

*Résumé*

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**Les interventions de lutte  
au tabagisme pratiquées par les infirmières  
des écoles postsecondaires en Ontario**

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Les interventions de cessation faites par les infirmières auprès d'étudiants de niveau postsecondaire pourraient s'avérer une stratégie efficace dans le cadre des efforts pour réduire le tabagisme chez les jeunes adultes. Cette étude se penche sur les méthodes que les infirmières œuvrant dans le milieu de l'enseignement utilisent pour identifier les fumeurs et offrir un soutien au sevrage tabagique. Des 108 infirmières travaillant dans 16 universités ontariennes, 83 ont rempli un questionnaire conçu par les chercheuses. De ce nombre : 8,2 pour cent ont interrogé presque tous leurs patients sur leur consommation de tabac; 27,4 pour cent ont posé très peu de questions; 83,1 pour cent ont conseillé aux fumeurs identifiés de cesser de fumer; 63,9 pour cent leur ont offert de l'aide; et 59 pour cent ont fixé des rendez-vous de suivis. La consommation de tabac était le plus souvent évaluée à l'occasion de consultations pour des problèmes respiratoires ou cardiovasculaires. Le plus souvent, l'aide aux fumeurs prenait la forme d'un aiguillage vers d'autres professionnels ou services. La mise en place d'une initiative de surveillance tabagique sur 10 des 16 campus, financée par le gouvernement, n'a exercé qu'une influence limitée sur les infirmières pour ce qui est de l'évaluation de la consommation de tabac et l'invitation à cesser de fumer. L'amélioration de la fréquence et de la qualité des interventions en matière de tabagisme faites par les infirmières d'établissements postsecondaires nécessitera peut-être un travail de sensibilisation et de soutien.

Mots clés : intervention de cessation, tabagisme, jeunes adultes, fumeurs, sevrage tabagique

# **Tobacco Intervention Practices of Postsecondary Campus Nurses in Ontario**

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Cessation interventions offered by nurses to postsecondary students could represent an important strategy for reducing smoking among young adults. This study examines how nurses working in campus health clinics identify smokers and provide cessation support. Of 108 nurses working at 16 universities in the Canadian province of Ontario, 83 completed a researcher-designed questionnaire. Of these, 8.2% asked almost all patients about their tobacco use and 27.4% asked almost none; 83.1% advised identified smokers to quit, 63.9% offered them assistance, and 59.0% arranged follow-up visits. Smoking was most often assessed during patient visits for respiratory or cardiovascular concerns. Assistance most often involved referral of smokers to other professionals or services. A government-funded tobacco control initiative implemented on 10 of the 16 campuses had limited influence on whether nurses assessed tobacco use and advised cessation. Education and support may be needed to improve the frequency and quality of tobacco interventions provided by nurses working on postsecondary campuses.

Keywords: smoking cessation, young adult, clinical nursing research

## **Introduction**

Despite successful efforts to reduce tobacco use in the Canadian population, the proportion of young adults smoking cigarettes has declined only modestly over the past decade, with 23% of those aged 20 to 24 still reporting current tobacco use (Health Canada, 2009). During the transition from adolescence to young adulthood, the prevalence of smoking and consumption of tobacco both rise substantially (Hammond, 2005; Lantz, 2003), as do the proportions of smokers intending and trying to quit (Hammond, 2005; Leatherdale & Shields, 2009; Patterson, Lerman, Kaufmann, Neuner, & Audrain-McGovern, 2004; Thompson et al., 2007). Thus, young adulthood is a period when smoking may either be rejected or become established as a long-term addiction with serious health risks (Backinger, Fagan, Mathews, & Grana, 2003; Biener & Albers, 2004; Hammond, 2005; Lantz, 2003).

In North America, more than half of the young-adult population pursues postsecondary education (Aud & Hannes, 2010; Drolet, 2005). Thus, smoking cessation interventions with students may be an especially important strategy for reducing tobacco use in this population.<sup>1</sup> In this regard, health professionals in campus health clinics may be ideally situated to offer brief tobacco interventions. Postsecondary students identify lifestyle issues, including addictions, among their top health concerns (Patterson & Kline, 2008) and perceive campus medical services as trusted sources of health information and assistance (American College Health Association [ACHA], 2009). Furthermore, there is convincing evidence that doctors (Lancaster & Stead, 2008), nurses (Rice & Stead, 2008), and other health professionals (Dent, Harris, & Noonan, 2009; Gordon et al., 2010) can increase smokers' chances of quitting by implementing a brief tobacco intervention protocol that includes asking about tobacco use, advising quitting, assessing readiness to quit, assisting with the quit attempt, and arranging follow-up. This evidence-based protocol is presented most comprehensively in the US Department of Health and Human Services 2008 document *Treating Tobacco Use and Dependence* (Public Health Service, 2008). It is mirrored with slight variations (such as the omission of the assessment step) in Australian, European, and Canadian best practice guidelines (Anonymous, 1997; Jackson et al., 2001; McIvor et al., 2009; Zwar et al., 2004), as well as the Registered Nurses Association of Ontario ([RNAO], 2007) guideline *Integrating Smoking Cessation Into Daily Nursing Practice* and the US *Tobacco Free Nurses* initiative ([www.tobaccofreenurses.org](http://www.tobaccofreenurses.org)).

While uptake of best practice guidelines for treating tobacco dependence has been relatively widespread among primary care physicians in the community (Crawford et al., 2005; Friend & Levy, 2001; Thorndike, Rigotti, Stafford, & Singer, 1998; Tong, Strouse, Hall, Kovac, & Schroeder, 2010; Tremblay, Cournoyer, & O'Loughlin, 2009; Tremblay et al., 2001) and on some postsecondary campuses (Lawrance & Lawler, 2008), it is unknown whether and the frequency at which nurses in campus clinics are intervening around tobacco. Burke (2008) reports that half of the health-care providers in a campus clinic spoke to their clients about smoking, and Fagan (2007) reports that more than two thirds did so, but neither study differentiated among physicians, nurses, or other health professionals. Studies comparing the cessation counselling practices of

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<sup>1</sup> Harm-reduction strategies that stimulate smokers to reassess their smoking behaviours, take steps to protect others from their tobacco smoke, reduce their tobacco consumption, and possibly even quit smoking may also be important with this age group and highly viable nursing interventions (*cf.* Logan & Marlatt, 2010). The current study, however, specifically addressed smoking cessation intervention.

physicians and nurses in community and hospital settings, on the other hand, have found that nurses intervene around tobacco less frequently than physicians (Tong et al., 2010; Tremblay et al., 2009). In a study with Canadian acute-care nurses, Schultz, Johnson, and Bottorff (2006) determined that nurses often assessed smoking status but rarely advised quitting or offered assistance with quitting. Given that Canadian young adults (aged 18–24) report seeing a nurse on average 6.6 times per year (Statistics Canada, 2010), and given the growing evidence that smoking cessation treatment offered by a variety of clinician types can increase both abstinence rates and quit attempts (An et al., 2008; Public Health Service, 2008), it is important to determine whether campus nurses are providing cessation counselling.

The primary goal of this study was to examine whether and to what degree nurses who work in campus health clinics at Ontario universities help students to stop smoking. At the time of the study, a comprehensive government-funded tobacco control initiative called Leave The Pack Behind (LTPB) was operating in approximately half of Ontario's 19 publicly funded universities. While the major component of LTPB was student-to-student education and programming, LTPB also involved campus health professionals in strategies to promote cessation. These strategies included stocking campus health clinics with age-tailored patient education materials, informing clinic staff of the availability of a trained team of students to support smokers trying to quit, and offering "brief, clinical tobacco intervention" training to all campus health professionals. The study also considered the influence of this initiative on nurses' provision of cessation counselling.

## **Methodology**

### ***Procedures***

From the total of 19 universities in Ontario in 2004–05, a convenience sample of 16 universities was drawn. (One university was excluded because its health clinic was not overseen by campus administration and two were excluded because permission to distribute questionnaires could not be secured in time for the scheduled data collection.) Large and small commuter and residential universities were represented in the sample. Of the 16 universities, 10 were involved in the LTPB initiative.

With the agreement of the director of the campus health clinic, questionnaire packages were made available to all nurses who worked in the clinic. (Packages were either placed in nurses' mail slots or handed out at meetings.) All packages included an instruction sheet, a consent form, a confidential questionnaire, and two envelopes. Nurses choosing to participate in the study took about 5 minutes to complete the consent form

and questionnaire, seal each document in a separate envelope, and return both envelopes to the clinic's administrative assistant. The assistant gave them a thank-you letter and \$10 gift card redeemable at a local retailer. Study procedures were cleared by the Research Ethics Board at Brock University.

### **Participants**

Of the 108 questionnaire packages distributed to nurses, 85 (76.9%) were returned. It was noted that 52 of the 75 nurses from universities implementing LTPB and 31 of the 33 nurses from universities not implementing LTPB returned questionnaires,  $\chi^2(1, N = 107) = 7.47, p = .006$ .

### **Measures**

On the researcher-generated questionnaire, nurses were asked, "Of all the student patients/clients you see in a typical day, how many do you ask about their smoking status?" Response options were *almost none, some, about half, most, and almost all*. On seven-point scales, nurses also reported how often (1 = *never*; 7 = *always*) they asked about smoking at each of nine specific types of visit (annual physical, sexual health, etc.).

Nurses completed a checklist to describe all the actions they took with patients identified as smokers. Possible answers included *advise patient to quit, advise patient to call Smokers' Helpline* (the provincial quit line), *advise patient to find smoking cessation resources on the internet, suggest a follow-up appointment, and refer patient to another health professional or cessation service*. If nurses selected any of these options, they were considered to have advised the patient to quit. Those who selected any options beyond *advise patient to quit* were considered to have offered assistance. If they suggested a follow-up appointment or referred the patient to another health professional or cessation service, they were considered to have arranged follow-up. To further explore how assistance was offered, the questionnaire asked nurses how often they advised the use of self-help materials, nicotine patch, nicotine gum, or alternative cessation approaches (1 = *never*; 7 = *always*); whether smoking-related patient materials were kept in the clinic (*yes* or *no*); and where these materials were located (*waiting room, central storage/sample cupboard, examining rooms*). Finally, nurses at campuses with LTPB were asked whether they offered LTPB self-help materials to smokers (*yes* or *no*) and whether they referred smokers to LTPB peer-to-peer programming (*yes* or *no*).

### **Data Analyses**

To account for the possibility of differences between nurses from universities that were and were not implementing LTPB, chi-square tests and

mixed-model repeated measure designs (with presence of LTPB on campus as the between-subjects variable) were conducted. Results of these analyses are reported only where between-group differences were significant ( $p < .05$ ). Otherwise, descriptive statistics were used to assess how often nurses asked patients about smoking; whether or not nurses advised cessation, offered cessation assistance, and arranged follow-up; and whether and where smoking-related patient materials were kept in the clinic. One-group repeated measure designs were used to assess how frequently nurses asked about smoking status at each of the specific types of visit and how frequently they advised the use of specific cessation aids. Use of LTPB materials and services by nurses at campuses implementing LTPB was examined with descriptive statistics. SPSS 18.0 was used for all analyses.

## **Results**

### ***Sample Characteristics***

The average age of the nurses was 47.5 years ( $sd = 8.8$ ) and 97.6% were women. Most (72.8%) identified themselves as non-smokers; 17.3% identified themselves as former smokers and 9.9% as smokers. They worked an average of 3.9 ( $sd = 1.3$ ) days per week in the campus clinic. It was noted that 57.7% of the nurses at universities implementing LTPB had attended a 1-hour cessation-focused professional development session hosted by LTPB. No differences were observed between nurses at universities that were and were not implementing LTPB.

### ***Asking About Tobacco Use***

In the sample, 27.4% of the nurses reported typically asking *almost none* of their patients about tobacco use. On the other hand, 8.2% reported typically asking *almost all* of their patients about their smoking status. The remainder asked *most* (5.5%), *about half* (23.3%), or *some* (35.6%).

Analysis of the types of visit during which nurses were most likely to ask about smoking revealed the only between-group difference observed in the study: Compared to nurses at campuses with LTPB, those at campuses without LTPB asked more frequently about tobacco use,  $F(1, 81) = 4.94, p = .029$ . Of note, a significant main effect was also found for the within-subjects variable type of visit,  $F(8, 74) = 59.42, p < .001$ . As shown in Table 1, *post hoc* tests revealed that nurses were most likely to ask about patients' tobacco use during visits for upper and lower respiratory concerns and least likely to ask during visits for skin or musculoskeletal concerns.

**Table 1 Nurses Asking About Smoking Status During Dedicated Patient Visits**

Reason for Visit	Frequency of Asking	
	M	SD
Lower respiratory	5.68 <sup>a</sup>	1.62
Upper respiratory	5.65 <sup>a</sup>	1.66
Cardiovascular	5.06	2.02
Substance abuse	4.54 <sup>b</sup>	2.26
Reproductive	4.53 <sup>b</sup>	2.23
Annual physical	4.17 <sup>b</sup>	2.42
Mental health	2.71	2.00
Skin	1.73 <sup>c</sup>	1.12
Musculoskeletal	1.65 <sup>c</sup>	1.00

Notes: Responses were measured on a 7-point scale (1 = almost never; 7 = almost always). Means sharing a superscript letter do not differ; all others differ significantly ( $p < .05$ , two-tailed, Sidak adjustment for multiple comparisons). Across all visits, nurses at campuses without LTPB more frequently asked about tobacco use:  $F(1, 81) = 4.94, p = .029$  (main effect).

### **Advising and Helping Smokers to Quit**

Overall, 83.1% of nurses advised identified smokers to quit and 63.9% offered them assistance. Although advising and helping patients to quit were each unrelated to the presence of LTPB on campus, nurses on campuses with LTPB did have the added option of offering LTPB self-help materials to smokers. When this option was included as a method of assistance, the proportion of nurses offering assistance to identified smokers increased to 73.5% from 63.9%. With respect to how nurses offered assistance, 83.6% referred patients to another health professional or cessation service, 9.8% advised calling the provincial quit line, 8.2% suggested looking for information on the Web, and 6.6% offered a follow-up appointment. On campuses with LTPB, 68.8% of the nurses gave patients LTPB self-help materials. (Percentages sum to greater than 100 because participants could check more than one option.)

Analysis of how frequently nurses suggested self-help cessation resources, nicotine gum, nicotine patch, or alternative approaches showed no between-group effect. The within-subjects effect for type of assistance offered was significant:  $F(3, 79) = 50.92, p < .001$ . *Post hoc* tests revealed that self-help cessation resources were suggested significantly ( $p < .05$ ) more frequently ( $M = 5.06, sd = 2.12$ ) than any of the other approaches. Nicotine gum ( $M = 2.52, sd = 1.58$ ) and nicotine patch ( $M = 2.42, sd =$

1.51) were both suggested more often than alternative approaches ( $M = 1.96, sd = 1.17$ ).

All nurses reported that patient materials on smoking cessation were available in their clinics. Most (75.0%) reported that these materials were kept in a central location accessible to clinic staff; 77.5% reported that they were available in the waiting room; and 45.0% reported that they were kept in individual examining rooms.

### ***Arranging Follow-up***

Forty-nine nurses (59.0%) reported that they arranged follow-up for identified smokers. Virtually all of these (91.8%) referred smokers to physicians. As well, 18.5% referred smokers to counsellors, 9.3% referred them to pharmacists, and none referred them to another nurse. (Percentages sum to greater than 100 because participants could check more than one option.) Although arranging follow-up was unrelated to the presence of LTPB on campus, it was determined that 64.1% of the nurses on campuses with LTPB referred smokers to its peer-to-peer support. When this option was included as a method of referral, the proportion of nurses arranging follow-up increased to 66.3% from 59.0%.

## **Discussion**

Regardless of practice setting, nurses can make a contribution to the health of individuals and society by incorporating health promotion and tobacco-reduction initiatives into their practice (Canadian Nurses Association, 2011; International Council of Nurses, 1999; Sarna et al., 2009; Underwood & Ryan, 2010; Whitehead, 2005).

In this study of the tobacco-intervention practices of nurses working in campus clinics across Ontario, 83% of those surveyed advised quitting and up to 73% offered cessation assistance to patients who were identified as smokers. Only 37.0% of the nurses reported that they asked the majority of their patients about their tobacco use, and fully 27.4% reported asking almost none of their patients about tobacco use. In studies with nurses working in hospitals or other acute-care settings, 50–90% reported asking a majority of their patients about tobacco use, 39–66% advised cessation, and 13–49% offered assistance (Sarna et al., 2009; Schultz et al., 2006; Tong et al., 2010; Tremblay et al., 2009). The present results suggest that nurses on campus ask fewer patients about tobacco use but provide quitting advice and assistance to a larger proportion of patients identified as smokers. The differences in results across studies may reflect heterogeneity in nurses' role expectations across settings. It has been suggested, for example, that health promotion activities such as brief tobacco intervention may be more consistent with the role expectations

of nurses working in community settings than with those of nurses working in acute-care and hospital settings. The commitment to health promotion reflected in most services offered by campus clinics may help to explain the relatively high rates of cessation assistance offered by campus nurses. Their low rate of asking about tobacco use, however, appears at odds with this explanation. It may be that nurses in campus clinics respond to the demands made on their time by asking about patients' smoking status only when they expect to be able to provide advice and assistance. Similar practices and implications for care would likely be observed among nurses in other types of high-volume, walk-in clinic, where time pressures and limited opportunities for follow-up may inhibit them from addressing smoking cessation with patients. Alternatively, campus clinics may be structured such that brief tobacco intervention is regarded as the responsibility of physicians and thus is rarely initiated by nurses. This possibility is corroborated by the results of a study in which Lawrance and Lawler (2008) determined that virtually all physicians (96%) working in campus clinics advised identified smokers to quit, and most (72%) offered assistance. Other barriers not investigated here but previously found to interfere with health professionals' practice of brief tobacco intervention (e.g., feeling ill-equipped to intervene, prioritizing other health concerns over smoking cessation, anticipating hostility from the patient on the topic of smoking) may also explain why campus nurses ask so few patients about smoking. In any case, the findings suggest that there is room for improvement in terms of how often nurses in busy walk-in (campus) clinics inquire about and respond to patients' smoking status.

Unlike most investigations of nurses' brief tobacco intervention practices, this study looked explicitly at the type of appointment in which nurses asked about tobacco use, and determined that most often it was related to upper or lower respiratory concerns. Their frequency of asking was significantly greater in these types of visit than in visits for cardiovascular concerns, where asking was, in turn, significantly greater than in visits for substance abuse, reproductive issues, or an annual physical. Patients presenting with mental health, skin, or musculoskeletal concerns were very rarely asked about their tobacco use. Given the vast evidence indicating that tobacco use exacerbates respiratory and cardiovascular conditions (US Department of Health and Human Services, 2010), nurses might be expected to ask about tobacco use in visits for these conditions. What is surprising is how infrequently nurses asked about tobacco use during annual physicals. Visits for annual physicals represent an obvious opportunity to determine patients' smoking status and implement brief tobacco intervention. Not only is preventive advice expected in these appointments, but research has shown that patients who smoke

are more likely to recall receiving cessation information during wellness visits than during visits for an acute illness (Flocke & Stange, 2004). Accordingly, this type of visit may be among the best opportunities for engaging smokers in discussions and interventions to promote cessation.

Among the 73% of nurses who provided assistance to identified smokers, more than 80% did so by referring patients to another health professional. Referrals were almost always made to physicians; only a small minority of nurses referred to counsellors or pharmacists, and none referred to another nurse. Other forms of assistance offered by the nurses included suggesting a follow-up appointment with themselves, encouraging patients to call the provincial quit line, and suggesting the Web as a source of information and support; however, no more than 10% of nurses reported offering any of these forms of assistance. Nurses' reports of how often they recommended specific quit aids clearly show that they encouraged the use of self-help materials far more often than they recommended nicotine replacement therapies (NRT), and that they very rarely suggested alternative remedies.

Overall, these findings suggest that nurses took steps to assist smokers with their efforts to quit, but these steps infrequently involved their directly delivering cessation interventions. Their proclivity to refer to physicians highlights the importance of ensuring that doctors in campus clinics are prepared and able to consistently and effectively intervene around tobacco use. Similarly, it raises the question of whether nurses are aware that their own advice and assistance to patients has the potential to synergistically augment any brief tobacco intervention provided by physicians and thus increase smokers' likelihood of successfully quitting (Public Health Service, 2008). Nurses' relatively infrequent recommendation of NRT mirrors similarly infrequent recommendations of NRT by campus physicians (Lawrance & Lawler, 2008). This suggests that students who smoke are getting very little information or encouragement to use NRT when they visit a campus clinic. While a few recent population studies have concluded that NRT is less effective when self-administered (Alpert, Connolly, & Biener, 2012; Pierce & Gilpin, 2002), a much larger body of clinical studies shows that NRT combined with support by a health professional meaningfully improves the chances of success (Hays et al., 1999; Shiffman et al., 2002; Shiffman & Sweeney 2008; Stead, Perera, Bullen, Mant, & Lancaster, 2008; Zhu, Lee, Zhuang, Gamst, & Wolfson, 2012). Furthermore, dialogue about NRT can engage patients in important conversations about their own strategies and motivations for quitting — regardless of whether they ultimately choose to use it. Given the effectiveness of NRT in clinical practice, it should be recommended more often.

The presence of the LTPB tobacco-control initiative on some of the campuses where the nurses worked had subtle but important effects on nurses' practice of brief tobacco intervention. For example, the total proportions of nurses who reported "assisting" smokers in their attempts to quit and "arranging" follow-up were greater when the definitions of these behaviours included options available through that initiative (e.g., "provide LTPB's self-help program" and "refer to LTPB peer team"). Indeed, 68.8% of nurses on campuses with LTPB reported offering its self-help program to patients and 64.1% said they referred patients to its peer support. While this study was not intended to examine the effectiveness of the initiative, the findings do suggest that the availability of pertinent, age-tailored resources and services may increase the likelihood of assistance being offered to smokers. In this regard, the findings support and extend those of Schultz et al. (2006), who determined that a supportive setting was associated with more widespread brief tobacco intervention by nurses working in hospitals. The data suggest that nurses in a variety of high-traffic, walk-in clinics might also be more inclined and better able to engage patients in tobacco interventions if the clinic structure and systems support this practice.

This study found that all campuses had smoking cessation materials on site and most (77.5%) kept these materials in the waiting room. Ideally, materials would be kept in the examining rooms where nurses (or other health professionals) can quickly hand them to smokers as they advise and help them to quit smoking. On the other hand, considering that many patients are not receiving smoking cessation advice or assistance during appointments, the availability of these materials in the waiting room may increase their accessibility to smokers.

### ***Limitations***

While the overall response rate for the study was just over 75%, the higher response rate among nurses on campuses not implementing LTPB suggests a possible bias in the results. The clinical training for LTPB may have made nurses on those campuses more aware of their own shortcomings relative to best practice. This may have led them to avoid completing a questionnaire that might reveal these weaknesses, or to report their tobacco intervention practices from a less optimistic perspective compared to nurses on campuses where LTPB was not implemented. This possible bias, along with the relatively small sample size and the use of unverified self-report, may limit the generalizability of the results. Nevertheless, given the paucity of research examining the tobacco intervention practices of nurses on university campuses, this study provides valuable preliminary data.

The possibility that nurses were following a harm-reduction approach when working with patients who smoked was not explored. Nurses may have been quietly encouraging smokers to take steps to reduce their smoking and limit its harmful effects (on themselves or others) rather than directly advising and urging smoking cessation. When abstinence is not the singular goal, both the nurse and the client can consider any positive behavioural changes as therapeutic successes. This empowers the client and reflects important values of client-centred nursing. This study specifically would have benefited, and the field in general would benefit, from more attention to how nurses use harm-reduction strategies when intervening with high-risk behaviours.

### ***Implications***

Fundamental similarities in the organization and delivery of health services on campuses across Canada and the United States imply generalizability of these results well beyond the provincial sample frame. Furthermore, given that clinics on university campuses typically operate like walk-in clinics in the community, it is not unreasonable to expect that many of the conclusions drawn from the present results would apply to other fast-moving outpatient clinics. With that in mind, the following practice implications are suggested.

The results of this study reveal poor adherence to best practice guidelines, including the RNAO (2007) guideline, which calls for nurses to ask every patient about tobacco use and provide cessation advice and assistance to all smokers. Given the high prevalence of tobacco use among young adults (Health Canada, 2009) and the interest of this group in quitting (Messer, Trinidad, Al-Delaimy, & Pierce, 2008), it is disconcerting that many nurses are not asking about tobacco use among visitors to campus health clinics. Patterns of tobacco use are highly changeable during young adulthood (Hammond, 2005; Lantz, 2003), and there is tremendous potential to prevent escalation and long-term use by helping smokers to quit (Fagan et al., 2007). Although it is possible that doctors working in campus clinics are implementing brief tobacco intervention (Lawrance & Lawler, 2008), optimal clinical practice would see nurses also asking all patients about tobacco use and following up accordingly.

To encourage more frequent implementation of brief tobacco intervention by nurses, it might be beneficial to provide nurses with efficient, effective ways to do so, and to offer evidence of the meaningful impact that their actions can make in supporting smoking cessation among young adults. For instance, nurses could be helped to find ways of tailoring tobacco- and cessation-related messages to patients' presenting concerns. There is evidence, for example, that smoking delays healing of injuries (Wong & Martins-Green, 2004), adversely affects male and

female reproductive outcomes (Soares, 2009), exacerbates skin conditions (Metelitsa & Lauzon, 2010), and is highly co-morbid with poor mental health (Serras, Saules, Cranford, & Eisenberg, 2010). Recognition of these associations might help nurses to see ways to broach the topic of smoking with patients who present with these conditions. Given that tailoring health behaviour advice to the presenting concern is associated with a twofold to fourfold increase in patients' recall of the discussion (Flocke & Stange, 2004), this type of tailoring might also enhance the impact of nurses' advice to quit.

It might also be important for nurses to understand that brief tobacco intervention delivered repeatedly by a variety of health professionals increases smokers' odds of successfully quitting. Along similar lines, it may also help for nurses to know that students view the staff of their medical centre as a highly credible source of health information (ACHA, 2009; Kwan, Arbour-Nicitopoulos, Lowe, Taman, & Faulkner, 2010) and that smokers with whom campus health professionals discuss smoking are more satisfied with their visit than those with whom no discussion of smoking takes place (Burke, 2008). These data may assuage nurses' concerns that patients will respond negatively to inquiries and health advice related to their tobacco use.

Finally, the type of assistance that nurses provide requires attention. Despite clear evidence that telephone quit lines can boost smokers' odds of quitting (Stead, Perera, & Lancaster, 2009), only 1 in 10 nurses surveyed used this method to help smokers to quit. Whether the underuse of quit lines stems from a lack of awareness, a disinclination to refer to services off campus, or a perception that quit lines cater to older smokers, the results reveal the need to enhance nurses' understanding of the utility of quit lines as a cessation support. The same is true of nurses' very low frequency of recommending NRT as a form of assistance — especially given the population with whom they work. Many young adults are intermittent or “social” smokers (Hammond, 2005); are motivated to quit (Messer et al., 2008); and, compared to older adults, are less addicted to nicotine, with less entrenched smoking behaviour (Messer et al., 2008). These characteristics make them good candidates for NRT. Providing nurses with more and specific training about the pharmacokinetics, indications, and clinical effectiveness of cessation aids may increase their likelihood of recommending them to patients who smoke. This type of information might be included both in professional training sessions on brief tobacco intervention and in nursing curricula. Additionally, because many nurses may not have an opportunity to attend training sessions, quarterly bulletins or newsletters distributed to clinics might be a valuable mechanism.

### **Conclusions**

For many young adults, visits to campus health clinics represent their first opportunity to interact with health professionals without parental supervision or knowledge. Nurses working in campus health clinics have the opportunity to establish a standard of care that young patients might come to expect in their future interactions with health professionals. Assessment of smoking and advice and assistance with efforts to quit should be a regular feature of this care. More research is needed to understand both individual factors and characteristics of the campus and clinic environment that support and inhibit campus nurses' practice of cessation counselling.

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