# Nursing Students' Response to Tobacco Cessation Curricula in Minnesota Baccalaureate Nursing Programs

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## ABSTRACT

Ensuring that RNs entering the profession possess the skills necessary to provide evidence-based tobacco cessation interventions to patients can substantially increase the number of smokers who are provided with such treatments. Quantitative descriptive survey data were collected in spring 2007 from two samples: 675 baccalaureate nursing students in their senior coursework and directors of 10 Minnesota baccalaureate nursing programs. Two of 10 programs contained all items of content and these students were significantly more knowledgeable, whereas 8 of the programs did not cover the content adequately and students were less knowledgeable. Minimal clinical application was reported by students in all 10 of the programs. Essential competencies regarding health promotion for tobacco cessation need to be established. Programs need to include all three domains of learning including cognitive, skill acquisition, and attitudes or beliefs.



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This study began with a vision of a future in which more Minnesotan smokers than in the past would be exposed to tobacco cessation interventions. To ensure this vision would become a reality, RNs must assume a major leadership role in implementing tobacco cessation strategies for smokers. RNs are in pivotal positions to provide tobacco cessation interventions, as nurses spend more direct contact time with patients, than in the health care setting by other health professionals. RNs are the largest group of health professionals in Minnesota, and they work in diverse settings that include populations who may be uninsured or underinsured.

## BACKGROUND

Smoking cessation strategies have proven to be effective in reducing smoking behavior. Ensuring that RNs entering the nursing profession are knowledgeable, skillful, and have the self-efficacy needed to take action in the provision of cessation interventions will exponentially increase the number of smokers served. Nursing curricula related to tobacco cessation content is typically limited. Kraatz, Dudas, Frerichs, Paice, and Swenson (1998) reported that the traditional baccalaureate nursing programs (BSN) of Illinois averaged 2.21 hours on the topic in their 3 years of curriculum. Wewers, Kidd, Armbruster, and Sarna (2004), in a national survey of U.S. BSN education, found that only 45.3% of the programs included content about clinical smoking cessation and that most respondents reported tobacco content was taught for less than 1 hour in 3 years of undergraduate curriculum. The majority of baccalaureate programs did not require any clinical experiences related to tobacco treatment, and few required any clinical experiences in the area of tobacco dependence.

Hornberger and Edwards (2004) examined tobacco cessation content in the 28 Kansas RN programs, including both associate and baccalaureate degree programs. The descriptive design used a mailed survey instrument adapted from

Wewers et al. (2004), with a response rate of 75% (21 programs). Results indicated that most Kansas RN programs focused on pathophysiology of tobacco-related diseases. Fewer programs provided specific tobacco intervention training strategies. Sixteen programs did not include information about clinical tobacco cessation techniques, 17 did not require students to practice cessation techniques, and 20 programs did not provide instruction in the clinical intervention techniques suggested by the Agency for Healthcare Research and Quality (AHRQ) (2008) guidelines.

Clark, McCann, Rowe, and Lazenbatt (2004) used a sample of undergraduate nursing students from an Australian university in 2001 and measured knowledge of smoking on 38 items. Results indicated that students received higher scores on general knowledge items, compared with items about the specialized effects of smoking on health. Similar results had been found by Boccoli, Federici, Trianni, and Melani (1997) in a study regarding Italian nursing students. The students were more knowledgeable about the general health hazards due to tobacco smoking rather than specialized health hazards due to tobacco smoking. Neither the study by Clark et al. (2004) or the study by Boccoli et al. (1997) examined nursing students' knowledge about tobacco cessation and no studies were found regarding tobacco use and cessation, curriculum in Minnesota BSN programs.

The theoretical framework used for the research study was based on the Health Belief Model that provided a framework to examine perceived barriers, perceived benefits, and self-efficacy (Strecher & Rosenstock, 1997). Four main constructs of the Health Belief Model (i.e., perceived threat, knowledge, perceived barriers and benefits, self-efficacy) were used to select specific study variables as conceptualized within the model to explore why some nurses take action and others fail to provide tobacco cessation interventions.

### Aim

This study aimed to determine whether Minnesota BSN students receive education about tobacco-related disease, tobacco use, and tobacco dependence instruction from their nursing programs and their perception of the education. A multimethod design that included data collected from both the nursing students and the baccalaureate program was used to increase validity.

## METHOD

### Data Collection and Sample

For this quantitative descriptive study, data were collected from two samples using two different questionnaires. The setting for recruitment for both samples was all of the traditional and accelerated BSN programs in Minnesota. At the time of the study (i.e., spring semester 2007), seven private and four public higher education institutions ($n$ = 11) with BSN programs were eligible to participate. One of these institutions, with approximately 40 students, declined to participate with either the student or program survey. Inclusion criteria were BSN programs with students completing their senior year of study during spring semester of 2007. Excluded from the sample were programs that had students registered in mobility or career-laddering programs that advance associate degree nurses to baccalaureate degrees, or programs in the early stages of development without senior-level students.

*Ethical Considerations*. Institutional review board approval was obtained from the principal investigator's (B.K.L.) institution, and additional approval was obtained from participating institutions if required. After informed consent was received, the student survey was administered to students at each participating institution in their classroom during or immediately following a scheduled class time.

*Student Survey Instrument*. The student survey instrument consisted of a 46-item questionnaire on knowledge about tobacco treatment, tobacco use history, beliefs about smoking, self-efficacy and behavioral application of cessation interventions, and demographic items. The student survey measured demographic characteristics including age, gender, highest level of education, previous licensure, ethnicity, employment and income, and marital status. Tobacco use history was measured using the National College Health Risk Behavior Survey (U.S. Department of Health and Human Services, 1995). Knowledge about tobacco treatment was measured using a questionnaire adapted from the questionnaire developed, pilot tested, and published by Fried, Reid, and DeVore (2004) for students in medicine, dentistry, and nursing. Items included:

- My program contains content about the health effects of tobacco-related diseases.
- My program contains content about effects of secondhand smoke.
- My program contains content about symptoms of withdrawal from nicotine.
- My program contains content about my role in helping patients who use tobacco to quit.
- My program prepared me to help smokers quit.
- My program gave me an opportunity to practice cessation counseling skills during a clinical experience.
- My program gave me an opportunity to help individuals who use spit tobacco quit.

The items were measured using a 5-point Likert scale that ranged from 1 (*totally disagree*) to 5 (*fully agree*).

Students' self-efficacy and behavioral application of tobacco was measured using the modified "5 A's" Training Program Survey developed by Barta and Stacy (2005). The study reported using a panel of experts to assess content validity prior to pilot testing and administering the tool. Items were measured on a 5-point Likert type scale (i.e., *not at all comfortable*, *somewhat comfortable*, *moderately comfortable*, *very comfortable*, *extremely comfortable*) and included items on comfort regarding asking patients on admission whether they smoke and whether they are exposed to secondhand smoke, advising patients who smoke quit, assessing readiness to quit smoking, setting a quit date, providing cessation literature, and helping patients with nicotine replacement arrange for follow-up support. In addition, three items were added that asked the students whether it is a nurse's professional responsibility

to help smokers quit, whether nurses benefit patients by taking action to help them quit, and whether too many barriers exist to prevent nurses from helping patients quit (*strongly agree* to *strongly disagree*).

*Program Survey Instrument and Ethical Considerations*. During the site visit to administer the student surveys, the program survey was given personally to undergraduate program directors or department chairs for completion at their leisure and returned through the mail. Consent was implied through completion of the survey. The program survey used a questionnaire developed and published by Wewers et al. (2004) and based on a survey instrument originally developed for use among U.S. medical schools by Ferry, Grissino, and Runfola (1999). The Wewers et al. (2004) questionnaire was adapted for this study, as the questions about graduate coursework were omitted. The tobacco curricular content of the instrument was based on the AHRQ clinical practice guidelines. Wewers et al. (2004) reported that tobacco control experts in nursing reviewed the tool for content validity prior to pilot testing and administration.

The program survey focused on two major areas: tobacco and cessation curricular content, and treatment and action regarding tobacco cessation interventions. For the tobacco and cessation content areas, programs were asked whether the following topics were included as part of a required course or an elective, or not offered at all:

- Cancer risk from tobacco smoking.
- Health effects of tobacco-related diseases.
- Effects of secondhand smoking.
- Content of cigarette smoke.
- Symptoms of withdrawal.
- High-risk groups with the most difficulty quitting.
- Clinical smoking cessation techniques.
- Pharmacologic agents used for cessation.
- Role of public policy.
- Interaction of tobacco use with other issues, such as depression and weight loss.
- Counseling techniques.

For the treatment and action items, programs were asked whether the following topics were not covered, covered briefly, or covered in detail:

- Discussion of clinical intervention techniques.
- Stages of change theory by Prochaska and DiClemente.
- Motivational interviewing.
- Specific pharmacologic agents used in tobacco cessation settings.
- Nicotine replacement.
- Antidepressant therapy.
- Clonidine.

In addition, programs were asked whether their curriculum provides a setting in which students are taught tobacco cessation techniques to use with patients in clinical settings and which evaluation method was used to asses students' performance.

### Data Analysis

Statistical analysis was completed with SPSS version 15 software. Initially, descriptive statistics were performed on all variables for both the student and program surveys. Two scoring rubrics were developed using the questions from the two areas of the program survey. Regarding content area, 12 items became 3 possible ratings of responses on the rubric. This included reporting inclusion of content as part of required courses on: 10 to 12 items, 6 to 9 items, or 5 or fewer items in the curriculum. Regarding treatment and action area, 6 items were given a rating (i.e., *covered in detail*, *covered briefly*, *not covered*) by respondents. The rubric gave 3 possible ratings of responses. The programs' responses were then scored using the rubric in the two major areas. Schools or programs with the highest frequency of responses were defined as Group 1. Programs with a middle range of responses were Group 2. Group 3 were programs with few to no responses.

To compare the programs' ratings to students' perceptions of their program, students were grouped according to the rating their school or program received (Group 1, 2, or 3), group means were determined for the corresponding items from the student survey, and an analysis of variance (ANOVA) on the three groups means and post hoc testing on any significant differences were performed. For example, in the program survey content area, corresponding items in the student survey were about tobacco treatment knowledge. In the program survey treatment and action area, corresponding items in the student survey were self-efficacy and behavioral application.

Public and private programs were compared using students' responses on the student survey. Group means were determined for the student survey knowledge about tobacco treatment scale, self-efficacy and behavioral application scale, and the professional responsibility items. An ANOVA was completed on the two group means for each scale. Post hoc testing was not necessary because there were only two group means. Results were considered statistically significant if $p < 0.05$.

## RESULTS

The student survey had a response rate of 87%, with 675 of 777 senior nursing students at the 10 institutions completing the questionnaire. All 10 institutions completed the program survey. The majority of student participants were between 18 and 25 years (82.5%); female (90.9%); Caucasian (92.5%), and single never married (71.2%). Approximately one third of the students attended college in the Minneapolis and St. Paul area and two thirds of the students attended college out of state or in the Greater Minnesota (outside the Minneapolis and St. Paul metropolitan area). The majority of students (91.8%) reported they were nonsmokers, but when asked the number of times they used tobacco in the past 30 days, 17.5% reported use of tobacco, with 40% of those reporting use on 10 or more days in the past 30 days.

Approximately half of the students attended a private institution (50.4%) and half attended a public institution

(49.3%). There were no differences in the means of the students' responses on the self-efficacy and behavioral application scale. The means of private (3.65) and public (3.72) indicated that students at either kind of institution were moderately comfortable with these activities. There were no differences in the means on the three professional attitude items. The mean for the private institutions was 3.24, compared with the mean of 3.20 for public institutions. This indicated that students at both kinds of institutions agreed that it was their responsibility to provide tobacco cessation interventions and that the benefits outweigh the barriers. The mean for students attending public institutions (2.74) was significantly different regarding perceived knowledge, compared with that for students at private institutions (2.49). This indicated that there are knowledge differences between the students at the two kinds of institutions. **Table 1** provides the mean, standard deviation, and ANOVA results on these scales.

**TABLE 1**

**Students' Responses by Institution**

| | Private ($n$ = 333) | | Public ($n$ = 342) | | ANOVA |
|---|---|---|---|---|---|
| | Mean | *SD* | Mean | *SD* | *p* |
| Self-efficacy | 3.65 | 0.87 | 3.72 | 0.84 | 0.306 |
| Knowledge | 2.49 | 0.85 | 2.74 | 0.83 | 0.000 |
| Professional responsibility, benefits, barriers | 3.24 | 0.64 | 3.20 | 0.66 | 0.418 |

*Note: ANOVA = analysis of variance.*

**Program Survey Results**

The program survey had a 100% response rate, with all 10 institutions completing the questionnaire. To ensure anonymity, program names were excluded and a numbering system was created that yielded private programs 1 through 6 and public programs 1 through 4. None of the programs reported having a required course on tobacco-related diseases; however, 8 programs reported having tobacco-related diseases included in required courses. **Table 2** provides the ratings the programs received on the scoring rubric regarding the major area of content. Two programs (private 2 and public 2) received the highest rating with an answer of yes (i.e., that their program contained all 12 items of the tobacco and cessation content area). These two programs indicated that they teach cancer risk from tobacco smoking, health effects of tobacco-related diseases, effects of secondhand smoke, symptoms of nicotine withdrawal, high-risk groups with increased risk to start smoking, pharmacologic agents used for smoking cessation, role of public policy in tobacco control, interactions of tobacco with other issues such as depression, and counseling related to tobacco cessation as part of required courses. Three programs (private 5 and 6 and public 3) received the middle rating, as those programs contained between 6 and 9 items of the content area, and five programs (private 1, 3, and 4 and public 1 and 4) received the lowest rating, as those programs contained 5 or fewer items of the topics from the content area in their curriculum.

For the treatment and action area provided in **Table 2**, three programs (private 2 and 6 and public 2) received the highest rating, as those programs contained 3 or more items covered in detail and 3 items covered briefly, and they provided a clinical setting in which students are taught tobacco cessation techniques to use with patients and a way to evaluate students' performance. The items covered in detail or briefly included a discussion of clinical intervention techniques, stages of change theory, motivational interviewing, pharmacologic agents used for cessation, nicotine replacement, antidepressant therapy, and clonidine. Four programs (private 4 and public 1, 3, and 4) received the middle rating, as those programs contained 3 to 5 items covered briefly and 2 to 4 items not covered, and they did not provide a clinical setting and evaluation of students' performance. Three programs (private 1, 3, and 5) received the lowest rating, as those programs covered 2 items or less briefly and did not provide a clinical setting and evaluation of students' performance.

From the 10 participating programs, two programs (private 2 and public 2) received the highest ratings for both areas of the program survey. This indicated that these two programs contained all items for the tobacco and cessation curricular content, as well as the treatment and action items. Two programs (private 1 and private 3) received the lowest for both areas. This indicated that these two programs covered little content from the tobacco and cessation content area, as well as little content from the treatment and action items. One program received a middle rating for content and the highest rating on treatment and action. The remaining seven programs received a middle to low rating in the content area, and a middle to low rating in the treatment and action area.

**ANOVA: Students Grouped by Programs' Ratings for Content Area**

Students were grouped according to their programs' responses to the content area of the program survey. Group 1 included private 2 and public 2, the programs that received the highest rating in content area. Group 2 included private 5 and 6 and public 3, the programs that received the middle rating. Group 3 included private 1, 3, and 4 and public 1 and 4, the programs that received the lowest rating. A three-group ANOVA was completed comparing the group means on the knowledge about tobacco treatment scale from the student survey. **Table 3** provides the ANOVA and posthoc test results. For the knowledge scale, the means were 2.75 for Group 1, 2.66 for Group 2, and 2.52 for Group 3. A significant difference was found between Groups 1 and 3 on the ANOVA

**TABLE 2**

**Program Survey Response by Major Areas: Content, Treatment, and Action**

| | Content Area | | | Treatment and Action Area | | |
|---|---|---|---|---|---|---|
| Program/ Institution | 12 Items Included | 6 to 9 Items Included | ⩽ 5 Items Included | ⩾3 Items Covered in Detail, 3 Covered Briefly, with Clinical Performance | 3 to 5 Items Covered Briefly, 2 to 4 Items Not Covered, with No Clinical Performance | ⩽2 items Covered Briefly, 5 Items Not Covered, with No Clinical Performance |
| Private 1 | | | X | | | X |
| Private 2 | X | | | X | | |
| Private 3 | | | X | | | X |
| Private 4 | | | X | | X | |
| Private 5 | | X | | | | X |
| Private 6 | | X | | X | | |
| Public 1 | | | X | | X | |
| Public 2 | X | | | X | | |
| Public 3 | | X | | | X | |
| Public 4 | | | X | | X | |

**TABLE 3**

**Comparing Program Ratings by Students' Responses**

| | Group 1 (*n* = 134) | | Group 2 (*n* = 237) | | Group 3 (*n* = 304) | | ANOVA | Post hoc | |
|---|---|---|---|---|---|---|---|---|---|
| **Content Area** | **Mean** | ***SD*** | **Mean** | ***SD*** | **Mean** | ***SD*** | ***p*** | **Groups** | ***p*** |
| Knowledge | 2.75 | 0.85 | 2.66 | 0.81 | 2.52 | 0.86 | 0.017 | 1 and 3 | 0.021 |
| | **Group 1 (*n* = 241)** | | **Group 2 (*n* = 333)** | | **Group 3 (*n* = 101)** | | **ANOVA** | | |
| **Treatment and Action Area** | **Mean** | ***SD*** | **Mean** | ***SD*** | **Mean** | ***SD*** | ***p*** | | |
| Self-efficacy | 3.69 | 0.92 | 3.65 | 0.87 | 3.77 | 0.63 | 0.426 | | |

and posthoc test for the knowledge scale. **Table 4** provides the distribution of the means and standard deviations for the students' responses on the student survey knowledge about tobacco treatment scale. The knowledge about tobacco questions were measured on a 5-point Likert scale. The two variables "My nursing program contained content about the health effects of tobacco-related disease" and "My program contained content on the effects of secondhand smoke" were the only variables that received group means above 4. This indicates that students in these groups agreed their nursing programs contained these items. Three variables (My nursing program contained content about symptoms of withdrawal from nicotine, My nursing program contained content about my role in helping patients who use tobacco to quit, and My nursing program adequately prepared me to help smokers quit) had group means that ranged from 2.81 to 3.84, indicating that students did not really agree or more or less agreed their programs provided this content. Two variables (My program gave me the opportunity to practice tobacco use cessation counseling skills during a clinical experience and My program adequately prepared me to help spit tobacco users quit) had means that ranged from 2.17 to 2.82, indicating that students did not really agree their programs contained this content.

### ANOVA: Students Grouped By Programs' Ratings for Treatment and Action Area

Students were grouped according to their program responses to the treatment and action area of the program survey. Group 1 included private 2 and 6, and public 2, the programs that received the highest rating in the treatment and action area. Group 2 included private 4 and public 1, 3, and 4, the programs that received the middle rating. Group 3 included private 1, 3, and 5, the programs that received the lowest rating. A three-group ANOVA was completed, comparing items from the student survey self-efficacy scale. **Table 3** provides the groups' means, standard deviations, and the ANOVA results of the students' responses. No significant differences were found between the programs ranked as highest, middle, or lowest on the self-efficacy scale. **Table 5** provides the distribution of the means and standard deviations for the students' responses on the student survey for

**TABLE 4**

**Distribution of Student Responses on Knowledge of Tobacco Treatment Scale by Program Rating on Content Area**

| | Group 1 (*n* = 134) | | Group 2 (*n* = 237) | | Group 3 (*n* = 285) | |
|---|---|---|---|---|---|---|
| **Variable**[a] | **Mean** | ***SD*** | **Mean** | ***SD*** | **Mean** | ***SD*** |
| My nursing program contains content about the health effects of tobacco-related diseases. | 4.42 | 0.75 | 4.45 | 0.73 | 4.23 | 0.89 |
| My nursing program contained content on the effects of secondhand smoke. | 4.01 | 0.94 | 4.01 | 1.0 | 3.68 | 1.1 |
| My nursing program contained content of symptoms of withdrawal from nicotine. | 3.60 | 1.2 | 3.57 | 1.1 | 3.44 | 1.2 |
| My health professional program contained course content about my role in helping patients who use tobacco quit. | 3.84 | 0.98 | 3.61 | 1.0 | 3.46 | 1.2 |
| I think that my program adequately prepared me to help smokers quit. | 3.16 | 1.1 | 2.97 | 1.0 | 2.81 | 1.1 |
| My program gave me the opportunity to practice tobacco use cessation counseling skills during a clinical experience. | 2.82 | 1.3 | 2.62 | 1.2 | 2.31 | 1.1 |
| I think that my program adequately prepared me to help individuals who spit tobacco to quit. | 2.36 | 1.0 | 2.34 | 1.0 | 2.17 | 1.1 |

[a] *Answers are formulated based on a 5-point Likert scale in which 1 =* totally disagree*, 2 =* do not really agree*, 3 =* more or less agree*, 4 =* agree*, 5 =* fully agree.

self-efficacy. Students in all three groups reported being the most comfortable with asking patients on admission whether they smoke or whether they are exposed to secondhand smoke (all means were > 4.40). This indicates that students are very comfortable with these activities. The two items with the lowest means in the scale were assessing the readiness to quit smoking in the next 2 weeks of patients who smoke (Group 1 mean = 3.19, Group 2 mean = 3.12, Group 3 mean = 3.19) and helping patients who are ready to stop smoking to set a quit date in the next 2 weeks (Group 1 mean = 3.31, Group 2 mean = 3.25, Group 3 mean = 3.21). This indicated that students were moderately comfortable with these activities.

## DISCUSSION

This study aimed to determine whether Minnesota BSN programs contained content and provided clinical experiences related to tobacco diseases and tobacco cessation and their students' perception of their program. In spring 2007, BSN students in their senior courses were surveyed, as were the directors of the nursing programs. The number of students reporting tobacco use (7%) was similar to the 6% rate reported by Jenkins and Ahijevych (2003). The occasional smoker identified in this study, individuals who reported themselves as nonsmokers but reported use during the past month, is similar to a study reported by Chalmers, Seguire, and Brown (2002). Although the rate in the Chalmers et al. (2002) study was 9.2% of the students reporting occasional smoking, the reported occasional use (17.5%) was higher in this study. The percentages of students who were smokers for Australian and Italian nursing students were higher, as reported by Clark et al. (2004) (25.2% of men and 22.3% of women), and by Boccoli et al. (1997), with approximately 54% of third year students reporting smoking.

The Health Belief Model, used as the framework in the study, identifies knowledge about a disease or health condition as an essential aspect of health promotion and behavior change. Thus, it is important for nursing programs to ensure that tobacco health effects and cessation content is taught to nursing students. The findings of this study indicate that this transfer of knowledge is not occurring adequately. Students throughout the state did not agree that their program contained this content, as indicated by the grouped means on the students' knowledge scale of 2.5 to 2.75 on a 5-point scale. In addition, the transfer of knowledge is not occurring consistently throughout the state. Some students received more content than others, depending on where they attended school and whether the school was public or private. The alarming factor is that 5 of 10 programs (50%) in Minnesota teaching BSN programs received the lowest rating in the amount of tobacco content in their program, whereas 2 programs received the highest rating. For half of the programs in Minnesota, students are receiving the lowest levels of tobacco content. The level of content made a significant difference in students' responses between students in the programs with the lower levels of content and students in programs rated at a higher level of content.

Treatment and action content was examined by this research study. As a practice profession, the skill or practice element in learning (Bloom, 1984) is considered an essential component of nursing education and according to the Health Belief Model increases self-efficacy (Strecher & Rosenstock, 1997). The skill or practice element in learning was missing from 7 of the 10 Minnesota BSN programs. In addition, these

**TABLE 5**

**Distribution of Student Responses on Self-Efficacy Scale by Program Rating on Treatment and Action Content**

| | Group 1 (*n* = 134) | | Group 2 (*n* = 313) | | Group 3 (*n* = 101) | |
|---|---|---|---|---|---|---|
| **Variable**[a] | **Mean** | ***SD*** | **Mean** | ***SD*** | **Mean** | ***SD*** |
| How comfortable are you asking your patient on admission whether they smoke? | 4.40 | 0.76 | 4.43 | 0.74 | 4.45 | 0.62 |
| How comfortable are you asking your patient on admission whether they are exposed to secondhand smoke? | 4.43 | 0.75 | 4.43 | 0.71 | 4.54 | 0.56 |
| How comfortable are you advising your patient who smokes to quit? | 3.26 | 1.0 | 3.32 | 0.99 | 3.40 | 0.96 |
| How comfortable are you assessing the readiness to quit smoking in the next 2 weeks of your patient who smokes? | 3.19 | 1.05 | 3.12 | 1.05 | 3.19 | 0.95 |
| How comfortable are you assisting your patient who is ready to stop smoking to set a quit date in the next 2 weeks? | 3.31 | 1.07 | 3.25 | 1.0 | 3.21 | 0.93 |
| How comfortable are you assisting your patient who smokes by providing smoking cessation literature? | 3.78 | 0.94 | 3.81 | 0.98 | 3.94 | 0.84 |
| How comfortable are you assisting your patient who wants to quit smoking by using nicotine patches, lozenges, or gum? | 3.69 | 0.92 | 3.61 | 0.99 | 3.67 | 0.91 |
| How comfortable are you encouraging your patient who has set a smoking quit date to arrange follow-up support with a friend, family member, or doctor? | 3.62 | 0.97 | 3.66 | 0.98 | 3.75 | 0.90 |

[a] *Answers are formulated based on a 5-point Likert scale in which 1 =* totally disagree*, 2 =* do not really agree*, 3 =* more or less agree*, 4 =* agree*, 5 =* fully agree*.*

same 7 programs had not incorporated the basic smoking cessation guidelines of the AHRQ (2008) into their curriculum. Although no significant differences were found between the students' perceptions of their programs regardless of program rating, students as a whole reported the least amount of confidence with advising patients to quit, assessing patient readiness to quit, and helping the patient set a quit date in the next 2 weeks. These two skills require a higher level of developmental learning than the skills associated with providing a patient with cessation literature, nicotine replacements, or referring a patient to a supportive friend. Because the students in this sample are seniors, their developmental learning was expected to be at the highest level in their undergraduate education, compared with students in beginning levels (McDonald, 2007). What is unknown is whether the students' responses represent an appropriate level of developmental learning attainment, as there are no national or state level competencies for nursing education regarding tobacco cessation intervention or clinical performance. Thus, it is impossible to compare the program ratings to a standard or competency. Finally, it is unknown whether these students will continue to progress in achievement of these abilities once they enter the profession. Research in both of these areas is needed.

The third component of the Health Belief Model was the benefits and barriers individuals perceive when deciding to take action. Students from both private and public programs reported a level of 3.2 on a 4-point scale regarding their attitude about professional responsibility, the benefits, and the barriers of taking action for their patients, which indicated they agreed it was their responsibility, it benefits the patients, and there are not too many barriers. Nurses' attitudes and values influence their practice. Nurse educators must continue to facilitate learners' affective development during the students' educational experience (National League for Nursing, 2005). The affective domain encompasses attitudes, beliefs, and values and should be included when designing learning experiences (Scheckel, 2009).

## LIMITATIONS

Limitations include the potential for respondent bias, as the student survey was completed during the presence of the researcher and this may have affected the social acceptability of some of the responses. There was only one psychometric measurement tool used to measure students' responses, which does not allow for validation of responses. For the program survey, only one survey was completed by each institution by the programs' curriculum director and this may have affected or limited content validity.

## CONCLUSION

The scope and standards of nursing practice describe health promotion and prevention of disease as an essential nursing role (American Nurses Association, 2004). To optimize patient outcomes, nurses must be prepared to be actively involved in health promotion to contribute to beneficial health changes. In this regard, the nursing or public health profession should develop essential competencies

for health promotion that include tobacco-related diseases, tobacco prevention, and cessation for nurses entering practice. These health promotion competencies would need to address the three domains of education, including knowledge, skills, and beliefs or attitudes about tobacco-related diseases and cessation (Bloom, 1984; Strecher & Rosenstock, 1997). Through the development of a minimal set of competencies, programs would have a foundation for curricular planning that would serve as a baseline to write instructional objectives and learner outcomes.

One particular method for programs to ensure tobacco content is taught is to have a specific course designated for this content instead of having it threaded. In this study, none of the programs reported a specific course. Kraatz et al. (1998) reported this similar curricular approach in the Illinois undergraduate nursing education study. Tobacco-related content is threaded among various nursing courses rather than taught in one assigned course. Although threading of content has positive aspects, including that the material can be taught from a variety of nursing perspectives and specialties, the negative aspect is that the content may lack depth or portions of the content may be lost. Each faculty assumes another faculty taught the material; no specific course was assigned the learning outcomes for the students. Another weakness with threading content is that faculty who are assigned only small portions of content may not invest the needed continuing education time necessary to keep them abreast of current evidence-based practice and changes in the knowledge base. Clinical opportunities or simulated learning opportunities to practice abilities associated with developmental learning are not planned and may not occur. Research is needed to determine the knowledge level of faculty regarding tobacco-related diseases and cessation.

Nursing programs need to thoughtfully consider adding a clinical skill component. Chalmers et al. (2002) stated that efforts must be made to help students increase their skills in the health promotion role. Clinical experience is a part of all nursing programs, and tobacco cessation intervention can be incorporated into patient care plans in all clinical settings and through laboratory simulation. Students can be taught to not only provide patient teaching, but to practice cessation counseling skills during a clinical experience. Every day, nurses and nursing students provide care for patients who are tobacco users. The opportunities to incorporate cessation counseling skills are endless, but it will take a knowledgeable faculty trained in these skills to ensure that this occurs for all students and to plan assignments for students that require both written, as well as physical, application of these skills. Research is needed to determine the skill level of faculty who will teach cessation counseling skills to students.

A final component of education is attitude or beliefs. As described by the Health Belief Model, knowledge is not enough to change behavior, but one's attitudes or beliefs are an essential component (Strecher & Rosenstock, 1997).

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