

Research Report

E-Learning on Very Brief Advice on Smoking (VBA): Changes to knowledge, self-efficacy and clinical practice of general practitioners

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Abstract

Background and aims: Very Brief Advice on Smoking (VBA) is an evidence-based intervention intended to prompt quit attempts. The National Centre for Smoking Cessation and Training (NCSCT) developed a 30-minute e-learning module on VBA. This study assessed the extent to which the VBA training module has influenced general practitioner's (GP) self-reported knowledge, self-efficacy and clinical practice in addressing tobacco use with patients who smoke.

Methods: GPs who recently completed the VBA training module via BMJ Learning were invited to take part in an online survey. The survey assessed influence of the training on GPs' knowledge and self-efficacy in the delivery of cessation counseling. The self-reported frequency of offering cessation support to patients who smoke, both before and after participation in the training, was also assessed. A total of 276 GPs completed the survey, a response rate of 20.6%.

Results: Almost 80% of GP respondents, reported the VBA module increased their knowledge of how best to help their patients to stop ^[11]_{SEP}smoking. More than two thirds (67.4%) reported the training increased their self-efficacy in speaking to patients about their smoking. An absolute increase of 33.2% in the proportion of consultations in which smokers were offered help with smoking cessation was documented among survey respondents after the training compared to before (36.8% vs. 60.4%; $p < 0.0001$).

Conclusions: The 30-minute online training on VBA appears to have produced positive changes in GP's self-reported knowledge, self-efficacy and clinical practice in addressing tobacco use with patients.

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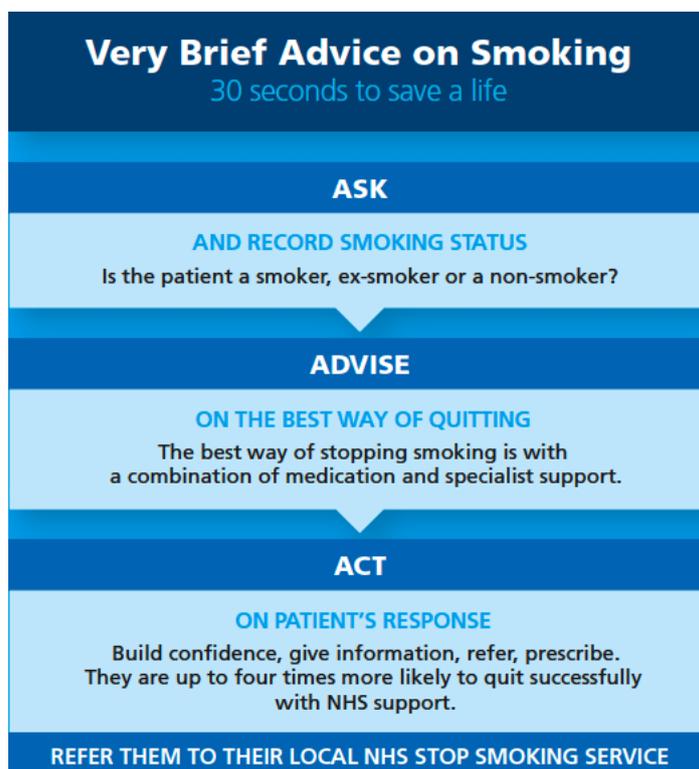
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Introduction

Advice from health care professionals (HCP) can be one of the most important triggers for a smoker to make a quit attempt (1, 2). Research has found that 40% of smokers will make a quit attempt in response to brief advice from a General Practitioner (GP) (3, 4). We also know that patients who smoke are almost twice as likely to try to stop if they are offered help by their GP or another HCP, than if they had only been advised to stop smoking (1, 5, 6). Despite this, GPs have reported a lack of knowledge about, and confidence in, intervening with smokers; lack of time is also among the most common barriers to tobacco treatment delivery (7, 8).

Very Brief Advice on Smoking (VBA) is an evidence-based intervention and is recommended best practice in the United Kingdom (UK) (9-11). VBA is intended to be delivered opportunistically, in less than 30 seconds, in almost any situation with a smoker. VBA involves asking patients about their current smoking and advising them on the best methods of stopping smoking available to them. Depending upon the patient's response to this advice, the intervention then involves either recording no current interest in quitting and advising the patient that the offer of help remains available to them, or offering assistance by way of referral to available stop smoking support, recommendation or prescription for quit smoking medication and arranging a follow-up appointment as appropriate (9). VBA is based on the PRIME theory of motivation (12, 13). VBA does not involve advising smokers to stop or asking how much they smoke or even if they want to stop; it simply offers help to quit to all identified smokers. In the UK smokers interested in quitting can be referred to Local Stop Smoking Services for support. **Figure 1** depicts the three elements of VBA: establishing and recording smoking status (ASK); advising on the best way of quitting (ADVISE) and offering help (ACT).

Figure 1: Very Brief Advice (VBA) on Smoking intervention (standard UK model)



Training has been shown to be an essential component of changing clinician behaviour and this is true of tobacco treatment training for HCP (14). A systematic review by the Cochrane Collaboration found HCPs who received training were significantly more likely to deliver evidence-based stop smoking support compared to untrained controls (14). The use of e-learning platforms makes training more accessible to busy clinicians. Despite the availability of several e-learning programs to support training on smoking cessation for GPs and other health care professionals, few evaluations have been reported in the literature (15-24).

The National Institute for Health and Clinical Excellence (NICE) recommends that all HCPs be trained in VBA (8). The National Centre for Smoking Cessation and Training (NCSCT) has produced a short, 30-minute e-learning module on VBA. The training was specifically aimed at primary health care, general practitioners in particular. The VBA training module is available as an open access resource on the NCSCT website (www.ncsct-training.co.uk/player/play/VBA). NCSCT partnered with BMJ Learning, the main source of post-registration medical training in the UK, to disseminate the VBA e-learning training to GPs (<http://tinyurl.com/ncsct-vba>). The training is based around short film clips providing examples of how VBA can be delivered and includes key facts, figures and messages plus an assessment and certification function. The key learning objectives of the training module are to: (1) understand the importance and effectiveness of delivering VBA to smokers; (2) realise how simple this intervention can be to deliver; (3) know how to Ask, Advise and Act; (4) be confident in their knowledge of the smoker's pathway and referral options for supporting quit attempts. To date more than 60,000 HCPs in the UK have completed the VBA e-learning module (25).

The aim of this study was to assess the extent to which the online VBA training module has influenced GPs knowledge, self-efficacy and clinical practice in addressing tobacco use with patients who smoke. Generating evidence to better understand the impact of the VBA training on clinical practice is important for informing continuous quality improvement.

Methods

Design

An online survey was conducted among a sample of GPs who had recently completed the online VBA training via BMJ Learning.

Study Sample

Between late 2012 and early 2013, 1,329 GPs were invited by email to take part in the survey. All participants were contacted by email with an invitation to take part in the survey. A reminder email was sent one week later. A total of 276 users completed the questionnaire, a response rate of 20.6%.

Measures

Participants were asked about their impression about the value of the training in influencing their personal approach to addressing tobacco use, self-efficacy and knowledge using the three-part question: 'Which of the following do you think is true? The Very Brief Advice on Smoking module has: a) 'made no difference to the way I address the issue of smoking with my patients', b) 'improved my knowledge of how best to help my patients to stop smoking', and c) 'made it easier for me to talk to smokers about their smoking'. To assess pre-training rates of VBA delivery participants were asked: 'In the year before doing the Very Brief Advice on Smoking module in what proportion of consultations do you think you offered help

with stopping to smokers attending for routine consultations?’ Response options were 0-100. To assess post-training rates of VBA delivery participants were asked: ‘Since doing the Very Brief Advice on Smoking module in what proportion of consultations do you think you have offered help with stopping to smokers attending for routine consultations?’ (response: 0-100). Free text comments from participants were also gathered using the question “What might you do differently as a result of this learning module?”.

Analysis

Descriptive statistics were calculated for outcome measures. We compared rates of smoking cessation consultation between the pre- and post assessment. All analyses were carried out in SPSS 24.0.

Results

Almost 80%, of participants agreed that the VBA training module improved their knowledge of how best to help patients to stop ^{[[SEP]]}smoking (**Table 1**). More than two thirds (67.4%) agreed the module has made it easier to talk to smokers about their smoking with 7.7% indicating the VBA module had made no difference to the way they address the issue of smoking with patients (**Table 1**).

Table 1: Participants impressions of value of VBA training (n=247)

Question	True n (%)	False (n) %
The Very Brief Advice on Smoking module has made no difference to the way I address the issue of smoking with my patients	21 (7.7)	226 (92.3)
The Very Brief Advice on Smoking module has improved my knowledge of how best to help my patients to stop smoking	218 (79.9)	29 (67.4)
The Very Brief Advice on Smoking module has made it easier for me to talk to smokers about their smoking	184 (67.4)	63 (25.5)

In the year before completing the VBA module, the average proportion of consultations in which survey respondents offered smokers help with smoking cessation was 36.8% (0-100, SD=25.33). Following completion of the VBA online training module,^{[[SEP]]}we documented an absolute increase of 33.2% in the proportion of consultations in which smokers were offered help with smoking cessation after the training compared to before (36.8% vs. 60.4%; p<0.000) (**Table 2**).

Table 2: Proportion of routine consultations where help to stop smoking was offered before and after VBA on Smoking online training (range 0-100)

Variable	Before VBA training (n=237)	After VBA training (n=246)	p-value
Proportion of routine consultations where help to stop smoking was offered	36.82 ± 25.3	60.41 ± SD 27.8	<0.001

Free text comments collected post-training further supported that GP participants offered smoking cessation advice more frequently and changed their approach to addressing tobacco use with patients. Comments also indicated that GPs were more likely to emphasize the importance of the combined approach of pharmacotherapy and counseling with patients, and refer patients to Local Stop Smoking Services. Selected quotes from participants have been included below:

“It is much easier to talk to smokers as I don't have to worry about it taking a long time and holding up other patients in my surgery. The patient's really seem to accept and appreciate the brief advice.”

“I realise that this intervention only need take a very short amount of time, so I am more likely to use it appropriately.”

“More confident in raising smoking in a non-judgmental manner.”

“I now have information for local clinics as well as smoke help line to give to the patients.”

“I stopped focusing on how much people smoked and advised them about the improved outcomes of NRT and cessation advice instead.”

Discussion

The individual and public health benefits of stopping smoking make VBA one of the most cost-effective interventions GPs can deliver in clinical practice (2, 26). Best practice guidelines recommend that all HCPs in the NHS be trained in VBA and be prepared to deliver VBA to smokers identified in clinical settings (9-10). This evaluation found completion of the e-learning VBA training was associated with positive changes in GPs knowledge, self-efficacy, and clinical practice in addressing tobacco use with patients.

There has been one previous evaluation of the NCSCT e-learning training, which was conducted among NHS stop smoking service practitioners (20). The study documented a significant increase in knowledge following the NCSCT training (20). Additionally, a recent review published in 2019 identified 11 randomized controlled trials (n=2,684) examining smoking cessation education delivered via e-learning compared to controls in improving HCPs knowledge, skills, satisfaction, practice behaviours related to delivering smoking cessation treatment (15). The review found that e-learning education was at least as effective as traditional or usual learning in terms of HCP's knowledge, skill for delivering smoking cessation therapies and satisfaction with the training (15). Notably there was evidence that the combination of e-learning and face-to-face training was more effective than either alone (15). A randomized controlled trial by Gordon and colleagues conducted among a sample of 215 respiratory therapists, nurses and nurse practitioners found HCP exposed to a 3-hour e-learning tobacco cessation program were significantly more likely to deliver advise, assistance and arrange support compared to the control group (17). Martinez et al. conducted a pre-post evaluation of an online smoking cessation training program among HCP in South America and documented increases in self-reported rates of tobacco treatment delivery (18). Outside of the field of smoking cessation, a comprehensive review published by the World Health Organization (WHO) and the Imperial College London concluded that eLearning is as effective as traditional methods for training HCPs (27). Others have reported important improvement in HCP knowledge following exposure to e-learning programs designed to

support clinical skills (28, 29). A recent Cochrane review on the same topic however found mixed results and it appears characteristics of the training program content and delivery format are important factors in determining the impact of the training program (29).

Our findings should be interpreted in light of study limitations. First, changes in provider knowledge, self-efficacy and behaviour were self-reported and may be subject to over-reporting or responder bias. Future research could consider strengthening this assessment by using an objective measure of tobacco treatment delivery. A response rate of 20% was achieved in the present survey, whilst this is not untypical for online physician surveys, the extent to which the findings are generalizable to all trainees is uncertain. There was also large variation among trainees in terms of rates at which they reported offering help with quitting to patients. Given the present study was focussed on physician trainees, future research should examine the effects of the VBA training module on other HCP groups.

Implication to practice and future research

Each time a patient comes in contact with the health care system, whether in primary care, hospital or specialty settings, there is an opportunity to deliver VBA. Helping patients quit smoking has been shown to improve patient health outcomes and have a direct impact on hard outcomes including in-patient length of stay, 30-day readmission and 30-day mortality rates (30-32). The low cost and high reach of the e-learning training platform combined with the positive findings supports the value of further dissemination of the VBA training. While a large number of HCP in the UK have already participated in the VBA e-learning training, there remains significant potential to increase the reach of the VBA e-learning training within the NHS. A recent report by the Royal College of Physicians has called for smoking cessation to be systematically incorporated as a priority for all NHS services and VBA has been identified as a key strategy in supporting training activities (26). Likewise while a significant proportion of GPs in this study (60%) reported that following completion of the e-learning module they addressed tobacco use with patients who smoked, there is room to further increase rates at which support is offered to patients who smoke. Whilst training is necessary to achieve changes to individual clinician behaviour, research has shown that when training is combined with other measures to support interventions, mainly organisational changes, synergistic effects are seen in terms of rates of advise, referrals to quit smoking supports, and rates of patient quitting (33-36). As such, ensuring the appropriate organizational and policy supports are in place is important for further increasing the overall effects of VBA training.

Conclusions

The 30-minute e-learning on VBA was associated with positive changes in physician's self reported knowledge, self-efficacy and clinical practice in addressing tobacco use with patients. Given the very important role of GPs, and other HCPs, in addressing tobacco use with patients these findings are important in supporting continued dissemination of the online VBA training to HCPs in the UK.

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