A Pilot Study to Examine Retailer Compliance Before and After Tobacco 21 in New Jersey

Mary Hrywna, PhD, MPH*
Christopher Ackerman, MPH
Cristine D. Delnevo, PhD, MPH

Abstract

Despite rapid diffusion of Tobacco 21 (T21) laws in the last several years, research examining T21 compliance remains limited. This pilot study examined retailer compliance with carding before and after T21 as well as sales violations after T21 in New Jersey. A 19-year-old buyer made alternating cigar and cigarette purchase attempts in 15 licensed tobacco retailers weekly for five weeks before and 10 weeks following the T21 effective date for a total of 222 visits. We analyzed carding pre and post T21 and sales violations post T21, by store and product type. Failure to card declined post T21 (81.3% to 69.4%), particularly for cigarettes, but not cigars. Overall, 63.3% of retailers sold tobacco to the underage buyer post T21. Following New Jersey's T21 law, compliance with carding improved, but underage sales persisted. Future research examining T21 compliance should consider using a familiarity protocol to mimic real word conditions.

*Corresponding author can be reached at: hrywnama@cts.rutgers.edu

Background

Tobacco use is often established during adolescence with most smokers initiating before age 18. A higher minimum age of sale for tobacco products should reduce youth access by limiting commercial (e.g., retailers) and social sources (e.g., older buyers). In 2015, the Institute of Medicine (IOM) concluded that raising tobacco's legal sales age to 21 would prevent or delay initiation and reduce disease (Institute of Medicine, 2015). While some localities adopted Tobacco 21 (T21) before 2015, the IOM report accelerated diffusion, first locally and then statewide, culminating in a federal T21 law passed in 2019. In New Jersey, 28 localities adopted T21 before the state increased its tobacco age of sale from 19 to 21, effective November 1, 2017 (Campaign for Tobacco Free Kids, 2021). The extent to which T21 will reduce youth access depends on implementation.

Under both the Substance Abuse and Mental Health Services Administration (SAMHSA)'s Synar Program and the Food and Drug Administration (FDA)'s Tobacco Retail Compliance Program, tobacco retailers in New Jersey are subject to compliance checks with tobacco age of sale laws. The FDA deeming rules also stipulate that tobacco retail employees must check photo ID of everyone under age 27 who attempts to purchase any tobacco product. An important question is whether T21 laws will result in measurable improvement in age of sale compliance among retailers, both with ID checks and sales to underage buyers. The few previous studies examining retailer compliance after T21 laws have found mixed results. Following New York City's T21 law, retailer compliance with ID checks of legal age buyers (ages 18-21 pre T21 and ages 21-22 post T21) actually decreased from 71% to 61.4%, with chain store retailers having higher rates of compliance versus independent stores (Silver et al., 2016). In California, a study of buy attempts by youth aged 18 showed that retailer compliance with sales increased from 89.7% before T21 to

94.3% after the statewide T21 law, with variation by store type and region (Zhang et al., 2018). In a study conducted among the same 91 retailers in Columbus, Ohio in 2017 and 2018, researchers found that 39% of retailers conducted ID checks before T21 compliance and 78% conducted ID checks in the year after the citywide T21 law (Roberts et al., 2021).

However, previous research suggests that single compliance checks may not provide valid estimates of retailer compliance (Levinson et al., 2018; Levinson & Patnaik, 2013). This pilot study, unlike previous work (Roberts et al., 2021; Silver et al., 2016; Zhang et al., 2018) tests a protocol using repeated purchase attempts by the same buyer in a small sample of retailers to assess retailer compliance with carding before and after a statewide T21 law as well as sales violations after T21.

Methods

This study adapted a real world "familiarity protocol," in which a covert buyer attempts to purchase tobacco in stores where they shop regularly and is likely to be recognized by store clerks; repeated visits improve reliability as a single buy is subject to variability based on time of day, clerk on duty, and other contextual factors (Landrine & Kolnoff, 2003). New Jersey's minimum age to buy tobacco products was raised to 19 in 2005 and then to 21 in 2017 (bill signed on July 21; effective November 1).

A list of licensed tobacco retailers in New Jersey was obtained from the New Jersey Department of Health. Using this list, stratified random sampling was used to select tobacco retailers operating within a three mile geodesic buffer surrounding the main campus recreational center of Rutgers University in New Brunswick, New Jersey. In total, we identified 168 stores falling within this buffer. Then, we stratified all the stores by three types (e.g., gas station, chain convenience store, non-chain convenience store), and randomly selected five stores from each strata (n = 15).

Our buyer was a 19-year-old male who visited the same 15 retailers weekly for five weeks before the effective date of T21 (September/October 2017), six weeks immediately following T21 (November/December 2017), and for another four weeks the following spring (March 2018) for a total of 222 visits. Purchase attempts alternated weekly between two tobacco products, Black & Mild cigars and Marlboro Gold cigarettes. Federal law requires carding anyone appearing under age 27 who attempts to purchase tobacco. If a store clerk asked the buyer about his age or more specifically, if he was 21, the buyer was instructed to say, "Do you want to see my ID?" Our buyer was instructed not to lie about his age and show his legal driver's license if asked for ID, a strategy shown to increase the rates of ID requests and violations (Landrine & Koloff, 2003; Levinson et al., 2002; Levinson et al., 2020). In addition to providing date of birth, a New Jersey driver's license is printed on the vertical axis if the license holder is not yet 21 years of age. Our buyer repeated purchase attempts in all stores, regardless of outcome. The Rutgers Health Sciences Institutional Review Board determined this study was non-human subject research. We analyzed carding pre and post New Jersey's T21 effective date (November 1, 2017) and sales violations post T21 for each unique store as well as overall by store and product type. Descriptive statistics were calculated using Stata Version 16.

Results

Low rates of carding and high rates of underage sales were noted during the study period, with slight shifts around the

enactment date (Figure 1). Overall, failure to request ID was high, although it decreased somewhat after T21 (Pre-T21 = 81.3% compared to Post-T21 = 69.4%), as shown in Table 1. Rates of carding violations improved more for cigarette (Pre-T21 = 93.9% to Post-T21=66.7%) versus cigar products (Pre-T21=71.4% to Post-T21=72.5%) after T21. Carding violations also declined for all store types after T21, although less so for convenience stores; these stores also had the highest rate of sales violations (74.5%), compared to other retailers.

As shown in Table 1, all retailers failed to card at least once in 15 visits; carding for 8 stores increased and carding in 4 stores decreased while 3 stores stayed the same. Overall, 62.9% of retailers sold tobacco to the underage buyer post T21. A sale was much less likely if ID was checked; sales violations occurred only 6.7% of the time if the ID was checked. Lastly, only one retailer refused sales to a minor 100% of the time.

Discussion

Following New Jersey's T21 law, we saw limited improvement in carding for tobacco sales in our sample of stores. Overall, sales violations were common. Stores that improved carding had lower rates of sales violations but selling to minors remained the norm. We also noted variation in retailer behavior by store and tobacco product type, which warrants attention in future research. Mirroring real life, our buyer repeatedly returned to the same stores and poor retailer compliance continued despite the new law, with successful tobacco purchases in two out of three sales. In contrast, New Jersey's federally tracked violation rate for tobacco sales to minors was extremely low for a similar time period (13.6%) (SAMHSA, 2021). Only if a retailer challenged the buyer to show ID did the sales violation resemble the estimates of official sales violations reported by the state. Thus, the law alone is likely to have a relatively limited impact on reducing illegal sales of tobacco to minors.

Our work provides additional support for improving the implementation of tobacco age of sale compliance inspections to maximize impact on youth access. The existing literature suggests important ways to improve the reliability and validity of underage buy protocols, including the presentation of ID if asked and multiple purchase attempts by the same minor at the same stores. Establishing familiarity suggests a truer measure of retailer compliance compared to traditional compliance inspections where underage strangers attempt a single purchase at random stores. With the establishment of federal T21, states also should consider the participation of unaccompanied young adults in retailer inspection efforts.

Retailer noncompliance may result from lack of active education or enforcement of T21 among retailers. However, factors such as clerk training and electronic ID verification may encourage T21 compliance more than awareness or knowledge of the law (Roberts et al., 2021). Ultimately, consistent compliance with ID checks will yield the greatest public health benefit from T21 and effort should be devoted to strengthening implementation and enforcement of tobacco age of sale compliance. Future research should evaluate the impact of T21 over time using a more diverse group of purchasers with a larger sample size of stores as well as different stores and products to consider factors associated with compliance. There is some evidence to suggest that retailers are less likely to card for, and more likely to sell vaping products to, minors (Levinson et al., 2020); in addition, compared to corporate-owned stores, franchise stores were less likely to card and more likely to sell e-cigar-

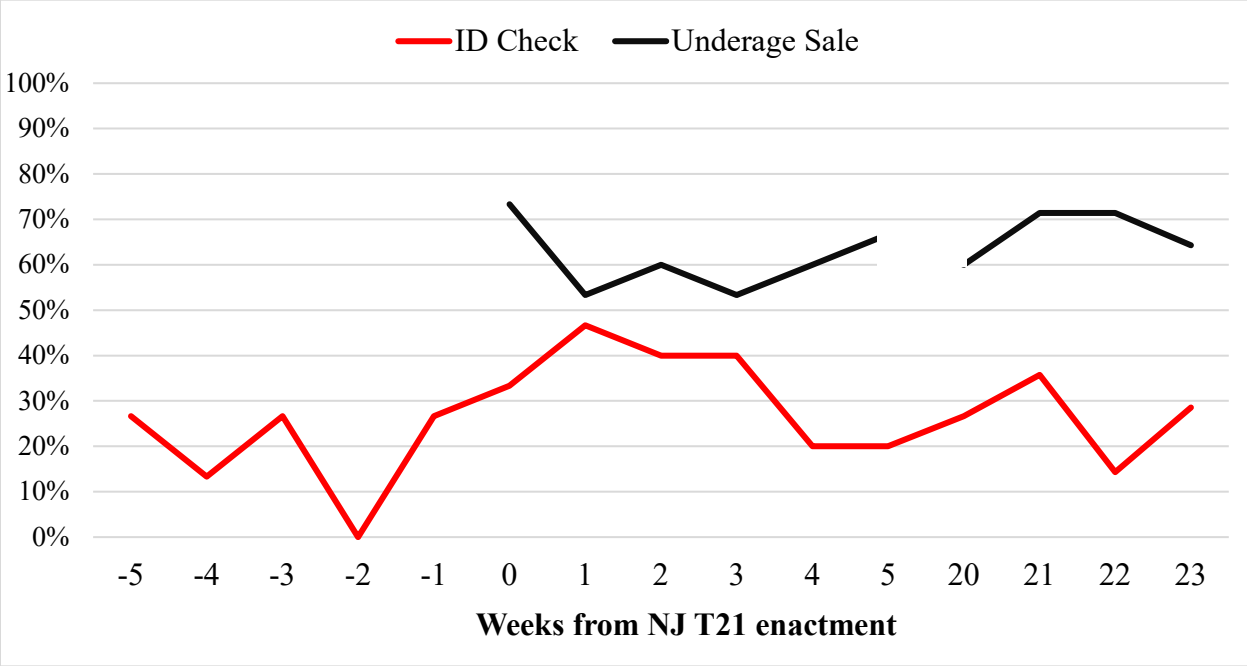

Figure 1. ID checks and tobacco sale in 15 tobacco retailers in NJ, 9/27/17-4/1/18.

Table 1

Prevalence of Carding and Underage Sales at 15 Tobacco Retailers in NJ pre/post T21, 9/27/17-4/1/18

	Carding Violation Pre T21		Carding Violation Post T21		Sales (post T21) Violation	
	%	95% CI	%	95% CI	%	95% CI
Tobacco Product						
Cigar	71.4%	(57.8%-85.1%)	72.5%	(61.9%-83.0%)	62.3%	(51%-74%)
Cigarette	93.9%	(85.8%-100.0%)	66.7%	(56.2%-77.1%)	64.1%	(53%-75%)
Store Type						
Bodega	80.0%	(64.3%-95.7%)	66.0%	(52.9%-79.1%)	56.0%	(42%-70%)
C-Store	76.0%	(59.3%-92.7%)	72.3%	(59.6%-85.1%)	74.5%	(62%-87%)
Gas St	88.0%	(75.3%-100.0%)	70.0%	(57.3%-82.7%)	60.0%	(46%-74%)
Carded						
No	n/a				88.2%	(82.0%-94.5%)
Yes					6.7%	(0.0%-14.0%)
Unique Store						
3	100.0%		100.0%		100.0%	
5	60.0%		100.0%		100.0%	
11	100.0%		100.0%		100.0%	
4	100.0%		80.0%		90.0%	
7	80.0%		90.0%		90.0%	
8	60.0%		70.0%		80.0%	
9	80.0%		80.0%		80.0%	
12	100.0%		60.0%		70.0%	
13	80.0%		70.0%		70.0%	
10	100.0%		50.0%		50.0%	
14	100.0%		50.0%		50.0%	
2	80.0%		57.1%		42.9%	
1	100.0%		33.3%		11.1%	
6	60.0%		50.0%		10.0%	
15	20.0%		50.0%		0.0%	
Overall	81.3%	(72.5%-90.2%)	69.4%	(61.9%-76.8%)	62.9%	(55%-71%)

ettes illegally (Henriksen et al., 2020). Thus, larger replication studies are needed.

This pilot study evaluating T21 compliance using a test-retest compliance protocol provides further evidence that young access to tobacco remains high despite increased age of sale. Tobacco control efforts would be improved by strengthening enforcement of tobacco age of sale compliance protocols and reducing youth access to tobacco.

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