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Experiences in Teaching and Learning

Student pharmacists provide tobacco use prevention education to elementary school children: A pilot experience

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ABSTRACT

Background and purpose: The purpose of this article is to describe a service learning experience involving tobacco prevention education and to measure the education's effect on the learners' knowledge of tobacco products.

Educational activity and setting: Student pharmacists planned and presented a 40-min tobacco prevention education program using the Tar Wars curriculum to fourth and fifth grade students at three suburban elementary schools in Western Massachusetts. Mean scores on a five-question assessment given to school age children before and after the presentation were compared. A total of 206 elementary school students in ten classrooms participated.

Findings: The average survey score increased from 1.87 on the pre-survey to 3.72 out of a maximum of five on the post-survey ($P < 0.01$).

Discussion and Summary: Student pharmacists provided tobacco prevention education to three suburban elementary schools. The children demonstrated an increase in short-term knowledge regarding tobacco use. Tobacco prevention is a unique co-curricular opportunity for student pharmacists to get involved in their community.

Background and purpose

The 2013 Center for the Advancement of Pharmacy Education (CAPE) Outcomes¹ include specific mention of health and wellness (Outcome 2.3), population-based care (Outcome 2.4), and educator (Outcome 3.2) as critical to the development of practice-ready pharmacists. Additionally, the Accreditation Council for Pharmacy Education (ACPE) 2016 Standards² require pharmacy programs to provide and assess co-curricular experiences that advance the professional development of student pharmacists. This article describes such an activity at the Western New England College of Pharmacy.

Tobacco use is the leading cause of preventable morbidity and mortality in the US.^{3–5} It is responsible for approximately 480,000 deaths each year and causes tobacco related chronic disease in an estimated 8,600,000 people.⁴ In 2014, approximately 16.8% of adults in the U.S. were smokers.³ One of the Healthy People 2020 campaign objectives is to reduce this percentage to less than 12%.⁶ Although this objective focuses on adults who smoke, approximately 90% of these individuals began smoking before 18 years of age.⁴ According to the 2014 National Youth Tobacco Survey, 7.7% of middle school and 24.6% of high school students reported use of one or more tobacco products in the previous 30 days.⁷ It is estimated that every day, 3800 youths smoke their first cigarette and 1000 of

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these become daily smokers.⁷

The causes of the current tobacco use epidemic are complex. Factors that influence youth to begin smoking include glamorization of smoking, mass marketing, and social influences including peer pressure.⁷ Prevention is integral to ending this epidemic. Healthy People 2020 outlines a comprehensive strategic plan to reduce tobacco use with objectives aimed at reducing tobacco prevalence, health system changes to promote smoking cessation, and social and environmental changes that discourage tobacco use.⁶ The Centers for Disease Control's (CDC) Best Practices for Comprehensive Tobacco Control Programs 2014 provides an evidenced-based guide for states to establish comprehensive tobacco control programs.⁸ It promotes an approach that combines educational, clinical, regulatory, economic, and social strategies as research has demonstrated that a multicomponent effort is most effective. It specifically states that community programs and school policies and intervention should be part of the comprehensive effort and combined with mass-media education campaigns.

In contrast to community based programs, several national anti-smoking campaigns have been evaluated in the literature. The impact of the national mass-media "truth" anti-smoking campaign on national smoking rates among 50,000 students in the eighth, tenth, and twelfth grades from 1997 to 2002 found a 7% decline in smoking rates in the sample population and attributed 22% of the decline to the anti-smoking campaign.⁹ Due to the cost, such mass-media campaigns are usually undertaken only by large organizations or governmental bodies, whereas school-based tobacco prevention education programs may exist on a smaller scale such as at the state, county, or school district level.

The CDC does not promote a specific tobacco prevention curriculum, though several programs are available.⁸ Tar Wars, a program owned and operated by the American Academy of Family Physicians that was developed in 1988, has frequently been cited in the literature.¹⁰⁻¹⁶ This structured curriculum is available for free and does not require specific training for the presenter. It has been shown to improve students' knowledge regarding tobacco use, though no long-term studies evaluating its effects on tobacco use behaviors have been published.^{13,14} Since its inception, the Tar Wars program has reached more than 10 million children. The desired audience for the program is fourth and fifth grade students who may be starting to feel the pressure from those around them to try tobacco products. It is ideal to provide this education to elementary school students as waiting until middle or high school may be too late. The goal of the program is to provide education on the harmful effects of tobacco through class discussion, hands on activities, and small group work. This report will document the planning, implementation, and evaluation of this educational intervention. Specific objectives of the Tar Wars program are in Table 1.¹⁶

In addition to not promoting a specific curriculum, the CDC does not specify who should provide tobacco prevention education. Within elementary schools, the education is often provided by teachers or a school nurse.¹⁰ Although school nurses possess adequate knowledge of the negative health effects of tobacco, they may not have time in their daily schedule to educate large portions of the student body. A possible solution is to incorporate volunteers from outside the school, such as healthcare professionals or students studying health-related fields. Pharmacists are considered to be one of the most trusted health professionals and are readily accessible within the community.¹⁷ The pharmacist's role in providing smoking cessation activities is well documented.¹⁸⁻²² The ability of student pharmacists to provide education has been documented in the literature; some of the published topics include: proper antibiotic usage, asthma, vaccines, over-the-counter medication selection, and bone density screenings.²³⁻²⁷ Student pharmacists receive tobacco cessation education within the didactic portion of the pharmacy curriculum in addition to knowledge and skills gained during experiential hours. Given pharmacists knowledge of tobacco use and smoking cessation and their role in patient education for prevention and treatment of other diseases, it is reasonable to suggest that pharmacists and student pharmacists would be a viable resource for providing tobacco prevention education. While several reports describe the role of nursing students in providing tobacco prevention education, to date, there is no published description of pharmacists or student pharmacists providing youth-directed tobacco prevention education.^{12,15,28} The purpose of this project was to explore the feasibility of student pharmacists providing tobacco prevention education using the Tar Wars curriculum at local elementary schools. This article describes the first-year experience of the pilot project.

Educational activity and setting

In 2014, students at Western New England University College of Pharmacy sought to establish a relationship with a local area school district to provide the Tar Wars Program. A faculty member who was board-certified in ambulatory care was identified as the project advisor due to potential interest. The role of the faculty project advisor was to serve as a liaison between the college and the local school district, and to aid with training and troubleshoot any challenges during the presentation. Emails were sent to three local school districts to solicit interest in the program. One area school district with three elementary schools responded. Prior to

Table 1
Presentation objectives.

Objective #	Objective
1	To increase the students' knowledge of the short-term effects of tobacco use
2	To demonstrate how smoking decreases lung volume
3	To illustrate the cost of tobacco use
4	To identify and understand the reasons why people use tobacco products
5	To increase students' knowledge of how tobacco advertising attempts to influence them and how to think critically about tobacco advertising, as well as to heighten students' awareness of the tobacco industry's marketing strategies

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