PREPARING UNDERGRADUATE NURSES TO PROVIDE SMOKING CESSATION ADVICE AND HELP

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Abstract

Nurses in New Zealand are expected to provide the Ministry of Health recommended ABC approach to smoking cessation interventions; but not all nurses receive adequate preparation. A national online survey was conducted to investigate the extent that smoking cessation education content is included in undergraduate nursing curricula in New Zealand’s 17 Schools of Nursing. Fourteen schools responded. Of these 12 provide some form of smoking cessation education: five teach the recommended ABC approach and seven teach approaches not recommended by the Ministry of Health. Nine schools include education about nicotine replacement therapy (NRT). In seven schools smoking cessation education was found to be fragmented across the curriculum. In the majority of nursing programmes preparation of undergraduate nurses to provide smoking cessation advice and help is insufficient. It is recommended schools audit and update their curricula to include coordinated undergraduate smoking cessation education congruent with current national guidelines.

Key words: nursing education; smoking cessation; nursing curricula; student nurses

Background

Tobacco smoking is the major preventable cause of death in New Zealand. Some 5,000 people die annually from smoking or exposure to second-hand smoke (Ministry of Health, 2007a). In 2009 one in five people aged 15 to 64 years smoked (Ministry of Health, 2010b). Most people (83.3%) who smoke regret starting (Wilson, Edwards, & Weerasekera, 2009). Three out of five (59%) who currently smoke have tried to quit in the past five years (Ministry of Health, 2009d). It is reasonable to expect that more smokers will quit successfully if nurses deliver evidence-based smoking cessation interventions. Nurses can provide effective advice for people stopping smoking, and given the size of the nursing workforce (> 40,000) the reach is potentially wide (Ministry of Health, 2009b; Rice & Stead, 2008). However despite this potential effect, fewer than half of New Zealand nurses reported they were trained to provide smoking cessation advice and help (Wong et al., 2007).

The 2007 New Zealand Smoking Cessation Guidelines recommended a brief intervention structured around the memory aid ABC: Ask, Brief advice and Cessation support (Ministry of Health, 2007a). The ABC approach is based on clinical trials demonstrating the efficacy of behavioural and pharmacological support for quitting smoking (Ministry of Health, 2008). It replaces the Five A’s approach (Ask, Advise, Assess, Assist, Arrange), based on the Transtheoretical Model of Behaviour Change proposed by Prochaska and DiClemente (1982), and recommended in the 2002 Smoking Cessation Guidelines (National Advisory Committee on Health and Disability, 2002). While the Stages of Change approach is widely used in education to promote behaviour change, it has been discredited for smoking cessation (Littell & Girvin, 2002; West, 2005; West & Hardy, 2006).

The ABC approach is based on West’s theory of addiction. This focused on momentary wants and needs...
rather than planning, intention and beliefs (West & Hardy, 2006). Almost half (49%) of smokers reported they quit immediately they decided to do so. The odds of quitting are higher at six months in unplanned attempts compared to planned attempts (OR 2.6, 95% CI 1.9, 3.6) (West & Sohal, 2006). Brief advice appears to work by triggering quit attempts as opposed to increasing the success of quit attempts (Russell, Wilson, Taylor, & Baker, 1979). Approximately 1 in 40 people who would not otherwise have stopped smoking will do so for at least six months after receiving brief advice (Lancaster & Stead, 2006). The randomized controlled trials used to determine the above conclusion were based on doctors’ advice. For brief interventions by nurses the evidence is clear; but would seem to suggest that similar action by nurses is also likely to benefit patients (Ministry of Health, 2008; Rice & Stead, 2008). Therefore the key message is that everyone who smokes, regardless of whether they express a desire to want to stop or not, should be advised to stop smoking. In addition, support to stop smoking should always be offered to those people who express an interest in stopping.

In 2009 the Ministry of Health introduced the following health target: “80 percent of hospitalised smokers will be provided with advice and help to quit by July 2010; 90 percent by July 2011; and 95 percent by July 2012” (Ministry of Health, 2009c, p. 1). Complementary targets were introduced for primary health care in 2011. Currently health care providers reported three monthly on their progress towards achieving the targets (Ministry of Health, 2010b). In order to meet the targets, health care providers expect nurses and other health professionals to deliver 30 second brief ABC interventions to patients who smoke. Smoking cessation competencies, systems to train health professionals in workplaces and to collect data for reporting purposes are in place (Ministry of Health, 2007b, 2009c).

Face-to-face and online Ministry of Health and Heart Foundation training is available free of charge to all registered health professionals and student nurses in their final year (Ministry of Health, 2009a). After training, participants register to issue Quit Cards. A Quit Card gives any smokers access to fully subsidised nicotine replacement therapy (NRT). NRT is a safe pharmacological support for cessation that replaces some of the nicotine in cigarettes and approximately doubles the chance of people who smoke to quit long term (Royal College of Physicians of London, 2000; Silagy, Lancaster, Stead, Mant, & Fowler, 2004). It is available over the counter in pharmacies and supermarkets. The Nursing Council of New Zealand and the New Zealand Nurses Organisation have published advice for nurses becoming Quit Card providers (Thompson, Barnett Davidson, & Reed, 2010).

Quitting smoking is difficult because nicotine is addictive. Relapse is common (Royal College of Physicians of London, 2000). Nurses offer more than health education to support people who want to quit. They provide an evidence-based behavioural intervention supported with pharmacotherapy and free follow-up support via the national Quitline service. A concerted effort by all nurses and other health professionals would make them agents for individual change at the population level. Clearly nurses have a key role to play in the national tobacco control agenda and in fulfilling New Zealand’s obligations under Article 14 (smoking cessation) of the world’s first global health treaty, the Framework Convention Tobacco Control (World Health Organisation, 2003, 2008).

Routine smoking cessation advice and help incorporating Quit Cards is new to the practice of nurses across the board. Thorough preparation of undergraduate students is important. In recognition of this, a key success indicator for the ABC approach is that “100% of all undergraduate courses related to health care have implemented ABC training into their curricula” (Ministry of Health, 2009c, p. 19). Overseas, evidence of the harm caused by tobacco is included in undergraduate
curricula; but smoking cessation education is frequently absent (Ferry, Grissino, & Runfola, 1999; Hornberger & Edwards, 2004; Warren, Sinha, Lee, Lea, & Jones, 2009; Wewers, Kidd, Armbruster, & Sarna, 2004).

In a survey of 909 under- and post-graduate nursing programmes in the United States, the majority of nursing curricula concentrated on the ill-effects of tobacco, but lacked content regarding smoking cessation techniques (Wewers et al., 2004). Smoking cessation did not appear in 49% of undergraduate nursing programmes in four Asian nations. Less than 10% reported in-depth content and there were few opportunities for clinical practice to consolidate learning (Sarna et al., 2006). Although the precise smoking cessation content in nursing curricula in New Zealand is unknown, it is apparent that further efforts are needed to reduce barriers to smoking cessation education in schools of nursing (Sarna, Bialous, Rice, & Wewers, 2009).

We explored the extent smoking cessation education content was included in undergraduate nursing curricula in New Zealand, and hence how future nurses are being prepared to deliver smoking cessation interventions. The aims of the survey were to identify (a) how many undergraduate nursing degree programmes include smoking cessation education in the curriculum; (b) what smoking cessation interventions were being taught, (c) where in the curricula these were taught, and (d) how they were assessed.

Method

To answer the study questions a cross-sectional descriptive survey design employing an online questionnaire was used.

Ethics

Auckland University of Technology Ethics Committee (AUTEC) approved the study protocol (ref. 09/241). Completion of the questionnaire indicated consent from schools (as the heads of schools distributed the invitation) and from participants. Participants remained anonymous. However the names of schools were included in the questionnaire so that school-wide responses could be created. These names were omitted when the collated data were downloaded for analysis.

Sample

The participants were nurse educators involved in smoking cessation education in New Zealand schools of nursing with undergraduate nursing programmes. The 17 schools offer 19 undergraduate nursing programmes (16 mainstream, two Maori and one Pacific Island). In November 2009, letters of invitation, participant information sheets and the URL link to the questionnaire were e-mailed to heads of schools who were invited to complete the questionnaire and/or forward the email request to staff involved in smoking cessation education.

Data collection

The questionnaire was made available to participants via Survey Monkey, a web based online survey tool. The online format minimised data entry time as well as time needed to distribute, access, complete and return the questionnaire.

Questionnaire

The questionnaire content reflected the Smoking Cessation Guidelines since this document forms the basis of smoking cessation interventions nationally. The 2007 Guidelines provided advice about cessation support (including medications, face-to-face and telephone support). There is guidance about cessation and relapse prevention, Maori and Pacific peoples, and priority populations (pregnant women, children and youth, hospitalised patients, mental health and addictions service users). Finally, the guidelines...
assess the evidence for alternative smoking cessation treatments including hypnotherapy and acupuncture.

The questionnaire consisted of five sections with closed questions. There was an option to write further information after each question in sections two to five. We asked which years of the three year programme different elements of smoking cessation education appeared. The first section asked about the school of nursing (name, nursing programmes) and, “To the best of your knowledge, is smoking cessation education provided in the curriculum?” The next section asked where in the curriculum smoking cessation education was taught (health promotion, public health, health and wellness, pharmacology, Maori health, women’s health, mental health). The third section asked which of three approaches to smoking cessation education was taught - the Five As, ABC and change theory (“for example Prochaska and DiClemente”). The Five As were separated from change theory as the latter may have underpinned smoking cessation education without manifesting as the Five As.

The fourth section of the questionnaire explored the content and delivery of smoking cessation education. This included smoking cessation support methods (telephone support, face-to-face support, motivational interviewing and medication therapy). We also asked how students were assessed and if priority population groups, relapse prevention, and alternative therapies were included in the education - “Are other treatments and interventions (e.g. hypnosis, acupuncture) covered in the curriculum?” The response options were “hypnosis, acupuncture and other (please specify)”. The final section of the survey asked about plans to change smoking cessation education provision.

Three nurses from Smokefree Nurses Aotearoa/New Zealand reviewed the questionnaire to determine face and content validity. Three nurse educators who delivered smoking cessation education to undergraduate nurses piloted the questionnaire to confirm content validity and check the wording and functionality of the questionnaire. Consequently the way the responses were recorded online was amended.

Data analysis

Survey Monkey data was exported into Microsoft Excel 2007. Responses from individuals at the same schools were combined to give individual school level results. Qualitative data were categorised and collated. Responses were aggregated across the questions in sections two to five to determine in what years (one, two and/or three) smoking cessation education is taught. The data were summarised with counts rather than percentages because of the small numbers. Results are provided by school, not by individual respondent or nursing programme.

Results

Nurse educators (n=24) from 14 (of 17) schools of nursing responded to the questionnaire. All participants worked in mainstream programmes. They included paper coordinators (n=8), lecturers (n=7), programme leaders (n=5), year coordinators (n=2), programme coordinator (n=1), and Head of School (n=1). The number of participants per school varied from seven (n=1), to three (n=1), to two (n=2) and one (n=10).

Most schools included smoking cessation education in their curricula (n=12). Two did not. Most taught the recommended ABC approach (n=8) followed by the change theory/Five As approach (n=7). Three taught both approaches. With regard to support to quit smoking, most schools taught students about NRT (n=9), followed by face-to-face support (n=6), motivational interviewing (n=6), and telephone support (n=5) (Table 1). With regard to other treatments and interventions one school covered hypnosis and acupuncture in years one and two, one covered acupuncture and one covered the Allen Carr approach. Of these three schools two
taught the ABC approach and one taught ABC and the change theory/Five As approach.

Smoking cessation was most commonly taught in education about health promotion (n=10), followed by public health (n=8), health and wellness (n=8), Maori health (n=3), medical/surgical (n=2), mental health (n=1), pathophysiology (n=1), primary health (n=1) and in orientation week (n=1). Smoking cessation was not included in education about pharmacology in any schools. With regard to teaching smoking cessation interventions in relation to priority populations, just over half the schools addressed smoking and pregnant and breast-feeding women (n=8), followed by Maori (n=7), children and young people (n=7), mental health (n=6), Pacific peoples n=6), hospitalised patients (n=2), addiction service consumers (n=1) and Asian peoples (n=1).

Schools used combinations of education delivery methods including lecturers, guest speakers/outside agencies and e-learning resources (although it was not asked if this is the Ministry of Health ABC e-learning module). Two schools reported input from District Health Board (DHB) smoking cessation coordinators. The total hours of taught smoking cessation education varied from one to two hours (n=5) to two to four hours (n=2) to four to five hours (n=3) (Table 1). Smoking cessation content occurred in some schools in all three years (n=3), while others included it in two years (n=5) or one year (n=4).

Eight schools assessed students’ knowledge of smoking cessation education in their curricula (Table 1). Five provided details of the type of assessment used. Assessments included exams, written assignments, group projects, and a DHB questionnaire. Three schools used more than one form of assessment. Two schools reported clinical observation. Smoking cessation was an optional choice in some assessments. The form of assessment in three of the schools was unclearly reported ("other"; "none" & "other"; a “survey”).

Six schools indicated they planned to change their smoking cessation content. Of these, four did not teach the recommended ABC smoking cessation approach, one taught both the ABC and change/Five As theory approach and one taught the ABC approach only. Planned changes included developing a new curriculum; reviewing on-line options; integrating smoking cessation education across the curriculum; and introducing it into mental health and community nursing modules. Of the two schools which did not teach smoking cessation one was reviewing this and the other had no plans to include it in the curriculum.

Smoking cessation education was fragmented in at least seven schools. For example, respondents from four schools did not know if smoking cessation was taught in other years or areas than those they reported on. In two further schools, respondents contradicted one another about whether smoking cessation was in their curricula or not. One school was categorised as offering smoking cessation education because further details were provided. The other school was not because only one of seven participants responded affirmatively (with no answers to support this) and six responded negatively.

Respondents from one school contradicted each other about the smoking cessation approach taught. One respondent said that the change theory/5As approach was taught, and the DHB smoking cessation team delivered the education. DHB sources are unlikely to deliver anything but ABC smoking cessation education. A second respondent from the same school reported that both the ABC and change theory/5As approaches were taught. This school was counted as teaching both approaches.
Table 1.  
*Smoking Cessation Education Content and Educational Process in Schools of nursing (N=14)*

<table>
<thead>
<tr>
<th>Smoking Cessation Content</th>
<th>Schools (n)</th>
<th>Educational process</th>
<th>Schools (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking cessation approach taught</td>
<td></td>
<td>Assessment of smoking cessation education</td>
<td></td>
</tr>
<tr>
<td>ABC only</td>
<td>5</td>
<td>Yes</td>
<td>8</td>
</tr>
<tr>
<td>ABC &amp; change theory</td>
<td>3</td>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Change theory only</td>
<td>4</td>
<td>No response</td>
<td>2</td>
</tr>
<tr>
<td>No smoking cessation in curriculum</td>
<td>2</td>
<td>No smoking cessation in curriculum</td>
<td>2</td>
</tr>
</tbody>
</table>

| Support to quit smoking*                  |             | Hours of taught content                      |             |
| Nicotine replacement therapy              | 9           | 1 - 2                                        | 5           |
| Face-to-face                              | 6           | 2 - 4                                        | 2           |
| Motivational interviewing                 | 6           | 4 - 5                                        | 3           |
| Telephone                                 | 5           | No response                                  | 2           |
| Other (1 public health focus; 1 unspecified) | 2             | No smoking cessation in curriculum           | 2           |
| No response                               | 2           |                                              |             |
| No smoking cessation in curriculum        | 2           |                                              |             |

Note: *Could select more than one*

**Discussion**

The results raise a serious question about the preparation of student nurses for smoking cessation interventions in primary and secondary care settings in New Zealand. While 12 schools of nursing included some smoking cessation education in their undergraduate curricula, only five reported solely teaching the ABC approach currently used in workplaces and recommended in the national Smoking Cessation Guidelines. This could improve if schools planning changes to their curricula offered the ABC approach solely, and if smoking cessation education is coordinated across curricula.

The strengths of this study are that it is national and provides a baseline against which preparing nursing
students to address smoking can be measured. In addition to a number of limitations, the results are not generalisable because of the small numbers and for the following reasons. It is not clear how comprehensive the results are. We do not know how many staff were invited to participate and how many did not respond. We received contradictory responses from respondents in some schools, with participants not knowing what was taught elsewhere in their curricula. Therefore, school-level data may be unreliable or incomplete. While mainstream programmes were well represented with responses from staff in 14 of 16 mainstream programmes, no educators from Maori or Pacific nursing programmes participated.

Despite the limitations there are useful findings. Half the schools teach the change theory/5As models for smoking cessation. Schools teaching these models are unaware of or disregard both evidence discrediting this approach for helping smokers to quit and the National Smoking Cessation Guidelines (New Zealand Guidelines Group, 2005; West, 2005; West & Hardy, 2006). This result is similar to findings from a survey of undergraduate nursing programmes in the United States where fewer than a quarter of those surveyed used evidence-based national clinical guidelines produced by the US Department of Health and Human Services (Wewers et al., 2004). In order to prepare students for practice in clinical placements and after registration, schools must ensure the most recent evidence-based approach (currently ABC) is taught consistently.

More students should be educated to give access to NRT to people who want to quit smoking. Currently nurse prescribing is by individual authorisation from the Nursing Council of New Zealand (Nursing Council New Zealand, 2011). While giving Quit Cards for NRT is not actually prescribing it prepares students to fulfil the potential for nurses to prescribe routinely in their practice. In addition, learning about NRT will dispel registered nurses’ misconceptions about the role of nicotine in causing disease (Wong et al., 2007). Poor knowledge about NRT may be a barrier to providing effective treatment. Nicotine is responsible for addiction. It is the products of combustion rather than nicotine that have the greatest risk for disease (International Agency for Research on Cancer, 1986).

While several schools cover hypnotherapy, acupuncture and Allen Carr smoking cessation interventions we did not determine if they were taught as effective smoking cessation treatment alternatives. Alternative therapies should not be recommended until there is robust evidence to support their effect. There is no evidence of the long term effectiveness of acupuncture; evidence supporting hypnotherapy is weak; and insufficient evidence is available to support conclusions about Allen Carr’s method (Abbot, Stead, White, & Barnes, 2006; Ministry of Health, 2008; White, Rampes, & Campbell, 2006).

Smoking cessation education and practice offers opportunities to alert students to and directly address, health inequities. The small number of schools that included smoking cessation education together with priority populations was disappointing. Maori, Pacific Island peoples, those on low incomes, and mental health service users have higher prevalence rates of smoking than European New Zealanders, so contributing to disparities in health (Blakeley, Tobias, Atkinson, Yeh, & Huang, 2007; Ministry of Health, 2010b; Oakley Browne, Wells & Scott, 2006).

The results show that in schools of nursing smoking cessation is most commonly taught within the areas of health promotion, public health and health and wellness. Smoking cessation is an essential component of tobacco control (World Health Organisation, 2003). Through smoking cessation education students can learn about public health, tobacco control and essential elements of health promotion such as community action and advocacy (World Health Organisation,
There have been many calls for nurse action in tobacco control (Andrews & Heath, 2003; Jairath, Mitchell, & Filleon, 2003; Malone, 2006; Sarna & Bialous, 2005). There are local examples of student nurse advocacy. For example, in 2008 nursing students with the support of onsite nursing staff successfully advocated for a totally smokefree campus at Nelson-Marlborough Institute of Technology (A. Horn, personal communication, May 12, 2011). Students have researched, written and published articles promoting smoking cessation in nursing curricula and practice (Cryer, Wong, & Stokes, 2011; Mossman, Stevens, & Van Rooyen, 2010).

Skills and knowledge assessment support learning. Yet the results show little assessment of smoking cessation education with only two schools using clinical observation (but not skills assessment). Sarna et al. (2006) also found that few schools of nursing evaluated smoking cessation skills in clinical practice, or offered opportunities to acquire these. Practical assessments are recommended because new graduates are expected to be able to deliver effective smoking cessation interventions.

We did not explore barriers to delivering smoking cessation education. Nevertheless, inconsistent responses and unawareness of smoking cessation education in other curriculum areas indicated that integrating this content can be problematic. Sarna et al. (2009) identified lack of preparation of educators, low priority in crowded curricula, negative attitudes, smoking by nursing students and/or staff, and lack of assessment as barriers to smoking cessation education in schools of nursing overseas. It would be interesting to know if these apply in New Zealand.

Our results reflect the discretionary nature of smoking cessation education. While academic freedom is an important principle in tertiary education, schools of nursing prepare students to meet the health needs of New Zealanders. New Zealand nursing curriculum content is developed and audited using policies, procedures and guidelines laid down by the Nursing Council of New Zealand. With the availability of effective interventions both schools and the Nursing Council must take responsibility for ensuring that students are educated to reduce population level health problems such as smoking. Schools of nursing are also guided by advisory panels that include end-users of their services. It is essential that education needs are conveyed directly and strongly to schools via these fora.

Conclusion

The Ministry of Health expects all health care workers to provide brief advice on quitting smoking to all patients who smoke. This study showed many undergraduate nurses are not adequately prepared for this role. With the availability of the online ABC education and permission for student nurses to become Quit Card providers, everything is in place for schools of nursing to enable students to achieve the core smoking cessation competencies that all health care workers should have. We recommend each school undertakes a curriculum evaluation to ensure national guidelines for smoking cessation interventions are included, integrated and coordinated across the curriculum, and that both skills and knowledge assessment are incorporated into smoking cessation education.

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