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Original Article

Feasibility of using a standardized patient encounter for training chiropractic students in tobacco cessation counseling

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Objective: Although tobacco cessation training is included in many health profession programs, it is not yet routinely incorporated into chiropractic education. The purpose of this study was to assess the feasibility of incorporating a problem-based learning tobacco cessation activity into a lecture course for chiropractic students.
Methods: Seventy-two students were assigned to participate in two 1-hour lectures on health promotion counseling and tobacco cessation followed by an experiential student-driven lab session using standardized patients at various stages of dependency and willingness to quit. The intervention was based on the transtheoretic model and the "5 A's" of counseling (ask, advise, assess, assist, arrange). Outcomes were assessed via (1) questionnaires completed by the standardized patients regarding the students' use of the 5A's, and (2) questionnaires completed by the students using a 5-point Likert scale of "strongly disagree" to "strongly agree" on the acceptability of this method of learning. Descriptive statistics were computed.
Results: Sixty-eight students (94%) completed the activity, spending a median of 2.5 minutes with patients. Over 90% addressed 4 of the 5A's: 99% asked patients if they were smokers; 97% advised them to quit; 90% assessed if they were willing to quit; and 99% offered assistance in quitting. Only 79% arranged a follow-up visit. Overall, students expressed a positive response to the experience; 81% said it increased their confidence in being able to advise patients, and 77% felt it would be valuable for use in their future practice.
Conclusion: This active learning exercise appeared to be a feasible way to introduce tobacco counseling into the curriculum.

Key Indexing Terms: Chiropractic; Education Assessment; Learning, Problem-Based; Tobacco Cessation

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INTRODUCTION

The adverse health effects from smoking tobacco account for over 400,000 deaths each year in the United States, making it the leading preventable cause of death and the actual cause of 18% of deaths. This is more than the combined total from human immunodeficiency virus, alcohol use, illegal drug use, homicide, suicide, motor vehicle crashes, and fires. Smoking tobacco, alone, causes 90% and 80% of lung cancer deaths in men and women, respectively.[1,2] The correlation between tobacco use and premature death is one of the best-documented associations in the epidemiologic literature.[3]

Assessing Tobacco Use Status

In 2010, 19.3% (45.3 million) of all American adults aged 18 years and older smoked.[4] The 2008 clinical practice guideline from the US Department of Health and Human Services (USDHHS) on treating tobacco use and dependence recommends that clinicians should ask all patients if they use tobacco, and document this in their records.[5] In a meta-analysis, it was found that just documenting patient report of tobacco use increases the rate of cessation interventions provided by clinicians (odds ratio [OR] = 3.1; 95% confidence interval [CI], 2.2–4.2).

Counseling in the Clinical Setting

People who stop tobacco smoking greatly reduce the risk of disease and premature death, and smoking cessation is beneficial for all age groups.[6] There is strong evidence that personalized physician advice influences patients to quit, when compared with patients not so advised (OR = 1.3; 95% CI, 1.1 to 1.6).[5,7] Brief counseling ($\leq$3 minutes) by a physician is effective in achieving long-term abstinence, compared with no intervention (OR = 1.3; 95% CI, 1.0–1.6).[5,8] Higher-intensity counseling sessions >10 minutes achieve nearly twice the abstinence rates of brief counseling of <3 minutes (22.1% compared with

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13.4%, respectively).[5,8] Use of state-sponsored quit-lines for telephone counseling is also effective compared with no counseling or self-help only (OR = 1.6; 95% CI, 1.4–1.8).[5] The use of the 5 A's construct for behavioral change is one of the most widely recognized approaches to tobacco cessation and is recommended by the US Preventive Task Force.[9] The 5 A's are as follows: (1) Ask if patients smoke; (2) Advise them to quit; (3) Assess their willingness to quit; (4) Assist them in quitting; and (5) Arrange follow-up.[5]

Tobacco Cessation Counseling Training

For many years, tobacco cessation training has been addressed at some level in a number of health professions, including medicine, nursing, dentistry, and pharmacy, although implementation is still not considered optimal.[10,11] Use of the 5 A's is prevalent, and experiential approaches such as the use of standardized patients is recommended.[12–14]

Some evidence suggests that complementary and alternative medicine (CAM) practitioners are well suited to delivering health promotion messages since patients see them as being supportive of prevention.[15] A survey of practitioners found that CAM providers were more likely than mainstream physicians to record patients' tobacco use.[16] A feasibility study funded by the National Institutes of Health conducted in 20 private chiropractic practices with 210 patients developed a brief office-based intervention with promising results, suggesting that tobacco cessation interventions are feasible in chiropractic practice.[17]

Furthermore, research suggests that tobacco use may be a risk factor for low back pain (LBP) and may contribute to poorer outcomes in people with musculoskeletal back pain, including outcomes of rehabilitation care.[18–20] A systematic review of smoking as a risk for LBP concluded that the evidence suggests a link.[21] Since chiropractors see a very high proportion of patients with musculoskeletal pain, particularly LBP, tobacco cessation may be a relevant issue to include in their training. In clinical practice, chiropractors often, but not routinely, address tobacco cessation.[22]

Although in its *Standards for Doctor of Chiropractic Programs* the Council on Chiropractic Education mentions that students should be aware of the health effects of tobacco use, it does not specify that they must be trained in cessation counseling.[23] In a 2005 survey of 808 patients visiting teaching clinics in 8 chiropractic colleges, 40% of tobacco users said they were advised to quit and only 18% received information on quitting from their intern.[24] To date, little research has been reported that addresses incorporating tobacco cessation counseling into chiropractic training.[25,26] The purpose of this study was to assess the feasibility of providing training to chiropractic students in tobacco cessation counseling through the use of a clinical encounter based on the 5 A's, using a standardized patient.

METHODS

This descriptive study assessed the feasibility of incorporating an active learning activity into a lecture course in which chiropractic students performed a brief tobacco cessation counseling intervention based on the 5 A's using standardized patients. It was approved by the Logan College of Chiropractic institutional review board, and the participants (students) signed an informed consent form prior to engaging in the activity.

Study Participants

All 72 students in the fall 2012 trimester of the Community Health and Wellness Promotion course were included. This course is offered during the 6th trimester of 10 in the Doctor of Chiropractic (DC) program.

Intervention

The first portion of the intervention consisted of a 1-hour lecture on health promotion counseling techniques and a 1-hour lecture on tobacco cessation, which were already part of the course. The 2nd portion of the intervention was the experiential session. For this section, students were scheduled at the college's assessment center to perform the tobacco cessation counseling techniques with standardized patients. Students were previously oriented to the assessment center and the protocol of the activity in order to avoid any confusion on the day of the activity. The sessions were scheduled to allow approximately 10 minutes for the student to conduct the counseling. As per the assessment center's usual protocol, the sessions were video recorded and stored on a secure, password-protected server.

The intervention was based on use of the transtheoretic model of change, which assesses an individual's readiness to act on a new health behavior and provides strategies to guide the individual through what it terms the "stages of change" and the 5 A's. The transtheoretic model posits that health behavior change occurs in stages: (1) precontemplation, in which the patient is unable or unwilling to change; (2) contemplation, in which he/she is considering change within the next 6 months; (3) preparation, in which he/she has made some plans and is preparing to change within the next month; (4) action, in which he/she has already made some concrete change; and (5) maintenance, in which the change has been sustained for at least 6 months; and (6) termination, in which he/she has no temptation and is confident of not returning to the unhealthy habit.[27,28] The standardized patients were instructed to respond according to the stage they were assigned to portray. A total of 8 standardized patients were used, with 2 presenting in precontemplation stage, 2 in the contemplation stage, 2 in the preparation stage, and 2 in the action stage. Students had access to smoking-cessation brochures, available from the US Public Health Service, and other resources for each stage to give to the patients they counseled.

The students were also instructed in use of the 5A's, with the handout (Fig. 1) based on the US Public Health Service's *Treating Tobacco Use and Dependence* provided to them for reinforcement.[5]

Outcomes

Outcomes were assessed in 2 ways: (1) The standardized patients were presented with written questions about the students' counseling, including whether they included each

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1. **Ask** if he/she smokes (current AND in the past). If they do, continue:
2. **Advise** him/her to quit. Your advice should be:
   1. NON-JUDGMENTAL
   2. CLEAR— example: "I think it is very important that you quit…"
   3. STRONG—example: "As your doctor, I want you to know that quitting is the most important thing you can do to protect your health."
   4. PERSONALIZED–example: "Tobacco use is directly affecting your ability to get over this back problem."
3. **Assess** willingness to quit.
   I'm not interested in quitting right now. **Precontemplation**

   I'm not able to quit right now. **Precontemplation**

   I'm thinking about quitting in the next 6 months. **Contemplation**

   I'm planning to quit in the next month. **Preparation**

   I'm in the process of quitting right now. **Action**

4. **Assist** them in quitting.
   Precontemplation: Tell patient it's OK, you understand, but if they change their mind you are always willing to help. May give them "Not Ready To Quit" brochure.
   Contemplation: Suggest patient think about reasons to quit and ways to deal with barriers to quitting. May give them "Thinking About Quitting" handout.
   Preparation/Action: Go over "Your Quit Check List" OR "You Can Quit Smoking" and give patient a copy to take home.
5. **Arrange** follow-up. Be sure to tell patient you will discuss at their next visit, and flag their chart so that you will follow up.

Figure 1 - Instruction sheet for students on using the 5 A's for smoking cessation counseling.

of the 5A's (Fig. 1); these required simple dichotomous responses on a checklist; and (2) the students were asked to provide their written opinions on a 5-point Likert scale of "strongly disagree" to "strongly agree" on the value of the activity to their learning process and future practice; it included an open-ended question on how the activity could be improved. In addition, the students' encounters were timed.

Data Management and Analysis

Participants were identified only by number in the analysis. All data were solely accessible by the research team in a password-protected file. The students were permitted the option of accessing their own personal video using a password for self-assessment purposes; however, this was not a requirement. The video-recorded encounters were stored in a password-protected file. Descriptive statistics were computed, and results of open-ended questions were analyzed for themes.

RESULTS

A total of 68 of 72 (94%) students completed the intervention. They spent a median time of 2.5 minutes (mean, 2.7; range, 0.60–6.60 minutes) with a patient. Overall, most students (over 90%) successfully addressed 4 of the basic 5A's, according to the standardized patients' reports: 67 of 68 asked if they smoke; 66 of 68 advised them to quit; 61 of 68 asked if they were willing to quit; and 67 of 68 offered assistance in quitting. Only 54 of 68 (79%) arranged a follow-up visit (Table 1).

Figure 2 displays students' opinions on their experience with the intervention. Students expressed a positive response to the experience: 81% said it increased their confidence in being able to advise patients, and 77% felt it would be valuable for use in their future practice. Twenty-nine (of 68) commented on how the experience could be improved. Of these, 7 said nothing needed to be improved and noted the positive aspects of the experience: it was well-organized, helpful to have a checklist to follow, and a good experience to hone their skills with patients. The 22 suggestions for improvement identified the following to be areas that could be improved: having more preparation, particularly regarding interaction with a patient prior to the activity; having an opportunity to watch an example of a counseling session prior to the activity; having standardized patients with more training, so that they have more complex presentations and interact with the doctor more realistically; and having immediate feedback from the patient and/or instructor.

DISCUSSION

Nearly 50 million adult tobacco smokers in American account for over 400,000 deaths each year. As the largest preventable cause of death, cessation counseling has been recommended to reduce the use of tobacco.[1,2,4] We studied the feasibility of including an active learning activity into a lecture course, where chiropractic students performed a

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Table 1 - Standardized Patient Assessment of Student Doctor Counseling ($n = 68$)

	Yes		No	
In this clinical encounter, the student doctor	***n***	**%**	***n***	**%**
Asked me if I smoke currently or have in the past	67	99	1	1
Was nonjudgmental	67	99	1	1
Offered to assist me in quitting	67	99	1	1
Advised me to quit smoking	66	97	2	3
Listened carefully	65	96	3	4
Asked me about my willingness to quit	61	90	7	10
Addressed my concerns	60	88	8	12
Was clear and direct in his/her advice	57	84	11	16
Offered me printed informational material	57	84	11	16
Explained that tobacco is directly affecting my health	56	82	12	18
Arranged a follow-up visit	54	79	14	21
Offered me quit-line phone number	50	73	18	27

cessation counseling intervention based on the 5 A's while using standardized patients. Our results indicate that this problem-based learning experience is feasible to incorporate into a traditional lecture-format course. Students expressed a positive attitude toward it, and feedback from the standardized patients indicated that the majority of students were successful in applying the 5 A's in the counseling session. Extending the counseling opportunity to include, at a minimum, a second follow-up session might also prove to be helpful in assisting students to further practice the 5 A's and to provide practice in delivering further advice, something that occurs inconsistently among health care workers.[29]

While the feasibility of incorporating tobacco cessation into the curriculum is indicated, providing opportunities for students to assess and counsel patients should be incorporated repeatedly in the health care curriculum, including outpatient clinical training, to reinforce this process. Geller et al.[12] report the lack of confidence of 2nd-year students vs 4th-year students when providing counseling to patients. They attribute this to the likelihood of 4th-year students having more experience in counseling patients.[12] As students progress through their health care program, it seems imperative that tobacco cessation activities be intertwined throughout the curriculum.

A limitation of this study is that it only sampled a single class in 1 institution; results may not be generalizable to other populations. It should also be kept in mind that its purpose was only to assess the feasibility of incorporating the tobacco-cessation counseling activity into the class, not the effectiveness of such counseling in actual practice. However, the 5 A's and the transtheoretic model have both been shown to be effective when used by other types of practitioners.[5]

Because tobacco use is the leading actual cause of death in the United States,[2] as well as the fact that in 2007 the Council on Chiropractic Education instituted a new competency addressing wellness and health promotion,[23] we feel that incorporation of tobacco-cessation counseling training into chiropractic educational programs is important in enabling chiropractic physicians to provide the highest standard of care. Use of problem-based learning methods is known to achieve better learning outcomes and is well received by students, so it should be encouraged whenever possible.[13,14] Further research is needed to determine whether or not students will use tobacco-cessation counseling with their patients during internships or within their daily practice once they become licensed chiropractic physicians.

CONCLUSION

This active learning exercise appeared to be a feasible way to introduce tobacco counseling into the DC curriculum.

Q1: This activity increased my confidence in being able to give advice to patients on tobacco cessation.
Q2: I would like to have more activities like this to supplement lectures.
Q3: We should have had more time to do this activity.
Q4: Participating in a simulated clinical encounter after the lecture on this topic is more valuable than having only a lecture.
Q5: I would participate in activities like this even if it were not required.
Q6: Overall, I feel that this activity will be valuable to my future practice.

Figure 2 - Questions asked of the students' opinions of the intervention experience ($n = 64$).

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CONFLICTS OF INTERESTS

No funding sources or conflicts of interest were reported for this study.

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