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Cigarettes Smoked among Daily and Nondaily Smokers following CVS Health's Tobacco-free Pharmacy Policy

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Abstract

Introduction.—In September 2014, CVS Health ceased tobacco sales in all of its 7,700 pharmacies nationwide. We investigate the impact of the CVS policy on the number of cigarettes smoked per day among metropolitan daily and nondaily smokers, who may respond to the availability of smoking cues in different manners.

Methods.—Data are from the U.S. Census Bureau Tobacco Use Supplement to the Current Population Survey 2014–2015 and the Blue Cross and Blue Shield Institute Community Health Management Hub. Adjusted difference-in-difference (DID) regressions assess changes in the number of cigarettes smoked per day among daily smokers (n=10,759) and nondaily smokers (n=3,055), modeling Core-based Statistical Area (CBSA) level CVS pharmacy market share continuously. To assess whether the policy had non-linear effects across the distribution of CVS market share, we also examine market share using tertiles.

Results.—CVS' tobacco-free pharmacy policy was associated with a significant reduction in the number of cigarettes smoked by nondaily smokers in the continuous DID (rate ratio=0.985, p=0.022), with a larger reduction observed among nondaily smokers in CBSAs in the highest third of CVS market share compared to those living in CBSAs with no CVS presence (rate ratio=0.706, p=0.027). The policy, however, was not significantly associated with differential changes in the number of cigarettes by daily smokers.

Conclusion.—The removal of tobacco products from CVS pharmacies was associated with a reduction in the number of cigarettes smoked per day among nondaily smokers in metropolitan CBSAs, particularly those in which CVS had a large pharmacy market share.

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INTRODUCTION

Pharmacies are one of many venues in which tobacco is available for purchase in the U.S. and represent a promising setting for tobacco control interventions. Pharmacy sales of cigarettes make up a small percentage of total U.S. cigarette sales (estimated 4.54 percent in 2009), but this percentage has been increasing over time, even while national cigarette sales have been declining.[1] In addition, recent work has suggested that, on average, tobacco products are cheaper in pharmacies than in other tobacco retailers, potentially attracting more sales.[2]

In February 2014, CVS Health announced that it would discontinue sales of tobacco products in its pharmacies.[3] The policy went into effect in September 2014 in all CVS pharmacy locations, numbering over 7,700 nationwide.[4] Prior to this policy change, many CVS locations sold tobacco products, displaying them prominently behind the checkout counter like many other pharmacies, convenience stores, and gas stations in displays or "power walls." While several municipalities in Massachusetts and California had previously banned tobacco sales in pharmacies, this policy marked the first such change to be undertaken by a corporate pharmacy chain.

This removal of tobacco products from CVS pharmacies is likely to have impacted cigarette smoking. First, it may have reduced impulse purchases of cigarettes by smokers visiting CVS pharmacies to purchase other items. Impulse purchases of cigarettes are relatively common; surveys of various populations have found that between 11 and 30 percent of cigarette purchases are unplanned,[5–7] and these self-reports are likely to be underestimates.[8] The power walls at pharmacies present smokers, who may be visiting to purchase other items, with strong visual cues to purchase cigarettes at checkout. One survey, for instance, found that 25.2 percent of smokers reported sometimes purchasing cigarettes on impulse as a result of seeing cigarettes on display.[9] U.S. industry research has reported that, on average, individuals make 35 visits to pharmacies annually,[10] thus there are many opportunities for such impulse purchases.

In addition, it is possible that the removal of tobacco products from CVS pharmacies and the campaign that accompanied it contributed to greater social sanctioning against smoking. The ubiquitous retail presence of cigarettes can be seen as an indicator that they are popular and widely accepted products.[11] Cigarettes' presence in pharmacies may be especially powerful in supporting their normativity, considering pharmacies sell otherwise health-promoting goods. CVS's sales ban may have decreased cigarettes' perceived popularity, as suggested by evidence from European point of sale display bans.[12,13]

It is possible, however, that this policy change had heterogeneous effects on nondaily smokers compared to daily smokers. Nondaily smokers are more likely than daily smokers to make impulse purchases,[6] as smoking is more strongly related to cues and cravings for nondaily smokers.[14–16] All smokers experience cravings in response to cues,[17] but daily smokers often experience moderate cravings to smoke throughout the day,[15] suggesting cues can only marginally impact their already existing cravings. Conversely, nondaily smokers

have few cravings in between smoking episodes,[15] giving cues more power to generate cravings and prompt impulse purchases.

Two other studies have analyzed CVS's policy change, finding evidence of effects among particular sub-groups. One study identified that, after implementation, CVS-exclusive cigarette purchasers were more likely to cease cigarette purchases for six months compared to those who never purchased cigarettes at CVS.[18] The second study found that urban smokers in the highest quartile of CVS density had higher probabilities of attempting to quit after the policy change compared to urban smokers in counties with no CVS locations (although the authors did not find evidence that they smoked less than daily at differential rates).[19] However, both studies focused on major behavior modifications, and there may be further impacts on other, more minor smoking behaviors, such as the number of cigarettes smoked per day, even amongst those who do not plan to quit or cut back in the near future.

Planned quit attempts require that an individual be in the preparation stage of the transtheoretical model of behavior change,[20–22] and it is estimated that only 20 percent of current smokers are in this stage. Approximately 40 percent of current smokers are estimated to be in the pre-contemplation stage and another 40 percent in the contemplation stage.[23,24] Impulse buying and social sanctioning may still affect the volume of cigarettes consumed by smokers in these stages (see Supplementary Figure 1). This notion is supported by recent research on smoke-free home rules that found that such rules reduced the number of cigarettes smoked per day among smokers in the pre-contemplation and contemplation stages as well as the preparation stage.[25] Previous studies of the CVS policy change were not able to assess the number of cigarettes consumed due to data limitations. Additionally, neither of the studies considered how the policy might differentially affect the behavior of current daily compared to current nondaily smokers.

As such, this study examines how the removal of tobacco from CVS pharmacies relates to a smoking behavior that may be alterable among a greater proportion of the smoking population, number of cigarettes smoked per smoking day, by daily smokers versus nondaily smokers living in metropolitan areas.

METHODS

Data

The data on smoking behaviors are from the Tobacco Use Supplement to the Current Population Survey (TUS-CPS), an individual-level nationally representative survey that serves as a primary source of data on tobacco use and cessation behaviors, attitudes, and tobacco-related policies in the United States. The Tobacco Use Supplement is co-sponsored by the National Cancer Institute and the U.S. Food and Drug Administration and is administered every three to four years with the U.S. Census' Bureau's Current Population Survey (CPS). All individuals who are over age 18 and in the civilian non-institutional population that complete the CPS are eligible for the TUS. Most respondents complete the interview for themselves, but some are interviewed by proxy.[26] This analysis utilized the 2014–2015 survey, which was administered across three time points that straddled the CVS policy implementation: July 2014 (before), January 2015 (after), and May 2015 (after).

Data on CVS pharmacy market share are from the Blue Cross and Blue Shield (BCBS) Institute Community Health Management Hub (CHM Hub®), a proprietary software application that accrues data on health outcomes and physical and socioeconomic characteristics of localities throughout the U.S.[27] Under a cooperative agreement, BCBS provided county-level counts of pharmacies for all U.S. counties as of 2014.

Data were linked at the Core-based Statistical Area (CBSA) level using CBSA codes. CBSAs are areas that comprise a county with an urban area of at least 10,000 residents and any surrounding counties in which 25 percent of residents commute to the central county for employment.[28] Metropolitan CBSAs were the most granular unit possible for analysis because the Census Bureau is prohibited from releasing geographic identifiers for respondents living in areas with fewer than 100,000 residents.[29] As such, some observations are missing CBSA identifiers, either because such data could risk disclosure of their residence in an area of less than 100,000 residents or because they live in non-metropolitan areas. While restricting the analysis to those with valid CBSA codes does limit the analysis to individuals living in more densely populated metropolitan areas, 85 percent of the U.S. population live in CBSAs with over 100,000 residents.[30] These CBSAs are also most likely to contain large chain pharmacies.

The sample was restricted to self-respondents (n=163,920), as proxy respondents were not asked the full spectrum of tobacco use questions. Of these self-respondents, 47,180 individuals (28.78 percent) were excluded, as they did not live in eligible metropolitan CBSAs. An additional 5,706 individuals (3.48 percent) were omitted because they lived in municipalities with existing tobacco-free pharmacy laws as of July 2014. Among those eligible, 503 individuals (0.45 percent) were eliminated for missing data on outcomes. The resultant sample consisted of 110,531 individuals, 13,814 (12.50 percent) of whom were current smokers, defined according to U.S. Centers for Disease Control and Prevention recommendations as those who reported that they had smoked at least 100 cigarettes in their lives and that they currently smoked some days or every day.

Measures

Two TUS-CPS questions were used to assess the number of cigarettes smoked per day by current smokers. Those who report smoking every day are asked “on the average, about how many cigarettes do you now smoke each day?” Those who report smoking some days are asked “on the average, on those days [you did smoke], how many cigarettes did you usually smoke each day?”

CVS market share was measured as the percentage of all pharmacies in the CBSA that are CVS pharmacies. The pharmacy total included standalone pharmacies as well as those within grocery stores and supercenters.

A number of covariates were also sourced from the TUS-CPS, including age, gender, race/ethnicity, highest level of education achieved, and current income.

Statistical Analysis

Multiple difference-in-difference (DID) models were estimated to assess changes in the number of cigarettes smoked among daily smokers and, separately, among nondaily smokers. DID models start with a comparison of outcomes before and after an exposure, in both groups exposed to a treatment and not exposed to a treatment. Next, the before-after difference in the exposed group is compared to the before-after difference in the unexposed group. The use of the unexposed group controls for secular trends in the outcome, and levels of the outcome can differ between the exposed and unexposed due to unmeasured covariates, but the approach relies on the assumption that outcomes for both groups followed parallel trajectories and would have continued to do so had the exposure not occurred.[31–33]

We first specified continuous DID models, which are similar to conventional DID models except that exposure to the policy is operationalized using a continuous measure that captures the intensity of the exposure rather than a binary variable that categorizes individuals as exposed or unexposed.[32,34–37] Such models are preferable when the treatment is continuous and there is no theoretical reason to specify a particular cut point in the distribution.[38] In these models, we examine the difference between the association of one percentage point CVS market share in an individual's CBSA with the number of cigarettes smoked per day before the policy was implemented and that same association after the policy was implemented. These models controlled for the individual-level covariates previously identified and included state fixed effects. Models were estimated using zero truncated negative binomial regression and weighted according to the self-respondent nonresponse weights provided by the TUS-CPS. Errors were clustered at the CBSA level.

Second, anticipating that the policy change might have had non-linear effects across the distribution of CVS market share, the same models were estimated using a categorical variable for CVS market share rather than a continuous variable. The distribution of CVS market share across CBSAs was divided into thirds, and individuals in CBSAs with zero CVS locations were considered unexposed. For individuals within each of the thirds, the difference in the average number of cigarettes smoked per day after the policy was implemented relative to before was compared to that same difference observed among individuals in CBSAs with zero CVS locations. More detail on models is included in supplementary materials.

Sensitivity Analyses

Several sensitivity analyses were performed to assess the robustness of these models' results. First, the models were estimated additionally controlling for the price individuals reported paying for the last pack of cigarettes they purchased, as the price of cigarettes can be predictive of the number of cigarettes smoked per day.[39,40] This variable was excluded from the main analyses for sample size and generalizability considerations. Some smokers, particularly nondaily smokers, obtain cigarettes by purchasing or bumming single cigarettes ("loosies") from friends or strangers,[41] so limiting the analysis to smokers who paid for cigarettes would exclude relevant respondents who might still experience spillover effects from the policy change. As expected, not all respondents answered this survey question and its inclusion reduced the sample size by 30.9 percent for daily smokers and 24.9 percent

for nondaily smokers. Nonetheless, it was included in a sensitivity analysis to assess the consistency of results when incorporated.

Second, the models assessing changes among nondaily smokers were specified using propensity score methods. A potential pitfall of DID models is that the groups being evaluated may change in composition over time in characteristics that influence the outcome,[42] and the sample of nondaily smokers exhibited some imbalance in key covariates in the pre-policy period compared to the post policy period, likely because the TUS-CPS was designed to be representative in its entirety. To adjust for this bias, propensity scores for being surveyed in the pre-policy period versus the post-policy period within each category of CVS market share were generated using logistic regression weighted by TUS-CPS survey weights and the sample was defined with radius matching using a caliper of 0.2 times the standard deviation of the logit of the propensity score.[43] This combination achieved the best balance compared to several other propensity score generation and matching schemes (see supplementary material for more detail).

Third, in order to ascertain if any variations in policy impact observed between daily smokers and nondaily smokers in the stratified analyses were significant, the categorical and continuous DIDs were estimated using the full sample of current smokers (n=13,814) and incorporating an indicator for being a daily versus nondaily smoker, interactions of this indicator with the measures of CVS market share and with the indicator for before versus after policy implementation, and a triple interaction between CVS market share, the indicator for before versus after policy implementation, and the indicator for being a daily smoker versus nondaily smoker.

Finally, as a negative control, the models were specified using Rite Aid pharmacy market share rather than CVS market share, as Rite Aid made no changes to its tobacco sales. Rite Aid pharmacies are not as geographically widespread as CVS pharmacies, so these models were estimated using only individuals residing in states with some Rite Aid presence (n=7,236 daily smokers, 2,029 nondaily smokers).

RESULTS

CVS made up a sizeable portion of the metropolitan pharmacy market in 2014. Across the 292 CBSAs in the sample, the mean CVS market share was 11.1 percent. Market share ranged from 0 to 34.8 percent, with 42 of the 292 CBSAs having no CVS locations at all (see Figure 1). These CBSAs included those in states where CVS has no presence (Colorado, Idaho, and South Dakota) as well are the less densely populated CBSAs under study (population <500,000). 5.5 and 5.5 percent of daily smokers and nondaily smokers, respectively, lived in CBSAs with zero CVS locations, 30.0 and 30.4 percent lived in CBSAs in the lowest third, 39.8 and 42.0 percent lived in CBSAs in the middle third, and 24.8 and 22.2 percent lived in CBSAs in the highest third. On average, current smokers in these CBSAs were more likely to be white and American Indian/Alaska Native, less likely to be Black, and more likely to have obtained a high school degree than those in CBSAs with some CVS presence (see Supplementary Table 2).

Of the sample's 13,814 current smokers, 10,759 were daily smokers (77.9 percent) and 3,055 were nondaily smokers (22.1 percent). At baseline, daily smokers reported smoking an average of 14 cigarettes per day (S.D.=7.9) and nondaily smokers reported smoking an average of 4 cigarettes per smoking day (S.D=3.9). The average number reported declined for both groups in the post-implementation period, but neither of these decreases were statistically significant at the 0.05 level in tests of differences in means. Table 1 displays the sociodemographic characteristics of current smokers throughout the study period. Nondaily smokers were on average younger, more likely to be racial/ethnic minorities, more highly educated, and had higher incomes than daily smokers, which is consistent with previous research.[44–46]

Table 2 displays DID parameters for each of the main models. All model estimates are exponentiated and presented as rate ratios, meaning a parameter represents the ratio of the interaction's two component rate ratios. The table shows that CVS' policy was not significantly associated with differential changes in the number of cigarettes smoked by daily smokers in the continuous DID nor in the categorical DID. However, both models suggested a modest yet beneficial impact of the policy on nondaily smokers. The continuous DID indicated that for every one percent increase in CVS pharmacy market share, the number of cigarettes smoked per smoking day was attenuated by 1.5 percent in the period following the policy's implementation (rate ratio=0.985, p=0.022).

The categorical DID, however, intimated that this association was non-linear. The results of this model indicated no differential change in the number of cigarettes smoked by nondaily smokers in CBSAs in the lowest third of CVS market share compared to nondaily smokers in CBSAs with no CVS presence. However, a stronger association than that observed in the continuous DID was identified among nondaily smokers in CBSAs in the middle and highest third (middle third: rate ratio=0.723, p=0.043; highest third: rate ratio=0.706, p=0.027). These results suggest that a substantial CVS footprint in the pharmacy market may be required for the policy change to be influential and that the constant dose response assumed in the continuous DID may temper stronger relationships observed at greater degrees of market share.

The sensitivity analyses generally supported the original findings. No alternative specification for the impact of CVS's policy change identified a significant association between the policy change and cigarettes smoked per day among daily smokers. The results of these models for nondaily smokers mirrored those of the main analyses, with the exception that the significant association observed among smokers in the middle third of CVS market share was not robust to all alternative specifications (see Table 3). As a result, we more cautiously interpret those results. The stronger association observed among nondaily smokers in the highest third of CVS market share remained robust.

The negative control models estimated using Rite Aid market share as the predictor did not identify any statistically significant differences.

DISCUSSION

The removal of tobacco products from CVS pharmacies was associated with a reduction in the number of cigarettes smoked per day among nondaily smokers in metropolitan CBSAs, particularly those in which CVS had a considerably larger pharmacy market share. This result is in line with expectation, as retailer density has been associated with smoking prevalence in metropolitan areas[47] and estimates suggest that the removal of tobacco from pharmacies would reduce retailer density by between nine and eighteen percent.[48–50]

While no change was identified among daily smokers, the decrease in cigarette consumption observed among nondaily smokers is notable. While the overall number of current smokers has declined in recent years, the number of nondaily smokers has increased.[51] This change does not simply represent daily smokers reducing their smoking and becoming nondaily smokers. Certainly, some nondaily smokers are newly initiated or transitioning from more intensive smoking, but almost half of nondaily smokers are stable in their habits, having been smoking nondaily for at least one year. Of these stable smokers, over three quarters have been stable for at least 5 years.[44] Crucially, nondaily smokers tend to be missed by clinical smoking cessation efforts. Many nondaily smokers do not identify as smokers[52–54] and they are less likely than daily smokers to be asked by physicians about their tobacco use or be advised to quit.[45] If they do decide to quit or cut back, pharmacotherapies designed to counter nicotine withdrawal are, for the most part, untested among and have unknown effectiveness for nondaily smokers, who often do not experience nicotine dependence.[53] Further, with different motivations for smoking[14] and different perceptions of health risks than daily smokers,[55,56] they may not be receptive to standard cessation messages. Thus, any intervention, including removing tobacco from pharmacies, that might assist nondaily smokers in reducing their tobacco use has unique value.

It is important to note that the effects observed in this study are modest in comparison to those of other tobacco control policies[57–59] and some pharmacological and behavioral interventions.[60–62] Using the estimates from the categorical DID, nondaily smokers living in CBSAs in the highest third of CVS market share are predicted to smoke only 0.415 fewer cigarettes on smoking days after implementation compared to before, holding all other covariates constant at their means or most populous category. However, small reductions may still result in improvements in health, as there is no safe amount of cigarette consumption. More substantial effects could potentially be realized if tobacco were to be removed from all pharmacies, rather than only CVS locations.

This analysis had important limitations, multiple related to the structure of the TUS-CPS and the limited availability of BCBS data. The periodic nature of the TUS-CPS precluded assessment of the whether trends were parallel in the pre-implementation period, an assessment often used to assess the plausibility of the overall parallel trends assumption. With three to four years between each TUS-CPS data collection, the inclusion of prior data would not have been particularly useful for such trend analysis, nor for assessing if there were any anticipatory effects, given CVS announced the policy change in February 2014. Additionally, the 2014–2015 survey was designed to be nationally representative in its entirety, so data from one collection point may not be comparable to data other collection

points. While we observed that there was relatively little imbalance in observed covariates between data collected before the policy change and afterwards and corrected for remaining imbalance using propensity scores, this remains a source of possible bias. Further, it is feasible that the number of CVS stores may have changed between July 2014 and May 2015, which we were unable to determine with data from only one time point. For these reasons, similar analyses should be conducted if more robust longitudinal data become available. Furthermore, as noted, the analysis was restricted to individuals in metropolitan areas with at least 100,000 residents due to the availability of geographic identifiers, which limits the generalizability of its findings. While metropolitan areas are most likely to contain CVS pharmacies[63] and be impacted by the policy change,[19] the analysis should be extended to individuals in all areas with any CVS presence if these data are available in the future.

CONCLUSION

The removal of tobacco products from CVS pharmacies in 2014 was followed by a reduction in the number of cigarettes smoked per smoking day among nondaily smokers in metropolitan areas, particularly those in which CVS had a larger share of the pharmacy market. These findings are noteworthy as they indicate a benefit for a population that is still at high risk of adverse health outcomes, but that is generally overlooked in smoking cessation programs and policies. Similar tobacco-free policies should be considered by other corporate pharmacies that have a substantial local market share and policy-makers considering state or municipality-level tobacco free pharmacy policies, as they may be a promising tactic for reducing smoking and subsequent chronic disease at the population-level.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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WHAT THIS PAPER ADDS

- Tobacco is commonly sold in pharmacies in the U.S. but, in 2014, CVS Health ceased tobacco sales in all of its pharmacies. Previous work has suggested that this policy change was associated with the cessation of tobacco purchases and quit attempts, particularly in metropolitan areas.
- This study assesses whether or not the policy change impacted a smoking behavior that may be alterable among a greater proportion of the metropolitan smoking population, the number of cigarettes smoked per day among current smokers. Further, it assesses whether the policy had differential effects on daily smokers and nondaily smokers.
- This study suggests that the removal of tobacco products from CVS pharmacies had no identifiable impact on the number of cigarettes smoked by metropolitan daily smokers but was associated with a reduction in the number of cigarettes smoked among metropolitan nondaily smokers, particularly in areas in which CVS has a larger share of the pharmacy market.

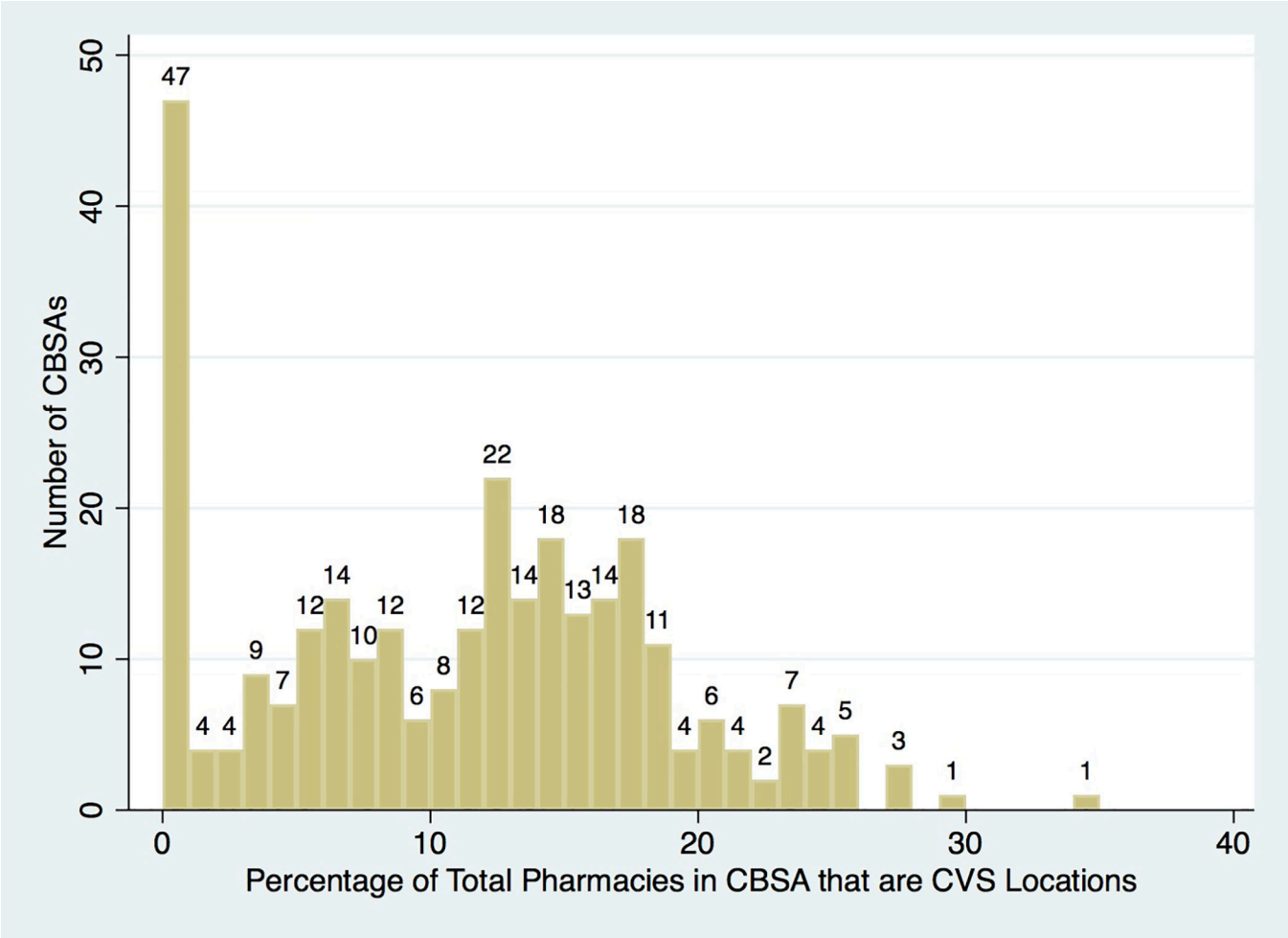

Figure 1.
CVS pharmacy market share among Core-Based Statistical Areas (n=292)

Table 1.

Demographic and socioeconomic characteristics of current smokers

	All current smokers **(n=13,814)**	***Daily smokers*** **(n=10,759)**	***Nondaily smokers*** **(n=3,055)**
Cigarettes smoked per day	11.7	13.9	4.27*
Age (mean)	44.3	45.3	40.91*
Female (%)	45.2	45.9	42.75*
Race (%)			
White	78.2	79.8	72.7*
Black	15.3	14.2	18.8*
Asian/Pacific Islander	3.3	2.9	4.9*
American Indian/Alaska Native	1.1	1.0	1.2
Multiracial	2.2	2.1	2.4
Ethnicity (%)			
Hispanic	11.7	9.9	17.6*
Non-Hispanic	88.3	90.1	82.4*
Education (%)			
< HS degree	15.7	16.4	13.47*
HS degree/GED	38.0	40.1	31.33*
Some college	32.9	32.6	34.0
College degree+	13.3	11.0	21.18*
Income (%)			
<$20,000	27.7	27.8	27.2
$20,000–34,999	21.7	22.2	20.2*
$35,000–49,999	14.8	15.3	13.05*
$50,000–74,999	16.8	16.9	16.5
>$75,000	19.0	17.8	23.05*

Note. Estimates are weighted by self-only non-response weights.

* indicates statistical significance ($p<0.05$) in t-test of means compared to daily smokers.

Source. Tobacco Use Supplement to the Current Population Survey (CPS-TUS) 2014–2015.

HS = High school; GED=General education development.

Table 2.

Difference-in-difference models of cigarettes smoked per day among current smokers

	Daily smokers (n=10,759)	Nondaily smokers (n=3,055)
Continuous exposure		
Post Policy × CVS%	1.002 (0.002) [0.153]	**0.985** * (−0.006) [0.022]
Categorical Exposure		
Post Policy × Lowest Third of CVS Market Share	0.980 (0.069) [0.774]	0.818 (0.126) [0.192]
Post Policy × Middle Third of CVS Market Share	1.035 (0.070) [0.612]	**0.723** * (0.116) [0.043]
Post Policy × Highest Third of CVS Market Share	1.042 (0.072) [0.549]	**0.706** * (0.111) [0.027]

Note. Presented are exponentiated coefficient estimates (rate ratios) of the difference-in-difference parameters using zero truncated negative binomial regression. Clustered standard errors are in parentheses and p-values are presented in brackets. Boldface indicates statistical significance (*p<0.05, **p<0.01, ***p<0.001).

Source. Tobacco Use Supplement to the Current Population Survey (CPS-TUS) 2014–2015, BCBSA Community Health Management Hub®.

Table 3.

Difference-in-difference estimates from sensitivity analyses assessing cigarettes smoked per day among nondaily smokers

	Main analysis (n=3,055)	Controlling for price (n=2,294)	Propensity score weighted (n=3,038)	Triple interaction term[1] (n=13,814)	Rite Aid market share (n=2,029)
Continuous exposure					
Post Policy × CVS%	**0.985*** (0.006) [0.022]	**0.987*** (−0.006) [0.035]	**0.985*** (0.006) [0.022]	**0.983*** (0.006) [0.004]	1.010 (0.008) [0.165]
Categorical Exposure					
Post Policy × Lowest Third of CVS Market Share	0.818 (0.126) [0.192]	0.796 (0.134) [0.176]	0.802 (0.131) [0.177]	0.932 (0.129) [0.611]	0.919 (0.259) [0.765]
Post Policy × Middle Third of CVS Market Share	**0.723*** (0.116) [0.043]	0.733 ~ (0.131) [0.081]	**0.698*** (0.118) [0.033]	0.800 (0.121) [0.142}	0.943 (0.271) [0.838]
Post Policy × Highest Third of CVS Market Share	**0.706*** (0.111) [0.027]	**0.702*** (0.114) [0.030]	**0.695*** (0.116) [0.029]	**0.742*** (0.108) [0.040]	1.053 (0.300) [0.856]

Note. Presented are exponentiated coefficient estimates (rate ratios) of the difference-in-difference parameters using zero truncated negative binomial regression.

[1] denotes that estimates in this column are the coefficients from the triple interaction term between CVS market share, before (reference category) versus after policy implementation, and daily (reference category) versus nondaily smoking. Clustered standard errors are in parentheses and p-values are presented in brackets. Boldface indicates statistical significance at the 0.05 level (~p<0.10, *p<0.05, **p<0.01, ***p<0.001).

Source. Tobacco Use Supplement to the Current Population Survey (CPS-TUS) 2014–2015, BCBSA Community Health Management Hub®.