
Council for Tobacco Control

Effectiveness of a Policy to Reduce Tobacco Sales to Minors

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Results of the Vista Community Clinic Intervention to Reduce
Youth Access to Tobacco in Oceanside, CA

Introduction

Cigarette smoking remains the leading cause of preventable, premature death in this country (U.S. Department of Health and Human Services [DHHS], 1999). While smoking prevalence in the U.S. has declined among adults, there has been a 32% increase among youth from 1991 to 1997 (DHHS, 1998; Johnston, O'Malley, & Bachman, 1996).

The majority of cigarettes consumed by youth come from illegal sales to minors. Although illegal in all 50 states, evidence shows that children can easily buy tobacco from stores and vending machines because tobacco retailers do not comply with the law and the law is not enforced (DiFranza & Rigotti, 1998). According to the California Youth Tobacco Purchase Survey, the number of California retailers who illegally sold tobacco to children increased for the first time in five years from the 1998 sales rate of 13.1% to 16.9% in 1999.

Increased tobacco sales to minors are associated with self-service displays. A self-service tobacco display is any open display or rack of tobacco products to which the customer has access without the assistance of a sales clerk. Self-service displays not only increase the number of illegal sales to minors, but also make shoplifting easier and promote the message that tobacco is not dangerous (ALA, 1999). The California Youth Tobacco Purchase Survey found a 17.9% sales rate for clerk-assisted purchases compared to a 36.2% purchase rate from self-service tobacco displays (CDHS, 1997). Vending machines, a type of self-service display, are a common source of cigarettes for younger children (Lynch & Bonnie, 1994). Surveys conducted throughout the United States have shown that youth can purchase cigarettes from vending machines anywhere from 75% - 100% of the time (Cheadle & Psaty, 1992).

Tobacco placed in self-service displays is readily available to shoplifters, many of whom are teens. Self-service displays may also make the purchase of tobacco easier for minors because youth have less interaction with store clerks. Regulatory efforts to eliminate self-service displays have been strongly opposed by retailers, who receive promotional allowances from tobacco manufacturers for using self-service tobacco displays (DiFranza & Rigotti, 1998). The Iowa State Attorney General's office investigated placement fees paid to three retail chains and documents show one retailer received more than \$500,000 per year in such payments, and another more than \$850,000.

To combat the purchase of tobacco products by children, many cities have enacted ordinances banning self-service tobacco displays. In 15 California cities, a decrease in illegal sales to youth was seen a year after enactment of an ordinance eliminating self-service tobacco displays. Among these 15 cities is the city of Poway, located in San Diego County, which experienced a

decrease in the rate of sales to minors from 30% pre-ordinance to 7% post-ordinance (Project TRUST). Results of the San Diego County Youth Tobacco Survey in October 1996 determined the County rate of illegal sales to minors to be 21%.

Based on this information an intervention was designed to persuade the City Council of Oceanside to pass an ordinance banning self-service tobacco displays. The purpose of the present study was to decrease the rate of illegal tobacco sales to minors by 5% - 10% in the city of Oceanside by enacting a policy to eliminate self-service displays.

Methods

Setting

Oceanside, a coastal city of 140,500 residents in north San Diego County, markets itself as the ideal mid-point city for companies that do business in San Diego and Los Angeles counties. The median age is 30 and the ethnic distribution is 64% White, 23% Hispanic, 7% African-American and 6% Asian/Pacific Islander or Other. Bordering a military base, Oceanside is home to many active duty and retired military personnel. Much like the other 17 cities in the county, Oceanside is viewed as politically conservative in nature.

Study Design

A pre-/posttest design was used to evaluate the impact of the policy enactment.

Sample Selection

Stores that sell tobacco in the city of Oceanside were identified from the list generated by the California Department of Health Services Tobacco Control Section. The original list contained 123 stores. After eliminating stores not in Oceanside ($n = 3$), duplicate entries ($n = 12$), those that do not currently sell tobacco products ($n = 8$), and stores that could not be located ($n = 16$), 84 businesses remained. Thirteen additional businesses recently opened or under new ownership were discovered and added to list. From these 97 businesses, a computer randomly selected the study sample of 77 stores.

Measures

The survey and purchase protocol outlined in the TCS/Project TRUST Tobacco Sales to Minors Survey Training Manual were used for this study. (See Appendix A for survey instrument.) Key study variables included: type of outlet, self-service environment, clerk characteristics, location of tobacco in outlet, and posting of STAKE Act sign and/or others that state sales to minors are unlawful.

Data Collection

During May and June of 1997, project staff trained 7 adults and 12 youth to participate in the pre-intervention purchase survey. An "attempted buy" survey protocol was used. Youth entered the store and either placed a tobacco product on the counter or requested one from the clerk. If the clerk rung up the "sale", the youth was instructed to indicate that he/she did not have enough money and leave the store. An adult witnessed each purchase attempt. In July of 1999, 12 new adult and youth volunteers were recruited and trained to conduct the post-intervention purchase surveys.

Description of the Intervention

In March of 1997 project staff formed a Task Force consisting of youth and adult volunteers from health clinics, social service agencies, community groups, schools, city officials, law enforcement, concerned citizens, youth groups, and religious organizations. Task Force members completed a three-hour training conducted by project staff on tobacco industry marketing practices, conditions in the community that promote youth access, letter writing to newspapers and legislators, and media interview and public testimony skills to support local tobacco control policies. Twenty-one letters were written in support of an Oceanside policy to deter youth access to tobacco.

Task Force members participated in numerous media interviews to discuss tobacco industry marketing practices, project goals and objectives, point-of-sale advertising tobacco industry slotting fees, and self-service tobacco displays. Task Force members were also interviewed by the Oceanside community access cable channel (KOCT) in addition to several newspapers including the North County Times, San Diego Union-Tribune, Vista Views, and El Latino. In one news article coordinated by the project, an Oceanside merchant was quoted as saying that the tobacco industry offered him cash to offset shoplifting if he would use self-service tobacco displays in his store.

Educational materials were developed and distributed throughout the city of Oceanside to raise awareness about youth access to tobacco and advertising issues. Training and educational materials developed or adapted to support tobacco control policies included the following: *Project Informational Kit, Action Alert: Campaign to Control Tobacco Sales in Oceanside Neighborhoods, Questions and Answers About Self-Service Tobacco Displays, and the Vista Community Clinic Youth Advocacy Manual.*

From February of 1997 to May of 1998, project staff educated 165 key community leaders and concerned residents in the city of Oceanside on community conditions that promote youth access to tobacco. Topics covered included trends in youth tobacco use, sales to minors, self-service displays, the proliferation of tobacco advertisements targeting children and minorities, and solutions to reduce youth access. All key leaders and residents received a project informational kit containing the main points of the presentation, an Action Alert booklet, and the Questions and Answers about Self-Service Tobacco Displays brochure. Also distributed was a copy of the

American Lung Association report card that grades cities in San Diego County on protecting children from access to tobacco. Before May of 1998, the city of Oceanside had received a "D" on this report card.

In April of 1998, project staff coordinated an educational workshop for the Oceanside City Council regarding point-of-sale tobacco advertising, self-service tobacco displays in Oceanside, the American Lung Association report card, and policy solutions to protect children from access to tobacco. The educational workshop consisted of presentations conducted by project staff, the American Lung Association, Oceanside Healthy Cities Project, and the Task Force. Youth members of the Task Force shared their experiences accessing cigarettes from vending machines and self-service tobacco displays. After the session, the City Council requested a copy of a model ordinance designed to restrict youth access to tobacco.

In May of 1998, the city of Oceanside voted unanimously to adopt an ordinance to eliminate self-service tobacco displays, cigarette vending machines, and the sale of single cigarettes. Furthermore, the ordinance also required posted signage stating that sales to minors are unlawful. (See Appendix B for ordinance.)

Data Analysis

SPSS statistical software version 8.0 was used for all computations (Statistical Package for the Social Sciences, 1998). The extent of change from pre-intervention to post-intervention for dichotomous variables was measured using the McNemar test. An alpha level of .05 was used for all statistical tests. A statistically significant difference between categories was defined as P less than or equal to .05.

Results

Seventy-seven pre-intervention surveys were completed in May and June of 1997. Pre-intervention surveys represented 79.4 % of the known population of stores that sold tobacco products in Oceanside. Post-intervention surveys were completed in July and August of 1999 after two years of community education and more than a year after the ordinance to ban self-service tobacco displays which passed in May of 1998. Post-intervention surveys were completed for 67 of the original 77 stores included in the pre-intervention survey for a retention rate of 87%. Of the 10 stores lost at post assessment, nine could not be located and one no longer sold tobacco. The ten lost businesses consisted of two gas stations, three convenience stores, two markets, and three drug stores. Data analysis was restricted to those businesses surveyed both before and after the ordinance was enacted. Consequently, the 67 stores that completed both the pre- and post-intervention survey constitute the primary analysis group on which the findings of this study are based.

Surveyed businesses were divided into eight categories that included convenience markets, discount stores, drug stores, gas stations, liquor stores, markets, supermarkets, and tobacco shops

(Table 1). Of the businesses surveyed, 40.3% ($n = 27$) were independently owned and 59.7% ($n = 40$) were part of a chain operation.

Table 1

Distribution of Oceanside Businesses Surveyed

	<i>N</i>	Percent
Convenience	14	20.9%
Discount	02	03.0%
Drug Store	03	04.5%
Gas Station	11	16.4%
Liquor	07	10.4%
Market	19	28.4%
Supermarket	08	11.9%
Tobacco	03	04.5%
Total	67	100.0%

Oceanside City Council enacted ordinance number 098-18 in May of 1998 in an effort to restrict youth access to tobacco. The ordinance 1) prohibits self-service tobacco displays; 2) requires a posted warning sign at the point of purchase stating the legal age of sale and requiring identification; 3) prohibits vending machine sales of tobacco; and 4) requires all tobacco products be sold in their original packaging. The principal outcome of this study was the rate of illegal tobacco sales to minors. The survey instrument used to assess the impact of the ordinance documented the “sale” outcome of attempted purchases and tracked characteristics of the store environment that were believed to contribute to illegal tobacco sales to minors. These store characteristics, also crucial to the ordinance, included types of tobacco product sold, location of tobacco in the store, and posting of signs stating that the sale of tobacco to underage teens is unlawful.

Prior to enactment of the ordinance banning self-service tobacco displays 9 of the 67 stores surveyed in the city of Oceanside “sold” to underage youth compared to only two stores surveyed post-ordinance (Table 2). The rate of illegal tobacco sales to minors decreased from 13.4% pre-ordinance to 3.0% post-ordinance for a reduction of 10.4%. Although the reduction in the rate of tobacco sales to minors was sizable, the extent of change was not statistically significant, $P = .065$.

Interestingly, the two businesses that sold to underage youth post-ordinance were not included in the nine stores with completed sales pre-ordinance. No one type of store appeared more likely to

sell to minors than the others. The nine businesses with a completed sale pre-ordinance included three convenience stores, three markets, one gas station, supermarket, and drug store. The two businesses that sold tobacco to minors post-ordinance were a discount store and a tobacco shop. Furthermore, characteristics of the minor didn't appear to influence purchase status. Of the eleven illegal tobacco purchases from both surveys pre- and post-ordinance, four were "completed" by a fifteen-year-old and seven by a sixteen-year-old. Tobacco was sold to seven females and four males. Illegal sales were completed by teens whose ethnic breakout included three Whites, six Hispanics, and two Native Americans.

Table 2

Sales to Minors Pre-Ordinance versus Post-Ordinance

	Assessment Interval		McNemar Test
	Pre-ordinance <i>N</i> , (%)	Post-ordinance <i>N</i> , (%)	
Sale "Completed"			(<i>N</i> = 67), <i>P</i> = .065 ^a
Yes	09, (13.4%)	02, (03.0%)	
No	58, (86.6%)	65, (97.0%)	

a. Binomial distribution used.

The city of Oceanside's ordinance to ban self-service tobacco displays, includes specific declarations pertaining to the type and location of tobacco product in the store. Prior to passage of the ordinance, tobacco products were available in open shelves and racks for at least 59.7% (*n* = 40) of the businesses surveyed compared to a minimum of 9.0% (*n* = 6) post-ordinance (Table 3). The dramatic reduction in self-service tobacco displays was highly significant, *P* < .0005. However, given the relatively small sample size this number should be interpreted with caution. As the amount of tobacco in open shelves and racks significantly decreased, the amount of tobacco in locked cases or enclosed areas significantly increased, *P* = .003 (Table 3). Pre-ordinance surveys identified tobacco in locked cases or enclosed areas for at least 23.9% of Oceanside businesses in contrast to 52.2% post-ordinance. However, the amount of tobacco located behind the counter remained relatively unchanged from 74.6% (*n* = 50) pre-ordinance to 82.1% (*n* = 55) post ordinance, *P* = .344. Vending machines were not found in any of the 67 businesses surveyed pre- or post-ordinance.

No difference was detected pre- to post-ordinance in the number of posted signs stating that tobacco sales to minors are unlawful (Table 5). The number of STAKE Act, Penal Code 308, and We CARD signs remained virtually unchanged. Of particular interest was the lack of posted STAKE Act signs. The STAKE Act law, created to protect the health of children by stopping the

unlawful sale of tobacco products to youth, requires all California retailers that sell tobacco to clearly post a warning sign at each sales counter. Although the law went into effect in 1994, three years later only 37.3% ($n = 25$) of Oceanside businesses were documented at the pre-intervention (pre-ordinance) survey as having at least one visibly posted STAKE Act sign. The post-intervention survey identified less than half of the businesses, 44.8% ($n = 30$), to have a STAKE Act sign posted. Twenty percent (20%) of businesses surveyed both pre- and post ordinance failed to have even one sign, of any kind, that stated the sale of tobacco to minors is unlawful.

Table 3

Location of Tobacco Products Pre-Ordinance versus Post-Ordinance

	Assessment Interval		McNemar Test
	Pre-ordinance <i>N</i>	Post-ordinance <i>N</i>	
Behind the counter			($N = 60$), $P = .344^a$
Yes	50	55	
No	12	10	
Missing	05	02	
In open shelves and racks			($N = 53$), $P < .0005^b$
Yes	40	06	
No	16	56	
Missing	11	05	
In locked cases or enclosed areas			($N = 52$), $P = .003^b$
Yes	16	35	
No	40	28	
Missing	11	04	

a. Binomial distribution used.

b. Asymptotic significance.

Table 4

Type of Tobacco Products Sold Pre-Ordinance versus Post-Ordinance

	Assessment Interval		McNemar Test
	Pre-ordinance <i>N</i>	Post-ordinance <i>N</i>	
Kiddie packs			(<i>N</i> = 64), <i>P</i> = .003 ^a
Yes	13	01	
No	52	65	
Missing	02	01	
Single unpackaged cigarettes			(<i>N</i> = 64), <i>P</i> < .0005 ^a
Yes	17	03	
No	47	64	
Missing	03	00	

a. Binomial distribution used.

Table 5

Anti-Tobacco Signs Posted Pre-Ordinance versus Post-Ordinance

	Assessment Interval		McNemar Test
	Pre-ordinance <i>N</i>	Post-ordinance <i>N</i>	
STAKE Act (1-800-5ASK-4-ID)			(<i>N</i> = 54), <i>P</i> = .815 ^a
Yes	25	30	
No	32	34	
Missing	10	03	
Penal Code 308			(<i>N</i> = 49), <i>P</i> = 1.000 ^a
Yes	07	11	
No	45	52	
Missing	15	04	
We CARD			(<i>N</i> = 51), <i>P</i> = .248 ^b
Yes	22	20	
No	31	44	
Missing	14	03	

a. Binomial distribution used.

b. Asymptotic significance.

Discussion

Youth access to tobacco is a complex and intriguing problem. This intervention was designed to persuade the City Council of Oceanside to pass an ordinance banning self-service tobacco displays in an effort to decrease the rate of illegal tobacco sales to minors by 5% - 10%. Based on survey data collected pre- and post-ordinance, the rate of illegal tobacco sales to underage youth successfully dropped 10.4%, from 13.4% to 3.0%. While the primary objective was to impede youth access to tobacco products in Oceanside businesses, the collection of survey data before and after enactment of the ordinance provided the opportunity to examine compliance with numerous store characteristics believed to influence youth access.

The ordinance consists of four key declarations that 1) prohibit self-service tobacco displays; 2) require a posted warning sign at the point of purchase stating the legal age of sale and requiring identification; 3) prohibit vending machine sales of tobacco; and 4) require all tobacco products be sold in their original packaging. One year after the ordinance was enacted dramatic changes were noted in self-service tobacco displays. Significantly fewer Oceanside businesses surveyed had tobacco displayed in open shelves and racks and significantly more placed tobacco in locked cases or enclosed areas. The ordinance also appeared to significantly reduce the number of businesses selling unpackaged singles and kiddie packs of cigarettes. Whereas, no improvement was noted in the number of businesses complying with the requirement to post a warning sign stating sales to minors are unlawful.

Interestingly, the stores surveyed that sold tobacco to minors were no more or less likely to sell kiddie packs or unpackaged singles; have tobacco in open shelves or locked cases; or post warning signs than those stores that didn't sell to minors. At post-ordinance significantly fewer Oceanside businesses sold tobacco outside the original packaging or in self-service tobacco displays. The decrease in the rate of tobacco sales to minors, although not significant, does suggest that youth access to tobacco is restricted as the amount of contact with store clerks is increased and as purchases are limited to products sold in their original packaging.

Conclusions and Recommendations

Based on the results of this study, the city ordinance banning self-service tobacco displays was an effective approach to reduce the amount of tobacco in open shelves and increase the amount of tobacco products placed in locked or enclosed areas. The ordinance also successfully decreased the number of businesses that sold tobacco outside the original packaging. Oceanside merchants appeared to comply with those elements of the ordinance pertaining to packaging and placement. As the rate of illegal sales to minors in the city of Oceanside decreased from 13.4% to 3.0%, the ordinance appears to have restricted youth access to tobacco. The sample size, though small, did demonstrate the impact of the project's intervention. In addition to a decreased rate of illegal tobacco sales to minors, the intervention engaged community members, educated the Oceanside City Council, and provided the impetus for passage of the ordinance to ban self-service displays.