

RURAL LICENSED TOBACCO MERCHANTS' SMOKING STATUS AND THE SALE OF TOBACCO TO YOUTH

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ABSTRACT

The purpose of this study was to compare the sale of tobacco to youth between smoking and nonsmoking merchants in a rural county. Licensed tobacco merchants were mailed surveys regarding their personal smoking status, and the returned surveys (75.9 %, N=44) were matched with tobacco compliance results which indicated if the business sold tobacco to youth during a county compliance check. Merchants who smoked tended to sell tobacco products to youth more often than those who did not smoke chi-square (2, n=41) 6.66, p=0.036. This finding suggests the need to focus on smoking status of merchants as a prevention strategy for youth tobacco use.

INTRODUCTION

The second most preventable cause of death in the world is tobacco use (World Health Organization, 2006b) whereas it is the most preventable cause of disease and death in the United States (Centers for Disease Control and Prevention, 1999). The result of long-term tobacco use leaves the nation with an economic liability that is between 50 and 73 billion dollars per year in medical expenses alone (Centers for Disease Control and Prevention, 2000). To decrease the chronic effects associated with tobacco use, public health professionals need to implement prevention efforts that are age appropriate and occur throughout the lifespan. Due to the long-term effects and economic costs of tobacco use, a special focus needs to be placed on tobacco control for youth. It is imperative that public health officials learn how youth obtain tobacco and characteristics of those who supply them with these products. This paper describes the results of a study which compared rural merchants' smoking status to their sales of tobacco to youth.

Worldwide most smokers initiate tobacco use prior to their 18th birthday, further data indicates tobacco use by 13–15 years of age is more than 10% (World Health Organization, 2006a). It is estimated that more than 3,000 youth become regular smokers every day in the U.S. (Centers for Disease Control and Prevention, 1997). To address the issue of youth tobacco use, the United States Congress enacted the Alcohol, Drug Abuse and Mental Health Administration Reorganization Act (Public Law 102-321) in 1992 (United States, 1992). This public law defines youth as individuals under 18 years old and reinforces that all tobacco products are not to be sold to any individual ages 0-18 years. The intention of the Synar amendment of this act (section 1926) was to control youth access to tobacco (United States Department of Health and Human Services, 1998).

The federal government, through the U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration [SAMHSA] (Substance Abuse and Mental Health Services Administration, 2001) collects national statistics on youth commercial access to tobacco. As a result, this federal agency connects the amount of state SAMHSA funding to the rate of tobacco sales to youth made at local businesses. This action sent a strong message to the states that they were to stop local tobacco merchants from selling to youth or lose federal funding.

In Minnesota, officials have strived to decrease the noncompliance rates of youth tobacco sales to ensure the SAMHSA funding would not be jeopardized. In 2000, the state rate of noncompliance by tobacco merchants was 27.7% (Substance Abuse and Mental Health Services Administration, 2001). In addition to monitoring the state rate, the Minnesota government has required each county to adopt a tobacco ordinance, which mandates annual tobacco compliance checks to be completed on all licensed tobacco merchant establishments. In 2001 in one rural, north-central Minnesota county, for the population of interest it was found that 45.5% (n=20) of the merchants sold tobacco to youth when their businesses were tested by the Public Health Division Compliance Program (DeBoer, 2000).

The levels of compliance with state and local laws have been studied as part of community education programs. Biglan, Ary, Koehn, Levings, Smith, Wright et al. (1996) as a part of Project SixTeen in Oregon, evaluated how community intervention impacted sales of tobacco to youth. This community intervention included community support, merchant education, consequences to clerks for either selling or not selling tobacco to youth, publicity and feedback regarding not selling to youth. Increased community awareness and regulation of tobacco sales to youth lead to a decrease in sales of tobacco to youth. The Memphis Health Project, a four-year prospective evaluation where 6,967 seventh grade students were surveyed, found that the “best predictor of experimentation with cigarettes was the perception that they were easily available” (Robinson, Klesges, Zbikowski, & Glaser, 1997, p. 653). Regulation of tobacco sales, community support and perception of availability influence commercial availability of tobacco to youth (Biglan et al. 1996; Robinson, Klesges, Zbikowski, & Glaser, 1997).

Youth access to tobacco is influenced by a variety of factors such as the day of the week the tobacco compliance checks were conducted, type of store, and rural location (Clark, Natanblut, Schmitt, Wolters, & Iachan, 2000). Clark et al. (2000) connected rural locations with an increase in illegal tobacco sales to minors. In addition, communities with a higher percentage of people living in a lower socioeconomic situation tend to have a higher tobacco industry presence than communities with higher socioeconomic standards (Barbeau, Wolin, Naumova, & Balbach, 2005).

While it is evident that youth can access tobacco through commercial sources (Klonoff, Landrine, & Alcaraz, 1997) in rural communities (Clark et al. 2000) it is unclear if there are characteristics of the tobacco merchant that influence compliance rates. Specifically, the smoking status of the merchant and their propensity to sell tobacco to youth has not been studied. The purpose of this study was to compare the rates of compliance in youth tobacco sales between smoking and non-smoking merchants.

METHODS

Sample

The rural Minnesota county where this study occurred has a total population of 27,150 in which 87% of the population are white and 11% American Indian (Minnesota Department of Administration, n.d.). None of the most populated areas of this rural county have a population of 2,500 or less. The socioeconomic conditions of the county indicate that 13.6% of the county residents lived in poverty compared to the state poverty level of 7.9% (Minnesota Department of Administration, n.d.).

The sample for this comparative study consisted of merchants who were licensed to sell tobacco in the year 2001. Fifty-eight retailers were licensed and all were mailed surveys; 44 of these merchants returned completed surveys for a response rate of 75.9%. All of the surveys were completed by either owners or managers of the businesses.

Instrument

The researcher and staff at the University of Minnesota School of Public Health, Department of Epidemiology collaborated in the development of the Tobacco Merchant Survey. This survey consisted of twenty-seven Likert scale, multiple option, and open-ended questions. The content areas of the survey included: 1) the knowledge level of tobacco merchants in regard to state and local tobacco laws, policies and practices, 2) demographic information that included their smoking status, and 3) Business practices and polices. Results of the merchant business polices and knowledge levels are reported elsewhere (Gangeness, Evanson, & Webb, in review).

First, the Tobacco Merchant Survey was tested for content validity with two panels of experts. The first expert panel to review the survey was the county Health Advisory Committee which consisting of 10 members. The second panel consisted of 5 local coordinators for the Minnesota Tobacco Prevention Grant. After the survey review was complete by the two expert panels, no changes were recommended and it was piloted with five licensed tobacco merchants. It was determined that no changes were needed after the pilot testing was completed.

Data Collection

Tobacco Merchant Survey. Data collection of the Tobacco Merchant Survey took place between the months of November 2001 and March 2002. Institution Review Board approval was obtained prior to the study from the university board, and the county advisory board. The tobacco merchants were mailed a cover letter describing the study, the survey, and a self-addressed stamped envelope. Consent was assumed with return of the survey. All merchants received a postcard seven days after the initial mailing, reminding them to fill out and return the Tobacco Merchant Survey. Each returned survey was matched with tobacco compliance data, which indicated if that particular business sold tobacco to youth during a county compliance check during 2001.

Compliance Check Data. To control youth access to tobacco, compliance checks are conducted on an annual basis. The compliance check data for the 2001 fiscal year was

obtained from the county Health Advisory Board. The compliance check data included the names and addresses of licensed tobacco merchants, and whether the businesses sold tobacco to youth at their 2001 annual tobacco compliance check. This agency performed a minimum of one tobacco compliance check per year on each area business. For those businesses that sold tobacco to youth during their previous tobacco compliance check, additional checks were completed.

The county public health agency recruited, trained and supervised the youth during every compliance check. Those hired to complete these compliance checks were between the ages of 15-17. They entered businesses that were licensed to sell tobacco and attempted to purchase these products. The youth who participated in this program had the consent of their parents and extensive training on the policy and procedure for tobacco compliance checks (Cass County Public Health and Human Services, 2000).

Data Analysis

Data from the Tobacco Merchant Survey and compliance checks were analyzed using the Statistical Package for Social Sciences (SPSS). The returned surveys (75.9 %, N=44) were matched with tobacco compliance results which indicated if the business sold tobacco to youth during a county compliance check. The chi-square test was utilized to indicate if significant ($p = .05$) differences in compliance with the sale of tobacco products to youth occurred between smoking and non-smoking merchants. Chi-square analysis was used to determine significance between compliance and merchant gender and type of establishment. Two-sample t-test was used to compare compliance and age of merchant.

RESULTS

Table 1 presents the tobacco use and compliance check percentages for the surveyed population. Of the merchants who responded to the survey, 56.8% (n=25) did not personally use tobacco products while 29.5% (n=13) used them on a daily basis. Compliance check data indicated that of those merchants who responded, 52.3% (n=23) were compliant with the tobacco laws and had not sold tobacco to youth in their most recent tobacco compliance check while 45.5% (n=20) had sold tobacco to youth during their 2001 compliance check. One merchant was newly licensed, completing the survey but did not have a compliance check 2.2% (n=1).

Comparing smoking to nonsmoking merchants, of those who used tobacco everyday, 66.7% (n=8) sold to youth, whereas 33.3% (n=4) had not sold it to youth. The merchants who did not use tobacco at all, did not sell to youth 72.0% (n=18) of the time, and of these non-smokers only 28.0% (n=7) sold tobacco to youth. The chi-square was utilized to compare the merchants' personal tobacco use in relation to the sales of these products to area youth. The chi-square test was statistically significant chi-square (2, N=41) 6.66, $p=0.036$ which indicates that merchants who smoked were statistically more likely to be non-compliant with youth tobacco checks than merchants who did not smoke.

Table 1
Number and Percentage of 44 Merchants' Tobacco Use and Compliance

Characteristics	<u>n</u>	%
Tobacco Use		
Every day	13	29.5
Some days	4	9.1
Not at all	25	56.8
Missing	2	4.5
Recent Compliance to Tobacco Laws		
Yes (youth could buy tobacco)	20	45.5
No (youth could not buy tobacco)	23	52.3
Missing	1	2.3

The age of the individual who completed the survey ranged between 25 and 79 years ($n=41$, $M=47.76$, $SD=10.23$). A two-sample t-test indicated that there were no significant differences in mean ages of the tobacco merchants who were selling tobacco to youth and those who did not sell tobacco to youth, $t(42) = -1.14$, $p = 0.265$ (two-tailed), $df = 27$.

There were an equal number of male ($n=21$, 47.7%) and female ($n=21$, 47.7%) tobacco merchants; two merchants did not respond to this question. The difference in compliance rates between male and female merchants was not significant chi-square (1, $N=42$) 0.241, $p=0.623$.

The number of years in which the merchants either owned or managed their business ranged between 1 and 47 years ($n=40$, $M=11.43$, $SD=11.55$). From the total number of licensed tobacco merchants who returned the surveys, the types of businesses represented included: 15 (34.1%) from convenience stores, 12 (27.3%) from bars/pubs where food was served and minors allowed entrance, 5 (11.4%) from grocery stores, 3 (6.8%) from resorts, and 7 (15.9%) grouped themselves into the "other" category. These businesses ranged in number of employees between 0 (the owner/manager was the only employee) and 103 with a mean of 13.36 employees ($SD=20.09$). The larger business with 103 employees was by far the rare case in this study; most of the businesses in this rural county were small, "mom and pop" style businesses with few employees. Type of establishment was not significant when compared to compliance chi-square (4, $N=42$) 5.752, $p=0.218$.

DISCUSSION

This is the first study of its kind that compared the noncompliance rates between smoking and non-smoking merchants. One strength of this study is the high response rate by tobacco merchants (75.9%). The most significant result of this research study was the difference noted between the merchants' self-reported tobacco use and their business' youth tobacco sales compliance rate. Merchants who smoked were more likely to sell tobacco to youth. Robinson et al. (1997) found that the best indicator of cigarette

experimentation among youth was a perception that it was easy to obtain them in their community. Youth may perceive a merchant who smokes as someone who supports their use of tobacco, which would support the Robinson et al. (1997) study.

Age and gender of the tobacco merchant did not impact the sales of tobacco to youth. The types of businesses merchants either owned or rented included convenience stores, grocery stores, bars/pubs, and resorts. Neither the type of business nor the number of employees impacted the sales of tobacco to youth.

Rural Community Interventions

Public Health Nurses practicing in rural communities are champions of prevention education in the community. This study indicates that tobacco merchants', who use tobacco themselves, should be a target group for smoking cessation. Decreasing smoking rates of tobacco merchants may decrease the sale of tobacco products to youth, thus decreasing the long-term health effects of smoking. In the rural communities, public health nurses are often consulted on issues related to tobacco merchant compliance, tobacco control, and sales of tobacco to youth. The findings of this study can guide community assessments in relation to the problem of youth access to tobacco, as merchant tobacco use should be considered as a possible indicator to tobacco sales to youth. Once the community assessment has been completed, a specific plan can be developed that targets community education needs, especially for those merchants who smoke, thereby fostering the greatest impact on youth access to tobacco.

Smoking status of merchants and youth access to commercial sources of tobacco could be used in community education programs by encouraging community stop-smoking campaigns, and increased awareness for businesses about smokers possibly being more tolerant of teen tobacco use. The information about merchant smoking status and compliance could supplement current commercial tobacco information for parents and businesses, providing strength to the comprehensive community education projects that have demonstrated some success (Biglan et al. 1996).

Study Limitations

This study is limited due to the small sample size. The strength of a direct association between smoking and youth tobacco sales is unknown; this direct association was not a part of this study. The survey instrument was developed for the study and reliability was not established beyond content validity. In addition, the merchants who responded to the survey may not have been involved with direct sales, making it difficult to know if the difference between merchants was because those who smoked were more likely to sell to youth or they were more likely to not enforce the law with their employees, or both; or if the difference was attributable to another reason entirely.

RECOMMENDATIONS FOR RESEARCH

Currently, there is limited knowledge about licensed tobacco merchants' smoking status and the impact it has on the sale of tobacco products to youth tobacco control. This study should be replicated with larger sample sizes, expanding to urban and international

populations. Further studies should be designed to establish association and possible contributing factors between smoking status and sales of tobacco to youth.

Since the majority of research studies focus on youth behaviors or just the compliance levels themselves, there is a need to expand the body of research to include the characteristics and behaviors of tobacco merchants. Research needs to be completed on tobacco merchants and those employed at businesses with regards to their smoking attitudes, beliefs, and sales practices. Further research needs to be conducted on merchant smoking status and youths' perceptions on tobacco availability. Additionally, studying smoking cessation campaigns directly targeted at merchants who smoke, to determine if this improves overall compliance to youth tobacco laws (and not selling tobacco to youth) would be relevant to this line of research.

CONCLUSIONS

This study indicated a significant difference between the smoking status of tobacco merchants and their sales of tobacco products to youth. Tobacco merchants who smoked were more likely to sell tobacco to youth than those merchants who did not smoke. Further studies need to be conducted, in an effort to explore the relationship between tobacco merchant smoking status and the merchant's tendency to sell tobacco to youth.

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