Holliday R, Amin K, Lawrence V, Preshaw PM.

[Tobacco education in UK dental schools: A survey of current practice.](#)

European Journal of Dental Education 2017

Copyright:

This is the peer reviewed version of the above article, which has been published in final form at <http://doi.org/10.1111/eje.12280>. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Self-Archiving.

DOI link to article:

<http://doi.org/10.1111/eje.12280>

Date deposited:

28/02/2018

Embargo release date:

27 June 2018

Abstract

Objective

To investigate the current provision of tobacco education (tobacco use and cessation), assessment and e-cigarette education in UK dental and dental hygiene and therapy (DHT) undergraduate programmes.

Materials and Methods

The study was conducted using a self-administered questionnaire sent to all UK institutions training dental and DHT students during the academic year 2015/2016.

Results

Twenty-five programmes returned completed questionnaires (response rate 68%). All programmes (100%) reported delivering tobacco education, delivered by multiple individuals in 78% of the programmes. Assessment of the theoretical and practical aspects of tobacco education were reported in 80% and 72% of the programmes, respectively. More formal teaching time was devoted to the theoretical aspects (100% >2 hours) rather than the practical aspects (76% > 2 hours) of tobacco education. All programmes expected their graduates to be clinically competent at discussing the health consequences of smoking, deliver a brief smoking cessation intervention, and referring patients to stop smoking services. Use of the National Centre for Smoking Cessation and Training 'Very Brief Advice' (NCSCT VBA) training package was reported to be mandatory in 36%, and recommended, in 44% of programmes. Specialised stop smoking services delivered teaching in 40% of both dental and DHT training programmes whilst another 40% reported previous input from specialist smoking cessation services but not in 2015/2016. Most programmes reported delivery of teaching on electronic cigarettes, with 12% delivering a standalone lecture on this topic.

Conclusions

Tobacco education is an important component of dental training. Dental education programmes should remain responsive to a rapidly changing field and fully utilise the available resources.

Introduction

Tobacco smoking is a significant public health problem with an estimated 1 billion tobacco smokers worldwide and 1 in 5 UK adults still smoking(1). The adverse health effects of tobacco smoking are well known including respiratory disease, cardiovascular disorders and cancers. Tobacco smoking is also known to be a risk factor for several oral diseases including oral cancer (2) and periodontitis (3).

Smokers who attempt to quit unaided can expect success rates of around 4% at 12-months (4). The highest success rates are achieved when smokers combine pharmaceutical and behavioural support (for example within the specialised NHS stop smoking services), achieving success rates of 15% at 12-months (5).

Dentists, similar to general medical practitioners (GMPs), are advised to provide brief smoking cessation advice interventions to their smoking patients. Guidance from the National Centre for Smoking Cessation and Training (NCSCT) and National Institute of Clinical Excellence (NICE) advises dentists to deliver a Very Brief Advice (VBA) intervention (6, 7). A Cochrane review (8) considered the effect of a brief advice intervention delivered by physicians and detected a significant increase in the rate of quitting, compared to no advice (relative risk of quitting 1.66, 95% confidence interval (CI) 1.42, 1.94). They estimated a number needed to treat (NNT) of 35-80 patients to achieve an additional successful quit attempt at 12-months (based on a 12-month unaided quit rate of 3%). A further Cochrane review (9) considered tobacco cessation in the dental setting. Fourteen clinical trials were included in this review, with the intervention resulting in an odds ratio of 1.71 (95% CI 1.44, 2.03) for tobacco abstinence compared to 'usual care, no contact, or less treatment intensive controls'.

The delivery of tobacco education, including smoking cessation interventions, is an important component of undergraduate dental training. A previous study (10), conducted a curriculum survey of European dental schools in 2009, and reported that overall, 67% of dental schools included tobacco education in their curriculum, with 67% of those schools reporting that such education is mandatory. However, only 18% of dental curricula included any practical aspect to their tobacco training. Assessment rates were low, with only 27% of dental schools assessing theoretical knowledge and 4% having a practical assessment. This survey included data from 68

of the 197 dental schools in Europe. UK-specific data were not presented in this paper but the authors provided the unpublished data on request (personal communication). Nine of the fifteen UK dental schools had responded to the survey, and all schools were delivering theoretical tobacco education, six schools (67%) were providing practical training, eight schools (89%) were assessing theoretical tobacco education, and only one school (11%) was assessing practical training (clinical competence).

Over the seven years since this survey was completed there have been a number of major changes within the tobacco control field in the UK. Firstly, the Health and Social Care Act 2012, was passed and implemented. This essentially has moved 'public health' (including smoking cessation services) from the National Health Service (NHS) and placed it within the control of local authorities, leading to disruption and uncertainty in the delivery of specialist stop smoking services (SSSS). It is possible that these changes may have impacted on the use of the SSSS within dental teaching programmes. Secondly, electronic cigarettes (e-cigarettes) have added a new dimension to tobacco control and smoking cessation. In 2009, very few UK smokers (0.5%) were using e-cigarettes as a quit aid, but this had increased to 38% by early 2016 (11). There are now an estimated 2.8 million users of e-cigarette in the UK (12). E-cigarettes have produced much controversy and divided opinions. A recent Cochrane review concluded they were useful in helping smokers to quit in the long term(13).

In 2012, Public Health England published guidance for dentists on delivering smoking cessation advice in a document called 'Smokefree and Smiling' (SFS) (14). This, along with 'Delivering Better Oral Health: an evidence based toolkit for prevention' (15), detailed minimum standards for training. These essentially state that all dental professionals should have at least completed the NCSCT 'Very brief advice, just 30 seconds to ask, advise and act' training or equivalent (6). An evaluation of the implementation of SFS across the north of England in 2016 found that all six dental schools in this region reported that students were made aware of SFS with half of the schools delivering teaching sessions on SFS (16).

ObjectivesThe objective was to determine the current provision of tobacco education (tobacco use and cessation), assessment and e-cigarette education within UK dental and dental hygiene and therapy (DHT) undergraduate programmes during the 2015/2016 academic year.

Methods

Questionnaire

A 17 item electronic self-administered questionnaire was produced which covered tobacco education and assessment as well as teaching on e-cigarettes (Appendix A). Following piloting, the survey was distributed to UK dental schools during June 2016. Respondents were asked to enter which institution they were completing the survey on behalf of but were informed that analysis would be presented anonymously and would not identify individual units. The survey was conducted using online survey software (Qualtrics, Provo, Utah, US). The survey was configured so each question had to be answered in turn and it was not possible to return to a previous question. Ethical approval was obtained from Newcastle University Research Ethics Committee (Reference: 865378).

Identification of institutions/ follow-up

Databases from the British Dental Association and the UK General Dental Council were used to establish all institutions delivering undergraduate dental (including graduate entry) or DHT programmes within the UK. We identified 16 dental undergraduate programmes and 21 DHT programmes. Initially the dean or head of education was contacted via email and asked to forward the survey to the relevant member of staff within their institution. If no response was received after 4 weeks, follow up emails were sent. The survey was closed after 12 weeks.

Data analysis and statistics

If multiple responses were received for each programme then the responses were combined, giving preference to the most positive response. Results were tabulated (Microsoft Excel 2013 Redmond, Washington, USA) and frequency analysis were performed.

Results:

Complete responses were obtained from 25 of the 37 UK dental and DHT training programmes (68% response rate). Results obtained from the dental and DHT training programmes from each institution were highly correlated, with no appreciable difference, and are presented in a combined manner.

A wide range of teaching formats were reported in the delivery of tobacco education. Figure 1 shows the reported teaching formats, and Table 1 shows the reported formal teaching time provided for the theoretical and practical aspects of tobacco education. All programmes (100%) reported delivering tobacco education, delivered by multiple individuals in the vast majority of programmes (theoretical aspects: 21 [84%] programmes; practical aspects: 18 [72%] programmes). Most education was delivered by dentist or hygienist/therapist lecturers with 9 (36%) programmes reporting practical teaching by a stop smoking specialist/ advisor. Ten (40%) programmes reported direct input from the SSSS whilst 10 (40%) programmes reported input in previous years but not in the 2015/16 academic year (5 [20%] unknown). Figure 2 presents the skills that institutions expect their students to be clinically competent in by the time they graduate.

With regards to assessment of tobacco education, 20 (80%) programmes reported assessing theoretical content, and 18 (72%) reported assessing practical content. Theoretical assessment was reported to be assessed using formative assessment (9, 36%) and summative assessment; (final exams [10, 40%] and specific exam [12, 48%]). Practical assessment was reported to be assessed using formative assessment (14, 56%) and summative assessment; standalone assessment (10, 40%) and external qualification (5, 20%). Multi-media resources were reportedly used in 13 (52%) programmes, two (8%) citing the NCSCCT VBA training package (one cited the NHS Portal). When asking directly about the NCSCCT VBA training package, 9 (36%) programmes reported this as a mandatory requirement, 11 (44%) recommended students complete this, two (8%) were aware of it but didn't use it and three (12%) were not aware of it. (English programmes: 50% mandatory, 39% recommended, 11% aware but didn't use). Teaching around e-cigarettes was mixed although most had teaching integrated into another

lecture (76%), with 12% having a standalone lecture, 16% having an interactive workshop or small group session and 12% not knowing what teaching was being delivered.

A wide range of teaching resources/ references documents were reportedly used (Figure 3). 'Delivering Better Oral Health: an evidence based toolkit for prevention'(15) was the most used resource, being used extensively by 83% and mentioned by 17% of English programmes (this document is published by Public Health England [PHE] and therefore this analysis was restricted to English programmes with Scottish, Welsh and Northern Irish programmes excluded). Of those programmes outside of England (i.e. Scotland, Wales and Northern Ireland), 71% did not use the document. Another document published by PHE, 'Smokefree and Smiling' (14), was reportedly used extensively in 6%, mentioned within the teaching of 50%, referenced for further reading in 33% and not used in 11% of English Programmes (Scottish, Welsh and Northern Irish programmes excluded).

Discussion

A good knowledge of the science behind the harmful effects of tobacco, addiction and skills in delivering effective smoking cessation interventions are important aspects of undergraduate dental education, particularly with the modern focus on prevention. The results of this survey demonstrate that all the programmes that responded were delivering education on the theoretical and practical aspects of tobacco education.

A range of educational techniques were used in the delivery of both the theoretical and practical aspects of tobacco education. There was a tendency for practical tobacco education, such as smoking cessation interventions, to be delivered in a more hands-on manner, with almost all programmes reporting using of interactive workshops, small group seminars or integration into clinical teaching.

All programmes reported devoting at least 2 hours of formal teaching time to the theoretical aspects of tobacco education, with 68% reporting over 3 hours of teaching. In contrast, less formal teaching time was devoted to practical tobacco education, with almost a quarter of programmes only reporting 1-2 hours of such teaching. It is likely that due to the vocational nature of dental teaching programmes, a large amount of practical teaching happens at the chairside and is hard to capture in these figures.

The SSSS in the UK have faced significant pressures over the last few years and our survey suggested that only a minority of dental programmes (40%) had input from them. Interestingly, 40% reported SSSS input in previous academic years, suggesting that recent organisational change to smoking cessation services in the UK may have had an impact on the ability of the SSSS to input into dental teaching programmes. Other explanations may include the loss of contacts as services moved (this may recover in the coming years) or changes in the dental curriculum/ structure.

GDC guidance advises that dentists should be able to 'evaluate the health risks of.... tobacco.... and provide appropriate advice and support' and similarly DHTs should be able to 'describe the health risks of.... tobacco.... and provide appropriate advice, referral and support' (17).

Unsurprisingly, our results demonstrated that all programmes had similar expectations in this regard and expect students to be able to discuss health consequences, deliver a brief intervention and refer as necessary. A small number of programmes expected further

competencies including motivational interviewing, detailed knowledge of stop smoking medications and two programmes even expected prescription of stop smoking medicines. The prescription of stop smoking medications would currently be beyond what is expected in national guidance (6, 7) and indeed the UK Dental Practitioners Formulary (18) does not currently include stop smoking medications.

In our survey, a majority reported assessing both the theoretical (80%) and practical aspects (72%) of tobacco education. This practical assessment is a marked change from previous survey results (10) that reported 4% and 11% for European and UK dental schools, respectively.

Within England there are two guidance documents on tobacco education within dental programmes. 'Smokefree and Smiling' recommended that 'Dental schools, postgraduate deaneries and other providers and commissioners of dental teaching should ensure that tobacco cessation training is available and meets national standards' and that 'the minimum standard' should be the NCSCT VBA training (14). 'Delivering better oral health, an evidence based toolkit' (15) also specifically cites NCSCT VBA training as a 'minimum standard that every dental practice member should achieve'. The NCSCT VBA training package involves a series of 5 videos followed by an assessment. A previous evaluation of the implementation of 'Smokefree and Smiling' reported that of the six northern (English) dental schools surveyed, half delivered sessions using 'Smokefree and Smiling', presumably meaning use of the NCSCT VBA training. Our survey asked two questions to try to gauge the current use of this resource. We initially asked a generic question about multi-media resource use and of the English programmes, only two (11%) cited use of the NCSCT VBA package. A subsequent question asked directly about the NCSCT VBA package and interestingly received higher reported usage rates with 50% reporting this to be a mandatory requirement of their programmes, 39% reporting it was recommended whilst 11% were aware of the package but didn't use it (English programmes). When looking at the programmes in the other countries of the UK, they reported much lower use of the NCSCT training package (43% unaware, 57% recommend) which may partially be explained by them having access to their own training packages.

Most programmes had some teaching on e-cigarettes within their programmes, although 12% reported not knowing if there was any teaching on this. Only 12% (3 programmes) delivered a standalone lecture which is unsurprising given that e-cigarettes are a relatively recent phenomenon and the controversies that exist about their use. Although there are a number of

documents available from organisations such as PHE and the Royal College of Physicians, it may be useful for a more accessible, simple guidance document to be produced specifically for the dental team. The NCSCT have produced an e-cigarette guide for the stop smoking services (19) and a simplified version of this may be useful for health care professionals such as dentists.

Although surveys such as those conducted in this study are useful, they also have several limitations. The results are reported outcomes and may be different from actual or observed outcomes. This research also depended on a suitable person from each institution completing the survey and being knowledgeable about the teaching being delivered in their institution. This was highlighted in our survey when multiple people submitted entries for a single programme, sometimes with differing responses.

Conclusions

In conclusion, this survey has shown that there have been significant improvements in the delivery and assessment of tobacco education in UK dental and DHT training programmes compared to previous reports. All programmes expected their graduates to be clinically competent at a range of basic skills including providing brief interventions. Input from SSSS was varied and reportedly reduced from previous years. Teaching on e-cigarettes was mixed and it is important that education programmes remain dynamic and responsive in this rapidly changing field and fully utilise the available resources.

References

1. WHO. Global Health Observatory (GHO) data. Prevalence of Tobacco Smoking. 2016 [updated 10.12.16. Available from: <http://www.who.int/gho/tobacco/use/en/>
2. Vineis P, Alavanja M, Buffler P, Fontham E, Franceschi S, Gao YT, et al. Tobacco and cancer: recent epidemiological evidence. J Natl Cancer Inst. 2004;96(2):99-106.
3. Tomar SL, Asma S. Smoking-attributable periodontitis in the United States: findings from NHANES III. National Health and Nutrition Examination Survey. J Periodontol. 2000;71(5):743-51.
4. Hughes JR, Keely J, Naud S. Shape of the relapse curve and long-term abstinence among untreated smokers. Addiction. 2004;99(1):29-38.
5. Bauld L, Bell K, McCullough L, Richardson L, Greaves L. The effectiveness of NHS smoking cessation services: a systematic review. J Public Health (Oxf). 2010;32(1):71-82.
6. NCSCT. Very Brief Advice training module [www.ncsct.co.uk](http://www.ncsct.co.uk/publication_very-brief-advice.php) 2012 [Available from: http://www.ncsct.co.uk/publication_very-brief-advice.php.
7. NICE. Smoking: brief interventions and referrals (PH1). Manchester 2006.
8. Stead LF, Buitrago D, Preciado N, Sanchez G, Hartmann-Boyce J, Lancaster T. Physician advice for smoking cessation. The Cochrane database of systematic reviews. 2013(5):Cd000165.
9. Carr AB, Ebbert J. Interventions for tobacco cessation in the dental setting. The Cochrane database of systematic reviews. 2012(6):Cd005084.
10. Ramseier CA, Aurich P, Bottini C, Warnakulasuriya S, Davis JM. Curriculum survey on tobacco education in European dental schools. Br Dent J. 2012;213(7):E12.
11. Smoking Toolkit Study. Electronic cigarettes in England- latest trends (STS140122). <http://www.smokinginengland.info/latest-statistics/2016>.
12. ASH. ASH fact sheet on the use of electronic cigarettes (vapourisers) among adults in Great Britain. 2016.
13. Hartmann-Boyce J, McRobbie H, Bullen C, Begh R, Stead LF, Hajek P. Electronic cigarettes for smoking cessation. The Cochrane database of systematic reviews. 2016;9:Cd010216.
14. Public Health England. Smokefree and smiling. Second edition. 2012.
15. Public Health England. Delivering better oral health: an evidence-based toolkit for prevention. Third Edition. 2014.
16. Public Health England. Evaluating the implementation of Smokefree and Smiling (2nd edition) across the North of England. 2014.
17. General Dental Council. Preparing for practice. Dental team learning outcomes for registration (2015 revised edition). 2015.
18. NICE NifHaCE. Dental Practitioners' Formulary; British National Formulary. 2016.

19. McEwan A, McRobbie H. Electronic cigarettes: a briefing for stop smoking services. ISBN 978-0-9565243-4-8: NCSCT & PHE; 2016.

Figure legends

Figure 1: Reported format of tobacco education (theoretical and practical).

Figure 2: Expected clinical competency by graduation.

Figure 3: Reported use of teaching resources/ reference documents. (# Resources/ documents only applicable to English Programmes so data analysis limited to English programmes.

*Resources/ documents not applicable to Scottish programmes so Scottish data excluded from this analysis.)

Table 1: Reported formal teaching time provided for both the theoretical and practical aspects of tobacco education.

■ 'Delivering Better Oral Health: an evidence-based toolkit for prevention' 2014. #

■ 'Smoking: brief interventions and referrals' NICE guidance. NICE (National Institute for Health and Care Research)

	None	30 min - 1 hour	1-2 hours	2-3 hours	>3 hours
Amount of formal teaching time spent on <u>theoretical</u> content of tobacco education.	0	0	0	8 (32%)	17 (68%)
Amount of formal teaching time spent on <u>practical</u> content of tobacco education.	0	0	6 (24%)	8 (32%)	11 (44%)