Pharmacists' Perceptions of Tobacco Sales in an Elevated-Risk Population

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Kimberly M. Kelly, PhD, MS¹, Parul Agarwal, MPH¹, Omar Attarabeen, MS¹,
Virginia G. Scott, PhD¹, Betsy Elswick, PharmD¹, Brandon Dolly, BS¹,
and Cindy Tworek, PhD, MPH¹

Abstract

Background: Policies by the American Medical Association and the American Pharmacists Association advocate for the discontinuation of tobacco sales in pharmacies, yet tobacco sales remain lucrative for pharmacies in the United States. West Virginia has the highest smoking rate (29%) and the second highest lung cancer incidence in the country. **Objective:** This study examined pharmacists' perceptions of tobacco sales in pharmacies and awareness of relevant policies. **Methods:** West Virginia pharmacists (n = 195) were surveyed to understand tobacco sales in West Virginia pharmacy, utilizing Diffusion of Innovations as a theoretical framework. **Results:** Eighty-one percent were community pharmacists, and 39% practiced at independent pharmacies. Sixty-two percent reported that their pharmacies did not sell tobacco. Pharmacists at independent pharmacies were more likely to be in rural areas/small towns, have decision-making control over tobacco sales, and not currently selling tobacco products. Other community pharmacists (ie, at regional and national chains) were more likely to sell tobacco products, not have decision-making control over tobacco sales, and perceive revenue loss from discontinuing tobacco sales. Other types of pharmacists (eg, hospital) estimated a greater number of patients who were smokers/tobacco users. A logistic regression showed that less perceived revenue loss was associated with greater likelihood of not selling tobacco products (all *Ps* < .05). **Conclusions:** Findings indicate a strong movement among community pharmacists to curtail the use of tobacco. Generating support for the elimination of tobacco sales and adoption of tobacco cessation initiatives in community pharmacy could help reduce smoking rates in elevated-risk populations.

Keywords

pharmacy, community, policy, tobacco, Appalachian region

Introduction

Cigarette smoking is a leading risk factor for a host of chronic diseases, including lung cancer and cardiovascular disease, and thus is a serious public health threat.¹ Although disease-associated morbidity and mortality due to cigarette smoking is a concern worldwide, it is particularly troublesome in the Appalachian region, which experiences some of the highest rates of cigarette smoking in the United States.^{2,3} The federally designated Appalachian region, which runs along the Appalachian Mountains from the states of New York to Mississippi, has elevated rates of poverty, lower levels of education, health care shortages, and geographic barriers⁴ and is a uniquely challenging environment for modifying elevated smoking rates. West Virginia, the only state residing entirely in the Appalachian region, has the highest cigarette smoking rate (29%),⁵ the second leading lung cancer rate,⁶ and the highest prevalence of coronary heart disease among US adults.⁷ Thus, the need to manage

these tobacco-associated health threats is dire, and a diversity of health professionals is needed to provide unique intervention modalities to address this pressing concern.

One such member of the health professional team is the pharmacist. Most visibly, pharmacists supervise fulfilling prescription requests for tobacco cessation products in many different settings including community and hospital pharmacies.⁸ Additionally, pharmacists may provide behavioral support and therapeutic over-the-counter medications (eg, nicotine replacement therapy) to aid in smoking cessation.⁹ Yet pharmacists may also be involved in tobacco sales in the community, and to the extent that they desire and are

¹West Virginia University, Morgantown, WV, USA

Corresponding Author:

Kimberly M. Kelly, PhD, MS, West Virginia University, HSC PO Box 9510, Morgantown, WV 26506, USA.
Email: kmkelly@hsc.wvu.edu

able, may exert some control over the dissemination of tobacco products to the public.¹⁰⁻¹⁵ Furthermore, research has found that pharmacies are accepting an increasing market-share of the distribution of cigarette sales; the percentage of cigarettes sold in the United States by pharmacies has risen while the total amount of cigarettes sold has fallen.¹⁵ For example, in the state of Massachusetts, 69% of licensed pharmacies sold tobacco products¹⁵ and more than 50% of pharmacies in the state of Indiana did so.¹⁶

In spite of pharmacy's disproportionately increasing role in tobacco sales in the United States, a number of empirical studies have indicated a growing concern among pharmacists, consumers, and other health professionals regarding tobacco sales in community pharmacies. In community pharmacies, pharmacists indicate that tobacco sales may conflict with their work ethics and professional standards.¹⁶⁻²⁵ For example, a 1997 study found a number of pharmacists in Indiana believed that tobacco products should not be sold in pharmacies.¹⁶ In the state of California, most participants (72.3%) surveyed did not agree with tobacco being sold in pharmacies.¹⁷ More recently, pharmacy employees in California were pleased to stop selling tobacco products after a few pharmacy managers have voluntarily decided to abandon selling tobacco.²¹ The California Board of Pharmacy will vote on the resolution for final approval to eliminate tobacco sales in pharmacies.²⁶ There is no current policy for the state of West Virginia regarding tobacco sales in pharmacies, although one such policy has been proposed.²⁷

At the national level, 2 key professional groups have advanced policies to curtail tobacco sales in community pharmacy in the United States. In 2009, the American Medical Association (AMA) adopted a policy to encourage pharmacies to remove tobacco products and to urge the American Pharmacists Association (APhA), the National Community Pharmacists Association, and other such organizations to adopt a policy for their members to remove tobacco products from pharmacies, and in 2012, they added a policy to encourage recognition of pharmacies that voluntarily stop selling tobacco.²⁸ In 2010, the APhA adopted a policy to discourage tobacco sales in pharmacies, persuading various stakeholders including pharmacies, state and federal governments, state boards of pharmacies, colleges of pharmacy, the Accreditation Council for Pharmacy Education, pharmacists, and student pharmacists to discontinue supporting/using pharmacies that continue to sell tobacco products.^{29,30}

In spite of these policies regarding tobacco sales and the potential of pharmacies to play an active role in smoking cessation, a number of pressures make it difficult for community pharmacists to play an active role in decreasing smoking levels in their communities. Pharmacists in chain pharmacies may not have the autonomy to make decisions about tobacco sales at their particular location; rather, such

decisions are made at the corporate level. This may be further complicated by some pharmacies requiring pharmacists to sell tobacco products, although an increasing number of independent and corporate pharmacies are declaring the end of tobacco sales,³¹ including CVS, one of the largest pharmacy chains in the United States.³² Furthermore, time constraints and intense workload in pharmacy dispensing, especially in West Virginia,³³ may constrain pharmacists' ability to provide patient counseling for tobacco cessation. Tobacco is a significant source of revenue. Tobacco companies estimated that in addition to settlement payments, federal, state, and local taxes on cigarettes exceeded \$43.9 billion for fiscal year 2013.³⁴ CVS Caremark stated that their decision to stop selling tobacco products will cost the corporation \$2 billion loss in revenues annually.³⁵

Policies from the AMA and APhA to discontinue tobacco sales in pharmacy can be thought of as innovations that pharmacists may adopt to improve their ability in playing a more effective role in patient health. If pharmacies stop selling tobacco products, pharmacists may be part of the societal effort against using tobacco and consequently aid in achieving a public health goal.^{36,37} Therefore, the theoretical framework that is utilized in this research study is the theory of Diffusion of Innovations.³⁸ This theory describes the process of adopting (or rejecting) new innovations or ideas in a social system, such as in pharmacy. Time is an important concept as diffusion takes place over a series of chronological stages with those pharmacies first abandoning tobacco sales^{10,39} being innovators and early adopters, and others adopting this innovation more recently³² (early majority); the late majority and laggards will follow. At any given time, pharmacists may fall along any point in the diffusion spectrum, in adopting tobacco policies. The Diffusion of Innovations has been used to measure the adoption and diffusion of tobacco-related policies, prevention programs, and interventions.⁴⁰ For example, McCormick et al used this theory to examine the diffusion of prevention of tobacco use and addiction guidelines from the Centers for Disease Control and Prevention among state education agencies.⁴¹

Furthermore, communication *channels* (eg, mass media) play a critical role in transmitting messages to potential adopters of the innovation about relevant tobacco policies.⁴² In addition, according to the theory, the extent to which a pharmacy is likely to abandon tobacco sales is influenced by a number of factors, including the *relative advantage*³⁸ (especially the economic and social advantages) of not selling these products, the *attitudes* or compatibility of adopting the change with the merchandisers' goals and values, the *difficulty* of not selling tobacco products or easiness of adopting the innovation, *trialability* of the innovation before a final decision is made, and the *observability* of the results or the noticeability of the benefits of adopting the innovation.⁴² In the case of tobacco sales, trialability is

more complicated, as the sale of tobacco is typically an all-or-none decision. Finally, the ability to make decisions is also critical, as individuals in chain pharmacies may have less control over tobacco sales.

Objective

We examined awareness of relevant policies from the AMA and APhA regarding the sale of tobacco and sought to understand pharmacists' perceptions regarding tobacco sales in pharmacies in West Virginia.

Methods

Participants

Eligibility criteria included being a pharmacist (a) in the state of West Virginia and (b) in the West Virginia University School of Pharmacy Continuing Education database. Nearly 3000 pharmacists in the state of West Virginia were in this database, and 1000 names were randomly selected. Of these, 22 survey packets were returned to sender or otherwise indicated that the person contacted was ineligible (eg, deceased, not a pharmacist). We had a 20% response rate, resulting in 195 pharmacists.

Procedure

The project proceeded with institutional review board ethical approval. Pharmacists in West Virginia were randomly selected from West Virginia University School of Pharmacy Continuing Education database. Random selection was achieved by assigning numbers to each pharmacist in an Excel spreadsheet and drawing out a number that corresponded with each pharmacist, without replacement, until 1000 pharmacists were selected. Second, an envelope with a consent letter; a 2-page, 45-item, self-administered survey; and a return mail envelope with self-addressed, stamped envelope was prepared and mailed to selected pharmacists. The survey included key factors associated with the Diffusion of Innovation theory. No additional contacts were made with pharmacists regarding the survey, and no compensation was provided. Surveys were anonymous. Time to complete the survey was approximately 5 to 10 minutes.

Measures

Items from our survey are included in Figure 1. Face validity was established by review of the authors, which included pharmacists, a behavioral scientist, an epidemiologist, a student pharmacist, and health outcomes students, as well as sociologists. Pharmacists were asked their role as a pharmacist, and for those practicing in a pharmacy, pharmacists

were asked if their pharmacy was a regional chain, national chain, independent, hospital, or other, as well as the number of pharmacists in the practice and location type. All pharmacists were asked about relevant health history, including lung conditions, family members and friends who developed cancer, and whether they were a current, former, or never smoker.

Attitudes about tobacco sales and the *relative advantage* of stopping tobacco products were assessed, as well as knowledge of the AMA 2009 policy to discourage tobacco sales in pharmacy, the APhA 2010 policy to discourage tobacco sales in pharmacy, and the AMA 2012 policy to create a recognition program for pharmacies not selling tobacco. In addition, pharmacists were asked how influential these policies were to them as a pharmacist and the *channel* for them learning about these policies. For those in community pharmacy, the *difficulty* of stopping tobacco sales in their pharmacy was assessed, along with the *observability* of tobacco sales—both in terms of the visibility of tobacco sales in their stores and the percentage of pharmacies that sold tobacco products in West Virginia. In addition, pharmacists were asked to estimate the percentage of their patients that smoke cigarettes and that used other tobacco products. Finally, pharmacists were asked if they had *decision-making control* over tobacco sales, whether or not they sold tobacco products, if they planned to stop selling tobacco in the future, and how the pharmacist feels about his/her pharmacy's decision about tobacco sales.

Plan for Analysis

SPSS version 22.0 was used for analysis. Descriptive analyses (eg, means, standard deviations, frequencies) were used to explore the data. Independent community pharmacists, other community pharmacists, and other types of pharmacists (eg, purely academic, governmental, hospital) were compared to better understand the sample. ANOVAs were computed for continuous data, and χ^2 tests were used for binary data. Finally, a model-building approach⁴³ was used to predict the factors associated with the sale of tobacco products in his/her pharmacy (yes or no). Individual logistic regressions were computed for the variables noted above. Factors significant at $P < .05$ were entered into a final forward stepwise logistic regression model.

Results

Table 1 shows few differences between pharmacists that practiced in the community setting and other types of pharmacists (eg, purely academic, hospital, industrial). Pharmacists at independent pharmacies were more likely to be in rural areas or small towns, have decision-making control over tobacco sales, and not currently sell tobacco products. Other community pharmacists (ie, at regional and

Construct	Item
Community Pharmacist	Which best described your pharmacy (Independent, Regional Chain, National Chain, Hospital, Other)
Location of Pharmacy	What best describes the location of your pharmacy? (Urban, Suburban, Small town, Rural)
Health History	Have you been diagnosed with any of the following conditions? Lung cancer, Emphysema, Bronchitis, Chronic Obstructive Pulmonary Disease
Smoking History	Have you smoked at least 100 cigarettes in your entire life? (Yes, No) Do you now smoke cigarettes? (every day, some days, not at all)
Family Members Developed Lung Cancer	Have you ever had a family member who developed lung cancer? (Yes, No)
Closeness of Family Members	Were you close to him/her? (not at all, a little bit, moderately, quite a bit, very much)
Influence of Family Members	How influential was your family member's diagnosis in your decision-making about the sale of tobacco products? (not at all, a little bit, moderately, quite a bit, very much)
Friends Developed Lung Cancer	Have you ever had a friend who developed lung cancer? (Yes, No)
Closeness of Friend	Were you close to him/her? (not at all, a little bit, moderately, quite a bit, very much)
Influence of Friend	How influential was your friend's diagnosis in your decision-making about the sale of tobacco products? (not at all, a little bit, moderately, quite a bit, very much)
Estimated Percentage of Patients that Smoke Cigarettes	What percent of your customers/patients, in your estimation, smoke cigarettes?
Estimated Percentage of Patients that Use Other Tobacco Products	What percent of your customers/patients, in your estimation, use other tobacco products?
Estimated Percentage of Pharmacies Sell Tobacco Products	What percent of pharmacies in West Virginia, in your estimation, sell tobacco products?
Revenue Loss from Tobacco Sales	How much revenue have you lost/would you lose as a result of stopping the sale of tobacco products at your pharmacy? (not at all, a little bit, moderately, quite a bit, very much)
Currently Sell Tobacco Products	Does your pharmacy sell tobacco products? (Yes, No)
Stop Selling Tobacco in the Future	If YES, do you plan to stop selling tobacco products? (Yes, No)
Feeling about his/her pharmacy's decision about tobacco sales	How do you feel about your pharmacy's decision regarding the sale of tobacco products?
Factors from Diffusion of Innovation	
Awareness of AMA 2009 Policy	Are you aware of the American Medical Association (AMA) policy in 2009 to discourage pharmacies from selling tobacco products? (not at all, a little bit, moderately, quite a bit, very much)
Influence of AMA 2009 Policy	How influential was this AMA 2009 policy to you as a pharmacist? (not at all, a little bit, moderately, quite a bit, very much)
Channel for Learning AMA 2009 Policy	Where did you hear about this AMA 2009 policy?
Awareness of APhA 2010 Policy	Are you aware of the American Pharmacists Association (APhA) policy in 2010 to discourage pharmacies from selling tobacco products? (not at all, a little bit, moderately, quite a bit, very much)
Influence of APhA 2010 Policy	How influential was this APhA 2010 policy to you as a pharmacist? (not at all, a little bit, moderately, quite a bit, very much)
Channel for Learning APhA 2010 Policy	Where did you hear about this APhA 2010 policy?
Awareness of AMA 2012 Policy	Are you aware of the American Medical Association (AMA) policy in 2012 to create a recognition program for pharmacies who do not sell tobacco products? (not at all, a little bit, moderately, quite a bit, very much)
Influence of AMA 2012 Policy	How influential is this AMA 2012 policy to you as a pharmacist? (not at all, a little bit, moderately, quite a bit, very much)
Channel for Learning AMA 2012 Policy	Where did you hear about this AMA 2012 policy?
Attitudes (Belief) about Tobacco Sales	I believe pharmacies should not sell tobacco products. (strongly disagree, disagree, neither agree nor disagree, agree, strongly agree)
Relative Advantage of Stopping Tobacco Sales*	Stopping the sales of tobacco products is better for pharmacies. (strongly disagree, disagree, neither agree nor disagree, agree, strongly agree)
Difficulty of Stopping Tobacco Sales	How difficult would it be/was it to stop selling tobacco products at your pharmacy? (not at all, a little bit, moderately, quite a bit, very much)
Visibility of Tobacco Sales	How visible is/was the selling of tobacco products at your pharmacy? (not at all, a little bit, moderately, quite a bit, very much)
Decision-making Control Tobacco Sales	Do you have decision-making control over the sale of tobacco at your pharmacy? (Yes, No)

Figure 1. Survey items.

Table 1. Comparison of Characteristics for Community Pharmacists Versus Other Pharmacists in West Virginia.

	Independent Community Pharmacist (n = 67), Mean (SD) or %	Other Community Pharmacist (n = 60), Mean (SD) or %	Other Pharmacist (n = 68), Mean (SD) or %	Significance
Location of pharmacy				
Urban	9.7%	24.6%	36.1%	$\chi^2(6) = 14.3, P = .03$
Suburban	12.9%	15.8%	19.4%	
Small town	54.8%	45.6%	38.9%	
Rural	22.6%	14.0%	5.6%	
Health history				
Lung condition	4.6%	13.3%	4.7%	NS
Smoking history				
Never	81.5%	73.3%	81.3%	NS
Former	12.3%	23.3%	17.2%	
Current	6.2%	3.4%	1.5%	
Family members developed lung cancer				
Yes	50.0%	60.0%	62.7%	NS
Closeness of family members	3.7 (1.6)	3.9 (1.6)	3.4 (1.8)	NS
Influence of family members	2.3 (1.7)	1.7 (1.2)	2.3 (1.7)	NS
Friends developed lung cancer				
Yes	50%	40.0%	37.3%	NS
Closeness of friends	3.3 (1.3)	3.0 (1.2)	3.3 (1.4)	NS
Influence of friend	2.2 (1.5)	2.2 (1.5)	2.1 (1.6)	NS
Estimated percentage of patients that smoke cigarettes	37.1 (20.1)	39.1 (17.2)	50.2 (19.6)	$F(2, 87) = 3.6, P = .03$
Estimated percentage of patients that use other tobacco products	19.5 (15.3)	22.2 (15.5)	39.4 (26.3)	$F(2, 71) = 6.8, P = .002$
Estimated percentage of pharmacies sell tobacco products	65.8 (23.0)	73.5 (24.1)	71.2 (18.6)	NS
Revenue loss from tobacco sales	1.5 (0.8)	3.0 (1.3)	1.1 (0.3)	$F(2, 87) = 26.9, P < .001$
Currently sell tobacco products				
Yes	8.1%	70.2%	NA	$\chi^2(2) = 74.8, P < .001$
Stop selling tobacco in the future				
Yes	25.0%	12.9%	NA	NS
Attitudes about tobacco sales	4.3 (1.3)	4.3 (0.9)	4.6 (.9)	NS
Decision-making control over tobacco sales				
Yes	67.7%	6.7%	20.0%	$\chi^2(2) = 54.8, P < .001$

national chains) were more likely to sell tobacco products, not have decision-making control over tobacco sales, and perceive revenue loss from discontinuing tobacco sales. Other types of pharmacists (eg, hospital and academic) were more likely to be located in urban areas, estimate a greater number of patients who were smokers/tobacco users, and not have decision-making control over tobacco sales.

Most pharmacists (62%) in our study reported that their pharmacies did not sell tobacco, and many pharmacists reported that selling tobacco was not consistent with their role as health care providers. Factors associated with tobacco sales are explored in Table 2. Those not selling tobacco products were more likely than those selling tobacco products to be in independent pharmacies (potentially having more *autonomy*); have *attitudes* consistent with discontinuing pharmacy tobacco sales; indicate higher

relative advantage of stopping tobacco sales; indicate less *difficulty* in stopping tobacco sales; report lower *visibility* of tobacco sales; report lower estimated percentages of pharmacies selling tobacco products; and report less revenue loss from tobacco sales.

Due to the number of missing data points for estimated percentages of selling tobacco products, this variable was removed from the final forward conditional stepwise logistic regression. After considering all factors that were significant ($P < .05$) in Table 2, only revenue loss (OR = 24.7, 95% CI = [4.2, 144.7], $P < .001$) and *difficulty stopping* (OR = 4.0, 95% CI = [0.8, 19.0], $P = .08$, trend) remained in the final model. Those who reported greater revenue loss from tobacco sales were more likely to work in a pharmacy that sold tobacco products. Those who reported greater difficulty stopping tobacco sales were more likely to work in a pharmacy that sold tobacco products.

Table 2. Comparison of Characteristics for Pharmacists Selling Tobacco Products Versus Those Not Selling Tobacco Products in West Virginia.

	Yes Tobacco Products Sold (n = 45), Mean (SD) or %	No Tobacco Products Sold (n = 74), Mean (SD) or %	Significance
Community pharmacist			
Independent	11.1%	77.0%	OR = 26.8, 95% CI = (9.1, 78.7), P < .001
Other	88.9%	33.0%	
Location of pharmacy			
Urban	25.6%	11.6%	NS
Suburban	11.6%	17.4%	
Small town	48.8%	49.3%	
Rural	14.0%	21.7%	
Health history			
No lung condition	88.9%	94.4%	NS
Lung condition	11.1%	5.6%	
Smoking history			
Never	77.8%	76.4%	NS
Former	22.2%	16.7%	
Current	0.0%	6.9%	
Family members developed lung cancer			
Yes	33.3%	35.7%	NS
Closeness of family members	3.9 (1.5)	3.6 (1.7)	NS
Influence of family members	1.8 (1.4)	2.1 (1.6)	NS
Friends developed lung cancer			
Yes	46.7%	45.1%	NS
Closeness of friend	3.0 (1.2)	3.2 (1.3)	NS
Influence of friend	2.1 (1.5)	2.2 (1.6)	NS
Estimated percentage of patients that smoke cigarettes	42.1 (17.4)	35.6 (19.6)	NS
Estimated percentage of patients that use other tobacco products	23.5 (13.9)	19.4 (16.6)	NS
Estimated percentage of pharmacies sell tobacco products	81.4 (16.5)	60.5 (24.7)	OR = 1.0, 95% CI = (1.0, 1.1), P = .002
Revenue loss from tobacco sales	3.3 (1.1)	1.3 (0.6)	OR = 13.9, 95% CI = (4.4, 43.6), P < .001
Stop selling tobacco in the future			
Yes	6.7%	NA	NA
Feeling about his/her pharmacy's decision about tobacco sales			
Never sold	0.0%	8.1%	NS
Supportive of pharmacy's decision	11.1%	58.1%	
Not supportive of pharmacy's decision	46.7%	0.0%	
Neutral/positive and negative	42.2%	33.8%	
Factors from diffusion of innovation			
Awareness of AMA 2009 policy	1.7 (1.0)	2.0 (1.3)	NS
Influence of AMA 2009 policy	1.6 (1.0)	1.7 (1.2)	NS
Channel for learning AMA 2009 policy			
Survey/our contact	55.6%	48.4%	NS
Professional journal	11.1%	19.4%	
Colleague	3.7%	0.0%	
Internet/email	14.8%	12.9%	
Printed media	7.4%	16.1%	
TV news	3.7%	0.0%	
Continuing education/Board of Pharmacy	3.7%	3.2%	
Awareness of APhA 2010 policy	1.6 (1.0)	2.1 (1.4)	NS
Influence of APhA 2010 policy	1.5 (1.0)	1.9 (1.5)	NS

(continued)

Table 2. (continued)

	Yes Tobacco Products Sold (n = 45), Mean (SD) or %	No Tobacco Products Sold (n = 74), Mean (SD) or %	Significance
Channel for Learning APhA 2010 policy			
Survey/our contact	56.4%	31.5%	NS
Professional journal	13.1%	17.1%	
Internet/email	13.1%	14.3%	
Printed media	13.1%	20.0%	
Continuing education/Board of Pharmacy	4.3%	17.1%	
Awareness of AMA 2012 policy	1.3 (0.9)	1.3 (0.8)	NS
Influence of AMA 2012 policy	1.5 (1.0)	1.6 (1.3)	NS
Channel for learning AMA 2012 policy			
Survey/our contact	73.9%	76.9%	NS
Professional journal	8.7%	7.7%	
Internet/email	13.0%	3.8%	
Printed media	4.4%	3.8%	
TV news	0.0%	3.8%	
Continuing education/Board of Pharmacy	0.0%	3.8%	
Attitudes (belief) about tobacco sales	4.0 (1.2)	4.5 (1.0)	OR = 0.6, 95% CI = (0.4, 0.9), P = .004
Relative advantage of stopping tobacco sales	3.8 (1.3)	4.5 (0.9)	OR = 0.6, 95% CI = (0.4, 0.9), P = .004
Difficulty of stopping tobacco sales	3.7 (1.6)	1.1 (0.3)	OR = 4.6, 95% CI = (2.4, 8.8), P < .001
Visibility of tobacco sales	3.8 (1.1)	1.9 (1.3)	OR = 3.2, 95% CI = (2.1, 4.9)
Decision-making control tobacco sales			
Yes	11.1%	58.1%	OR = 0.1, 95% CI = (0.1, 0.4), P < .001

Abbreviations: OR, odds ratio; CI, confidence interval; AMA, American Medical Association; APhA, American Pharmacists Association.

Discussion

This study explored perceptions of tobacco sales among pharmacists in West Virginia, the state with the highest smoking rates in the United States. Attitudes about tobacco sales and awareness of tobacco policies did not differ between pharmacists working in the community, as compared to those working elsewhere, such as in academia or in industrial pharmacy. Furthermore, individuals practicing among diverse types of pharmacies, including independent community pharmacies, other community pharmacies, and in other types of pharmacies (eg, regional and national chains) had a number of differences. Pharmacists not practicing in the community setting (ie, hospital pharmacists) were more likely to estimate a greater number of their patients used tobacco, estimating that over 50% of their patients used tobacco products. Hospital pharmacists are often responsible for managing nicotine withdrawal in the hospital setting, and thus, may be very knowledgeable about the smoking/tobacco usage rate in their hospital population. Furthermore, these high rates of smoking are reflective of the high rates of smoking and tobacco use in the

Appalachian region, a region particularly in need of smoking cessation intervention.⁴⁴

Independent pharmacies are more likely to be found in rural areas throughout the state where they can best meet the needs of their community, making them an important resource for health promotion,⁴⁵ particularly for tobacco cessation. They also had greater decision-making control over whether or not their pharmacies sold tobacco products. In addition, independent community pharmacies were less likely to sell tobacco products, with 92% of pharmacists in independent pharmacy settings indicating that their pharmacy did not sell tobacco products. Although this study was conducted before the recent decision of a major pharmacy chain, CVS, to discontinue tobacco sales by October 2014,³² there is still considerable room for improvement in tobacco sales among chain pharmacies, and many pharmacists were uncomfortable with selling tobacco products. Current efforts at the state level to discontinue tobacco sales in pharmacies would widely be supported by community pharmacists in our study.

Along with type of pharmacy, we identified a number of factors associated with the sale of tobacco in a community pharmacy setting. Consistent with the Diffusion of Innovations

model, we found that beliefs/attitudes, relative advantage, difficulty, visibility, and decision-making control were all key factors in whether or not a community pharmacy sold tobacco products. Independent pharmacies had the ability to quickly adopt the innovation of stopping tobacco sales, while larger chains, with the exception of CVS, have been slower to adopt this change. Indeed, with the change in one large chain pharmacy, we may be seeing a shift along the continuum of adoption in the diffusion of innovations from the early adopters to the early majority.^{10,42} It may only be a matter of time before tobacco products are no longer sold in pharmacies across the United States. Perhaps the greatest impediment to discontinuing tobacco sales in community pharmacy, as indicated by our data, is the perceived (and real) loss of tobacco sales revenue. However, as the population of smokers continues to wane—and social norms continue to change, negative perceptions of tobacco increase, and antitobacco policies continue to increase and expand—revenue from tobacco may become less important in a community pharmacy setting.

Limitations

To begin, our response rate, although low, is consistent with the response rates of other medical professionals.⁴⁶ It is probable that we could have had a higher response rate with additional survey contacts. However, this would have increased time and cost, and most importantly potentially decreased anonymity, which can be problematic for potentially sensitive questions to health care providers about unhealthy behaviors.⁴⁷ In addition, we were not able to utilize scales with strong psychometric properties to assess underlying constructs from the Diffusion of Innovation theory, although we did establish face validity of our survey with pharmacists and academicians before mailing. We decided to utilize single items for constructs as increasingly the length would have likely further decreased our response rate.⁴⁶ Even with the short length of our survey, some items were not answered. In spite of these limitations, our study is the first to use the Diffusion of Innovations theory to understand tobacco sales in community pharmacy and the first in West Virginia, the state ranked highest in adult smoking, to assess perceptions related to sale of tobacco among pharmacists.

In conclusion, we found that community pharmacies are receptive to discontinuing tobacco sales, with many pharmacies already having made this change. As pharmacies begin to see more adoption for the innovation of discontinuing such sales, other pharmacies will likely follow suit. Clearly, many pharmacists believe that selling tobacco products should not be their role, yet some perceive barriers to discontinuing tobacco sales, such as not having personal control over the decision and believing that tobacco sales are an important revenue stream for community pharmacy. If the Diffusion of Innovations theory holds true, it may only be a matter of time before all pharmacies will discontinue the sale of tobacco products in the

United States, and this movement may continue to other countries where pharmacies sell tobacco products.

Authors' Note

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