the research aims. Theoretical saturation was subsequently reached after 16 interviews. All participants provided written and verbal informed consent before commencing each interview; the UCL Research Ethics Committee approved the study.

Results

Table 1 shows the relevant demographic characteristics of participants. There was an equal representation of male and female participants. Most participants were 21 years old (mean age = 21.3, SD = 1.1) and were first introduced to WTS

Table 1 Participant Information

Participant number	Age	Gender	Ethnicity	Occupation	Age first introduced to waterpipe tobacco	Frequency of waterpipe tobacco smoking
1	20	Female	Indian	Student	17–18	Once a week
2	21	Female	Indian	Student	15	Once a week
3	21	Male	Indian	Student	13–14	Once every fortnight
4	20	Female	Indian	Student	17	Once every fortnight
5	21	Female	White	Student	18	Once or twice a month
6	22	Female	Pakistani	Student	13	Up to 4 times a week
7	21	Female	Indian	Student	16	Once a week
8	22	Male	Tamil	Student	14	Once every two weeks
9	20	Female	Indian	Student	17	Once every two weeks
10	21	Male	Indian	Student	16	Couple of times a week
11	21	Male	Indian	Student	18	Once a week
12	21	Male	Indian	Student	15	Once or twice a week
13	21	Female	Indian	Student	17–18	Once or twice a month
14	21	Male	Indian	Student	17	Once every week or once every fortnight
15	24	Male	Indian	Student	19	2–3 times a month
16	23	Male	Indian	US Tax Associate	14–15	2–3 times a week

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in their teenage years. All but one were students, and 81.3% were of Indian ethnicity, although nearly all (93.8%) were of South Asian ethnicity. All were born in the United Kingdom, except one who was an international student born in Dubai.

Theme 1: Motives for use

Several aetiological factors explain waterpipe use, the primary one being sociability. WTS is considered to provide numerous advantages to young adults. Smoking in waterpipe premises allows users to make new friends and meet up with old friends. The practice is not limited to the café culture and is also flexible enough to be experienced at home. For those whose culture prohibits alcohol, WTS provides a religiously acceptable alternative away from typical alcohol-consuming venues such as bars and pubs. Waterpipe premises appear to create an enjoyable, relaxing and ambient atmosphere for individuals to escape from their daily lives. Both the atmosphere and the practice of smoking provide a source of relaxation for some. WTS is also used as a stress-relieving mechanism (Box 1).

This social acceptability appears to remove barriers to its use. Curiosity is a key motive for young, influential individuals to experiment and try this new form of tobacco smoking. Another significant motive is its unique feature of flavoured tobacco. Users are able to request or self-prepare flavoured concoctions according to their personal preferences, masking any pungent taste of

Box 1

'I think it's just another way to socialise, particularly amongst like Asian communities, erm purely because Muslim community a lot of them don't drink...their nights out consist of doing this'. (Participant 2, page 4, line 176–180)

'I like the head rush it gives you, I quite like the feeling, it relaxes me'. (Participant 7, page 3, line 115)

'Not the actual shisha itself, but mostly the setting, because you're just sitting there and you're chilling, that could be a stress relief yeah'. (Participant 13, page 2, line 64–66)

tobacco. Participants enjoyed the alluring atmosphere created by the smell and taste of the waterpipe tobacco (Box 2).

Participants considered this cultural phenomenon a fun and exciting activity to engage in. Although some expressed an obligation to conform to this behaviour, others described feeling tempted to and intrigued by WTS. Among more regular users, WTS shifted from an intermittent social activity to a regular tendency, which was heavily incorporated into a person's daily routine. In addition, a few participants found no other alternative to socialising except WTS (Box 3).

Box 2

'Lots of people I know smoke shisha and don't smoke cigarettes because they don't like the taste of it, whereas shisha tastes really nice'. (Participant 5, page 2, line 65–67)

'Women get excited seeing cherry, strawberry, bubble-gum etc flavoured shisha'. (Participant 16, page 3, line 133–137)

Box 3

'Initially, I didn't know what it was, I was curious, especially the first time'. (Participant 15, page 1, line 15–16)

'There's a lot more pressure on kids, especially on boys than girls, to kind of like fit in and be cool, and that's like what society is forcing people into doing'. (Participant 2, page 11, line 521–523)

'Once you do something it becomes habitual, that activity becomes normal and you want to go to a shisha cafe just because that's the normal thing to do, and you don't know what else to do'. (Participant 8, page 4, line 192–195)

Theme 2: Culture of WTS and waterpipe premises

Participants noted the establishment of numerous waterpipe premises in London, explaining the rising popularity of WTS in the United Kingdom.

The majority of participants considered WTS as a habit that developed due to increased accessibility to waterpipe premises. Participants perceived the industry as profitable and accessible, and high accessibility encourages them to smoke waterpipe further (Box 4).

Participants were generally aware that the cultural influence and heritage of WTS in the West is

Box 4

‘More and more places are being opened up everywhere all around town, there are different businesses, wanting to make money and things. They’ve obviously realised it’s a good mark up on the prices, on all the flavour and things, so why not keep opening more, and if you do that you do increase popularity and such like that’.
(Participant 10, page 3–4, line 141–145)

Box 5

‘It makes you feel as if you’re on holiday, like whenever I go it reminds me of like being in Dubai, on the balcony with like a shisha pipe’. (Participant 2, page 6, line 267–269)

‘The Arabic, Middle East, Indian culture, even for example now in America, it’s been a big, like rise, in the number of shisha cafes opened up, because people see it on TV, films, cinemas and well, smoking looks cool so everyone wants to do it’.
(Participant 16, page 2, line 55–58)

‘I mean it’s not just guys that are smoking shisha, you go to a shisha cafe and it’s pretty much even, 50/50 boys and girls’. (Participant 3, page 5, line 226–227)

‘Generally the older people have the view that women shouldn’t be doing it’. (Participant 2, page 15, line 728–729)

‘Personally, I think it’s unattractive when women smoke, but I have recently travelled to Dubai where women are very keen on smoking shisha, it’s the way they chill out and for them it’s socially accepted. Whereas, the men would smoke cigarettes or cigars, but shisha’s kind of accepted in culture and society’ (Participant 16, page 1, line 43–47).

derived from the Middle East, often providing some with a holiday ambiance. Although dominant in specific cultures, participants felt that the recent spread of popularity has resulted in worldwide attraction to WTS. There did not appear to be any particular gender disparity in use. Despite the social acceptability, there was some element of gender traditionalism towards WTS – that is, some criticism by males regarding the use of WTS by females (Box 5).

Theme 3: Health perceptions

Most participants appeared highly informed of the negative health implications of WTS, comparing the activity with cigarette smoking (Box 6).

Despite this increased awareness, participants did not appear to alter their behaviour. The main reason for this was due to frequency of use, as participants considered WTS to be acceptable and less risky ‘in moderation’, especially if they do not engage with it frequently. Other reasons included the social acceptability of the practice, easy accessibility and the belief that evidence pertaining to the health risks is not robust enough. Participants also felt that there is a lack of public health education on WTS, affecting their perception of its entailed health hazards (Box 7).

The regular use of WTS appears to provide participants with a pleasurable experience. Although participants appeared to enjoy the social atmosphere, mental effects and the physical act of WTS, there was no mention of cravings,

Box 6

‘I believe shisha is worse than smoking for you because of the intense duration that you do it over’.
(Participant 8, page 5, line 240–241)

‘I just picture it as smoking a cigarette for an hour, which is obviously pretty bad’. (Participant 10, page 7, line 325)

‘Well cigarettes use like a naked flame, whereas shisha has got charcoal burning and you know when a charcoal burns off you’ve got all this tar, carbon monoxide, all sorts of poisonous gases coming out from there’. (Participant 16, page 4, line 164–166)

withdrawal symptoms or other nicotine-modulated behaviour – that is, smoking alone for long periods of time or spending too much money on waterpipe tobacco. Finally, participants stated that they would be more likely to reconsider the risks of WTS, change their general attitude and health belief if further research presented proven information on its health implications (Box 8).

Theme 4: E-shisha

All participants appeared to be familiar with e-shisha. Some mentioned its positive aspects of increased portability, ease of use and cleanliness compared with WTS, but there was no mention of its use as a harm-reduction or cessation aid (Box 9).

However, most participants considered e-shisha to be incompatible with the WTS habit for several

key reasons. First, by virtue of e-shisha being a portable and, hence, personal smoking method, it removes the social environment that underpins and drives the WTS culture. Second, despite e-shisha's range of flavours (which are similar to WTS flavours), participants believe there is a difference in taste between the two smoking methods. Beyond the taste, participants describe a difference in the mental feeling and physical act of using e-shisha compared with WTS. However, due to its flavour and portability, some participants feel that e-shisha may encourage users to initiate or maintain WTS further. Ultimately, participants appeared to prefer the positive aspects of smoking an actual WTS (Box 10).

Box 7

'I don't go that often then I just think everything in moderation is fine'. (Participant 2, page 7, line 320–321)

'On a grand scale of things, there's a lot of other things that can give you cancer. Doing shisha like a few times, it's not really that big of a deal'. (Participant 10, page 6, line 252–254)

'I think people almost are happy to ignore the negatives of shisha because there is no concrete evidence'. (Participant 14, page 6, line 266–268)

'I think it's become accepted in society in the same way alcohol has...people are still going to do it regardless'. (Participant 16, page 7, line 334–340)

'There's not enough publicity about what shisha's actually doing to people, I guarantee if you ask a bunch of 100 people whether they think shisha is bad for you, at least 60% would say no to you'. (Participant 3, page 4, line 161–163)

'Cigarettes come with all sort of labels on them telling you they're harmful, you learn all your life that they're carcinogenic and many other things associated with that. With shisha, it seems like it's just a recreational past-time. You almost force yourself to believe that you're breathing in water vapour because that's what is at the bottom of the pot'. (Participant 14, page 4, line 160–164)

Box 8

'You kind of get addicted to the feeling it gives you and especially when you have an easy access you do want to do it quite often'. (Participant 7, page 4, line 148–149)

'I'm addicted to it...I just like the whole flavour, the whole mechanism of doing it, the process of doing it really'. (Participant 12, page 3, line 128–129)

'I think more awareness for a start, I think it's one thing to tell people it's really bad for you, if they could see how bad it was for you it would make a difference'. (Participant 9, page 10, line 463–465)

Box 9

'I like the fact that you can do it wherever you like, that's good'. (Participant 10, line 428)

'I think they're quite good, they're less mess, less hassle'. (Participant 15, line 267–268)

Box 10

'The e-shisha, instead of it being an alternative, it's kind of just a side product so you can do shisha in a cafe but when you're busy you can do it on the move'. (Participant 10, page 9, line 431–433)

'The whole point of shisha is to go to chill with friends, and I feel that like if I'm just sitting in my room with an e-shisha by myself it's just no point.

(Continued)

I wouldn't do that'. (Participant 9, page 9, line 428–430)

'You're not going to have 5 guys sitting around smoking e-shisha sticks, they'll probably go to a cafe where...it's a social atmosphere'. (Participant 16, page 6, line 274–277)

'It's just not the same feeling as when you're doing normal shisha...like you don't get enough smoke or anything like that, the taste, it's not exactly like that as well'. (Participant 12, page 11, line 490–492)

'I think it tastes different...it's not as nice to smoke, because it's kind of harsh and strong'. (Participant 5, page 7, line 314–315)

'I don't think it releases as much smoke, and it doesn't really make you feel as light-headed'. (Participant 7, page 9, line 398–399)

'The fact that you can smoke it the whole time, obviously with a shisha pipe you can't really carry it around the whole time, so people are going to end up smoking more if they do like e-shisha'. (Participant 5, page 8, line 373–375)

'Non-smokers could then be encouraged to smoke and try tobacco, like actual cigarettes and tobacco flavoured shisha'. (Participant 6, page 15, line 716–717)

Discussion

Main findings

This study explored the knowledge, attitudes and beliefs of WTS and e-shisha among 16 young adults of mainly South Asian origin who reside in London. We found that WTS plays a strong role in maintaining social networks, particularly for those whose religion may accept smoking as an alternative to alcohol. Waterpipe premises provide a relaxing atmosphere that makes WTS an enjoyable and pleasurable experience. There appeared to be no major gender disparities in WTS, and users appeared aware of some of its health risks. Most, if not all, of these findings are related to the social acceptability of WTS and highly accessible nature of waterpipe premises.

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We shed light on the role e-shisha may play among waterpipe tobacco smokers. Although both WTS and e-shisha share similar features – namely, the use of flavours and branding name – waterpipe tobacco users felt that the e-shisha's taste was not substitutable to WTS. Furthermore, the key role of social networks in initiation and maintenance of WTS is negated with e-shisha use, which is seen as a more personal, anti-social habit. This is important in the context of WTS harm reduction and cessation, where e-shisha does not appear to play this role in our sample.

Previous research

With regard to knowledge, attitudes and beliefs towards WTS, our study's findings are largely consistent with the existing literature worldwide. A recent systematic review on the motives, attitudes and beliefs of waterpipe smoking included 58 papers and found that relaxation, socialising, pleasure and entertainment were the key reasons for WTS in the context of reduced harm perception (Akl *et al.*, 2013). However, there was no mention of use of e-shisha as a potential harm-reduction or cessation aid, which is included in our study. The slight discordance in our findings from mainstream literature is the fact that many of our participants did not display reduced harm perception towards WTS. This may be due to selection bias (informed individuals were more likely to participate), or the fact that media attention on the negative health aspects of WTS has recently increased in the United Kingdom (Jawad *et al.*, 2015).

Interventions for WTS cessation are severely lacking (Maziak *et al.*, 2007). Two recent randomised controlled trials have shown promising results: one in Pakistan showed that compared with a control group receiving usual care both the behavioural-only support group (RR 2.2, 95% CI 1.3–3.8) and the behavioural support group plus bupropion (RR 2.5, 95% CI 1.3–4.7) were effective in achieving six-month abstinence among waterpipe-only smokers (Dogar *et al.*, 2013); the other one in Syria compared a brief behavioural intervention (control group) with a more intensive behavioural intervention (intervention group) and showed no difference in efficacy (30.4 versus 44.4%, respectively), measured by three-month smoking abstinence period (Asfar *et al.*, 2014). More research is needed to develop WTS interventions in Western settings, including the use of pharmacological cessation interventions.

Implications

Our findings have several health promotion implications. Generally, WTS initiation appears to start in teenage years; therefore, school-based interventions should be implemented based on the best available evidence. In addition, health promotion initiatives should consider cultural sensitivities, as the main waterpipe user group may be of Middle Eastern or South Asian origin (Grant *et al.*, 2014). With regard to e-shisha specifically, this study also brings to light several policy implications. As e-shisha is essentially an electronic cigarette named after WTS, authorities should regulate against cross-product marketing that may simply confuse consumers. Flavour continues to be a main motive for waterpipe tobacco use; however, in Europe, WTS is to be exempt in forthcoming laws prohibiting the sale of flavoured tobacco (Jawad and Millett, 2014). There are also concerns with regard to exemption of waterpipe premises from smoke-free laws in parts of the United States (Primack *et al.*, 2012), and concerns that waterpipe tobacco is not subject to the same level of taxation as cigarettes (Morris *et al.*, 2012). Considering the rising prevalence of WTS worldwide (Akl *et al.*, 2011; Smith *et al.*, 2011), health policy makers should consider legislating waterpipe tobacco on par with cigarettes.

Strength and weaknesses

To our knowledge, this is the first study to open the topic of harm reduction related to e-shisha in the waterpipe tobacco literature. In an era where harm reduction is an accepted and established intervention for users who find it difficult to quit addictive behaviours, it is worth exploring whether the concept, with regard particularly to e-shisha, can be applied to waterpipe tobacco users. Other strengths include the fact that our interviews were conducted in waterpipe premises, a setting that may have facilitated discussions and explored taboo areas around WTS in more detail. Conversely, this may have affected any deliberations on e-shisha as a harm reduction device. Nonetheless, we secured an even gender representation, something that has not been possible in previous qualitative work on WTS in the United Kingdom (Jawad *et al.*, 2013a). This study also benefits from the use of a pilot study and triangulation (interview, observation and member checking), which helped to validate the findings. However, this study is mainly limited to one ethnic

group and to university students, and it is possible that other population groups may yield different attitudes towards WTS and e-shisha. This could be a representative of the common demography of shisha users in London, as identified by a nationally representative survey on WTS demographics (Grant *et al.*, 2014). Key informers may have recruited peers with similar WTS views as them; however, we tried to combat this by using four diverse key informers. Only one researcher conducted the interviews, and discussions could have been biased by personal opinion; however, triangulation of findings ensured this was minimised.

Conclusions

WTS is deeply characterised by social acceptance and premises appear highly accessible for users. A lack of health information among users may be a contributing factor to its continued use. E-shisha does not appear to play a role in WTS harm reduction or cessation. More research is necessary to identify the extent of these beliefs in the WTS community and to develop appropriate interventions for WTS cessation.

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Conflict(s) of Interest

None.

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