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Authors

Epperson, Anna E

Johnson, Trent O

Schleicher, Nina C

et al.

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Brief report

The Price of Natural American Spirit Relative to Other Cigarette Brands

Anna E. Epperson PhD, Trent O. Johnson MPH[✉], Nina C. Schleicher PhD, Lisa Henriksen PhD

Stanford Prevention Research Center, Department of Medicine, Stanford University School of Medicine, Stanford, CA

Corresponding Author: Anna E. Epperson, PhD, Stanford Prevention Research Center, Department of Medicine, Stanford University School of Medicine, 1265 Welch Road, Suite 300, Stanford, CA 94305-5411, USA. E-mail: aepper@stanford.edu

Abstract

Introduction: American Spirit cigarettes feature American Indian/Alaska Native (AI/AN) imagery in the branding and are marketed as environmentally friendly, without additives, and four varieties contain organic tobacco. This study is the first to examine retail price of American Spirit relative to other cigarette brands and to assess how its price varies by neighborhood demography.

Methods: In a random sample of licensed tobacco retailers ($n = 1277$), trained data collectors recorded availability and price of American Spirit, Pall Mall, Newport, Marlboro, and the cheapest cigarettes regardless of brand. Data were collected in January–March 2017 in California, the state with the largest AI/AN population. Paired t tests assessed prices (before sales tax) of American Spirit relative to others. Ordinary least squares regressions modeled prices as a function of neighborhood demography, adjusting for store type.

Results: American Spirit was sold in 77% of stores at an average price of \$7.03 (SD = 0.66), which was \$0.75–\$1.78 (12.0%–34.4%) higher than Pall Mall, Newport, and Marlboro in the same stores. American Spirit costs significantly less in neighborhoods with a higher proportion of school-age residents; however, this pattern was not unique to that brand. Contrary to expectation, American Spirit did not cost less in neighborhoods with a higher proportion of AI/ANs.

Conclusion: This study is the first to document lower prices for American Spirit in neighborhoods with a higher proportion of school-age youth. Future research should consider whether the ultra-premium price of American Spirit contributes to misperceptions that the brand is organic and less harmful than other cigarettes.

Implications: In a large random sample of licensed tobacco retailers in California, American Spirit costs significantly more than other brands, 12.0%–34.4% more than Pall Mall, Newport, and Marlboro in the same stores. After controlling for store type, American Spirit price was significantly lower in neighborhoods with a higher proportion of school-age residents. Research about how an ultra-premium price contributes to misperceptions that all American Spirit varieties are organic and the brand is less harmful and less addictive than other cigarette brands would be informative for ongoing litigation and product regulation.

Introduction

More than 2.5 million adult smokers incorrectly believe that their cigarettes are less harmful than others,¹ and American Spirit smokers are more than 20 times as likely as smokers of other brands to endorse this false belief.² In previous studies, smokers and nonsmokers

were more likely to perceive American Spirit as the “healthier” option and rated the brand as less likely to cause harm to health compared to other cigarette brands.^{3,4} Cigarettes marketed as “natural” are more likely to be perceived by youth as less harmful to health,⁵ and research examining perceptions about American Spirit

has found that the brand appeals more to younger smokers (aged 18–34 years) than to older smokers.²

The US Food and Drug Administration required the manufacturer (Santa Fe Natural Tobacco Company, owned by Reynolds America, a division of British American Tobacco) to remove the marketing terms “additive-free” and “natural” from American Spirit packaging and advertising,⁶ but allowed the company to retain “natural” in its brand name. In 2018, new packaging replaced the banned terms with the phrase “Tobacco Ingredients: Tobacco & Water.” Four of the 14 varieties of American Spirit are marketed as organic.

In spite of significant declines in cigarette smoking over three decades, one of the smallest declines was observed among American Indians/Alaska Natives (AI/ANs),⁷ a priority population with the highest smoking prevalence in the United States (31.8%)⁸ and in California (32.2%),⁹ where this research was conducted. Analyses of previously secret tobacco industry documents criticized tobacco companies, including Santa Fe Natural Tobacco Company, for appropriating AI/AN imagery, symbols, and the ceremonial use of traditional tobacco to market commercial tobacco products.¹⁰ American Spirit is noteworthy for marketing tactics that may appeal to the AI/AN community, contributing to misperceptions that the brand is manufactured by AI/ANs or on tribal lands near Santa Fe, New Mexico.¹¹ Indeed, California’s American Indian Tobacco Education Network sponsored a counter-marketing campaign near AI/AN tribal lands that pictured American Spirit and two other cigarette brands with the message, “Stop the sale of our image: Don’t buy the lie.”¹² Another priority population are adolescents who smoke cigarettes, use other tobacco products, or are susceptible to future use. Approximately 8.8% of US high school students reported past-month cigarette smoking.¹³

Previous studies demonstrate consumers’ willingness to pay higher prices for organic foods,^{14–16} but the relative price of cigarettes that are marketed as organic or additive-free has not been studied. Price sensitivity among youth who smoke is well established.¹⁷ Although price sensitivity of AI/AN smokers in the United States has not been studied, previous research in New Zealand found that indigenous smokers of Maori heritage were more price sensitive when compared to smokers of European heritage.¹⁸ In addition, AI/ANs have the highest rate of tobacco use in the United States⁸ and a relative lower income.¹⁹

Research on variation in cigarette prices by brand and neighborhood demography has focused almost exclusively on the premium brands Marlboro (Philip Morris and Altria) and Newport (manufactured by Lorillard until it was acquired by Reynolds American in 2015).^{17,20} To date, less research has examined American Spirit relative to other cigarette brands in the same stores and in relation to neighborhood demography. On the basis of evidence that the tobacco companies have marketed menthol cigarette brands to specific groups (eg cheaper in African-American/Black neighborhoods),^{21,22} we examined whether a lower price for American Spirit would exist in neighborhoods with a higher proportion of AI/AN residents. On the basis of previous findings,²⁰ we also examined whether prices for American Spirit were lower in neighborhoods with a higher proportion of youth and lower in pharmacies compared to other stores. California is an ideal setting for this research because it is the state with the largest AI/AN population (over 650 000 in 2016)²³ in the United States, and the state tobacco control program sponsors routine marketing surveillance of the retail environment for tobacco.

Methods

Our research team trained nine professional data collectors to use iPads to conduct a 42-item retail marketing surveillance instrument

about product availability, promotion, and price. Data were collected between January and March 2017 in a random sample of licensed tobacco retailers from a list now maintained by the California Department of Tax and Fee Administration. In the field, data collectors determined that 3.3% of 1350 stores were ineligible (eg, no longer in business or selling tobacco). Data collectors completed marketing surveillance in 97.9% of eligible stores ($n = 1277$). Reasons for nonresponse (including some sites where administration of the surveillance instrument was not completed) were merchant refusal before and/or during surveillance ($n = 27$) and road closure due to inclement weather ($n = 1$). This study reports on the subset of survey items related to price of cigarettes.

Measures

Cigarette Pack Prices

Following an established protocol,²⁴ one data collector per store recorded the single-pack price for five cigarette packs: (1) Pall Mall (red), the most popular value brand; (2) Newport (menthol), the most popular menthol brand; (3) Marlboro (red), the most popular non-menthol brand; (4) the cheapest pack of cigarettes regardless of brand; and (5) American Spirit (yellow), which was the top-selling variety at the time of data collection. The yellow pack was marketed as “mellow” but was not labeled as organic. Data collectors indicated whether the sales tax was included (“plus tax” = no) and whether the price was discounted (eg, 50 cents off). Instructions asked data collectors to collect price of American Spirit blue if mellow yellow was not sold, but this occurred infrequently ($n = 22$ stores). In addition, data collectors categorized stores using standard definitions: convenience stores with and without gasoline, gas only (kiosks), head shops, liquor stores, pharmacies, smaller grocery stores (small markets), supermarkets, tobacco shops, vape shops, and other.²⁴

Neighborhood Demographics

Using ArcGIS v 10.1, we geocoded retailer addresses (99.3% were mapped) and created a half-mile roadway network service area around each store. Using the American Community Survey (5-year estimates, 2011–2015), census tract data on race/ethnicity (% non-Hispanic African American/Black, % non-Hispanic AI/AN, % non-Hispanic Asian/Pacific Islander, % non-Hispanic Other), ethnicity (% Hispanic), age (% school-age youths aged 5–17 years and % young adults aged 18–24 years), and median household income (an indicator of socioeconomic status) were weighted in proportion to tract area when multiple tracts intersected a store-neighborhood buffer.^{20,25} In the current study, we found that including education risked multicollinearity.

Analyses

The analysis sample ($n = 1182$) excluded 8.4% of the sample that did not sell cigarettes. The primary outcome was price before sales tax because most cigarette prices are advertised this way and the maximum variation in local sales tax is small (2.50% in 2017).²⁶ Sales tax was subtracted from price in 12.7% stores. Paired t tests assessed the price of American Spirit relative to other brands in the same stores. Ordinary least squares regression analyses examined price as a function of neighborhood demographics (race/ethnicity and age) and adjusted for store type and median household income, with pharmacies coded as the reference category. The sample roadway network could not be created for one store and this was not included in the final regression analyses. We combined gas only ($n = 11$) and head shops ($n = 19$) with other establishments ($n = 47$)

because of small sample sizes. We also combined vape shops ($n = 13$) with tobacco shops ($n = 75$). All census-derived demographic variables were standardized.

Interrater Reliability

Intraclass correlation coefficients assessed concordance between measures of the same prices by different data collectors in a random sample of stores ($n = 75$) visited 0 to 14 days apart. Intraclass correlation coefficients for cigarette prices ranged from 0.67 to 0.88. Analyses were conducted using IBM SPSS Statistics version 24.

Results

American Spirit was available in 77.2% of the California licensed tobacco retailers surveyed that sold cigarettes in 2017. Like other brands, it was most commonly sold in pharmacies (94.2%). American Spirit was also commonly sold in tobacco shops (92%), convenience stores (83.5%), and liquor stores (76.2%). Consistent with its reputation as an ultra-premium brand, American Spirit was the most expensive of the five cigarette prices that were recorded (see Table 1). Paired-samples t tests indicated that prices of American Spirit were significantly higher compared to other cigarettes within the same stores; 12.0% more than Newport, 14.9% more than Marlboro, 34.4% more than Pall Mall, and 51.6% more than the cheapest pack regardless of brand ($ps < .001$). Discounts on single-pack prices were uncommon, particularly for American Spirit (discounted in 4.0% of stores). Pall Mall was discounted in 17.6%, Newport in 18.0%, Marlboro in 4.5%, and the cheapest pack regardless of brand was discounted in 14.8% of stores.

As shown in Table 2, American Spirit costs significantly less in neighborhoods with a higher proportion of school-age youth (aged 5–17 years) and this finding adjusted for store type. However, this pattern was not unique to the brand. For example, the estimated price in pharmacies was \$0.13 less with each one standard deviation increase (4.9 percentage points) in the proportion of school-age youth. A similar pattern was observed for Pall Mall, Newport, and Marlboro with differences ranging from \$0.13 to \$0.27 less, depending on store type. There was no difference in the price of American Spirit in neighborhoods with higher proportions of any racial/ethnic group. However, Pall Mall was more expensive in neighborhoods with a higher proportion of AI/AN residents. For example, estimated price of Pall Mall in pharmacies was \$0.14 more with each 1.1 percentage point (standard deviation) increase in the proportion of the AI/AN population. Pall Mall, Newport, and the cheapest pack cost more in neighborhoods with higher proportions of Hispanic/Latinos, and Marlboro costs more in neighborhoods with higher proportions of non-Hispanic Blacks.

American Spirit and other premium cigarettes cost less in pharmacies than in many other store types, ranging from \$0.30 more in convenience stores to \$0.94 more in supermarkets. Price of American Spirit in pharmacies did not differ from price for the same brand in tobacco and/or vape and “other” shops. Compared to many other store types, pharmacies also charged less for other cigarette brands, but not the cheapest pack regardless of brand.

Discussion

This study is the first to compare prices for American Spirit with cigarette brands that are not marketed as organic and/or additive-free. An ultra-premium brand, the price of American Spirit was typically \$0.75–\$1.78 (12.0%–34.4%) more than the other brands evaluated, including two premium brands, Newport and Marlboro. American Spirit costs less in neighborhoods with a higher proportion of school-age youth (aged 5–17 years), which is concerning because younger smokers are price sensitive and lower prices may encourage tobacco use among youth.^{17,27} Lower prices for American Spirit and other cigarette brands in pharmacies compared to other store types updates previous research in California and the United States.²⁰

Contrary to expectation, American Spirit did not cost less in neighborhoods with a higher proportion of AI/AN residents. Instead, price of Pall Mall, a discount brand from the same manufacturer, costs more in neighborhoods with a higher proportion of AI/ANs, which could serve to discourage AI/ANs from switching from the ultra-premium American Spirit to lower-priced Pall Mall. However, we cannot know whether differential pricing is due to the manufacturer, retailers, or both. Cheaper prices for Newport in African American/Black neighborhoods) were not evident in this study. However, the established pattern from previous research predates the change in ownership from Lorillard to Reynolds American (British American Tobacco) and a null finding is consistent with another California study.²⁸

Strengths of the current study are monitoring price of multiple cigarette brands from different manufacturers, data from a large representative sample of licensed tobacco retailers, and a focus on the AI/AN population in store neighborhoods. The main limitation is that the (mellow) yellow is not a variety of American Spirit that is labeled as organic. The pack was chosen because it was a top-selling variety at the time of data collection. Another limitation is that interrater reliability was variable for cigarette price and lowest for Newport. Clerk or data collector error can contribute to lower reliability, particularly when multipack discounts are available.

Although we studied a representative sample of licensed tobacco retailers, the study is limited to a single state. Future research should consider price of other tobacco products marketed as organic and

Table 1. Mean (SD) and Relative Prices, by Cigarette Brand: Licensed Tobacco Retailers in California ($n = 1277$), January–March 2017

	American Spirit (yellow)	Pall Mall (red)	Newport (menthol)	Marlboro (red)	Cheapest pack regardless of brand
n	914	776	1027	1141	1100
M (SD)	\$7.03 (0.66)	\$5.18 (0.77)	\$6.25 (0.76)	\$6.11 (0.66)	\$4.69 (1.03)
Relative price (American Spirit minus other brand)					
Mean difference (SD)		1.78 (0.70)	0.75 (0.60)	0.91 (0.51)	2.42 (0.86)
95% CI	—	(1.72 to 1.83)	(0.71 to 0.79)	(0.87 to 0.94)	(2.37 to 2.48)
t	—	65.78	36.06	53.05	83.19
df	—	679	848	899	873
p	—	<.001	<.001	<.001	<.001

Data were collected before \$2.00 cigarette tax increase in California. Price excludes sales tax.

Table 2. Estimated Price (Before Sales Tax) for Cigarettes, by Store Type and Neighborhood Demographics

Variable	M% (SD)	American Spirit (yellow; n = 913)	Pall Mall (red; n = 775)	Newport menthol (n = 1026)	Marlboro (red; n = 1140)	Cheapest pack (n = 1100)
		Coef. (95% CI)	Coef. (95% CI)	Coef. (95% CI)	Coef. (95% CI)	Coef. (95% CI)
Intercept		6.69 (6.52 to 6.87)	4.85 (4.66 to 5.04)	5.89 (5.71 to 6.08)	5.79 (5.62 to 5.96)	4.60 (4.35 to 4.85)
Race (non-Hispanic)/ethnicity (%)						
African American/Black	5.2 (7.4)	0.01 (-0.03 to 0.05)	0.03 (-0.03 to 0.09)	0.03 (-0.01 to 0.08)	0.05 (0.01 to 0.09)	0.05 (-0.01 to 0.11)
American Indian/Alaska Native	0.4 (1.1)	0.00 (-0.04 to 0.04)	0.14 (0.06 to 0.23)	0.04 (-0.02 to 0.09)	0.01 (-0.03 to 0.05)	-0.04 (-0.10 to 0.02)
Asian/Pacific Islander	11.5 (12.9)	-0.03 (-0.08 to 0.01)	-0.03 (-0.09 to 0.02)	-0.04 (-0.09 to 0.01)	-0.03 (-0.07 to 0.02)	-0.01 (-0.07 to 0.05)
Hispanic/Latino	40.9 (25.2)	0.02 (-0.04 to 0.08)	0.09 (0.01 to 0.16)	0.08 (0.01 to 0.14)	0.04 (-0.01 to 0.10)	0.12 (0.04 to 0.20)
Other	0.2 (0.4)	-0.004 (-0.05 to 0.04)	-0.04 (-0.09 to 0.02)	-0.04 (-0.08 to 0.01)	-0.04 (-0.08 to 0.00)	0.002 (-0.06 to 0.06)
Age (years) %						
5-17 years	16.9 (5.0)	-0.13 (-0.18 to -0.08)	-0.13 (-0.20 to -0.07)	-0.15 (-0.20 to -0.09)	-0.16 (-0.21 to -0.12)	-0.27 (-0.34 to -0.20)
18-24 years	10.4 (4.9)	-0.03 (-0.08 to 0.01)	-0.05 (-0.10 to 0.01)	-0.01 (-0.06 to 0.04)	-0.06 (-0.10 to -0.01)	-0.06 (-0.13 to -0.001)
Median household income	\$59 989 (\$24 575)	0.08 (0.03 to 0.13)	0.06 (-0.01 to 0.12)	0.12 (0.06 to 0.18)	0.04 (-0.01 to 0.08)	0.18 (0.10 to 0.25)
n (%)						
Store type (pharmacy = reference)						
Convenience store	544 (46.0)	0.30 (0.12 to 0.48)	0.18 (-0.02 to 0.38)	0.26 (0.07 to 0.45)	0.25 (0.08 to 0.43)	-0.06 (-0.33 to 0.21)
Liquor	164 (13.9)	0.31 (0.11 to 0.52)	0.33 (0.09 to 0.56)	0.33 (0.12 to 0.55)	0.36 (0.16 to 0.56)	-0.08 (-0.38 to 0.22)
Small market	150 (12.7)	0.46 (0.24 to 0.68)	0.41 (0.16, 0.65)	0.50 (0.27, 0.72)	0.48 (0.28, 0.68)	0.49 (0.19, 0.79)
Supermarket	107 (9.1)	0.94 (0.71, 1.17)	1.60 (1.34 to 1.87)	1.31 (1.07 to 1.55)	0.71 (0.50 to 0.92)	0.58 (0.27 to 0.89)
Tobacco or Vape Shop	88 (7.4)	0.01 (-0.21 to 0.23)	0.42 (0.17 to 0.67)	-0.01 (-0.24 to 0.23)	0.05 (-0.17 to 0.27)	-0.55 (-0.87 to -0.22)
Other	77 (6.5)	0.23 (-0.02 to 0.49)	0.53 (0.20 to 0.86)	0.53 (0.27 to 0.80)	0.48 (0.25 to 0.71)	0.90 (0.56 to 1.23)
Adjusted R ²	—	0.15	0.25	0.21	0.12	0.20

Coef. = coefficient; CI = confidence interval. Cell entries are unstandardized coefficients from ordinary least squares regression. Neighborhood demographics are an attribute of store-centered buffers, half-mile roadway, and are standardized. The sample roadway network could not be created for one store and this was not included in the final regression analyses. Price excludes sales tax. Bolded values are significant ($p < .05$).

determine whether the study findings generalize to markets other than California. Data were also collected before California's \$2 increase in cigarette excise tax that was implemented in April 2017 and how the tax increase affects overall and relative price of American Spirit is not yet known. Follow-up data are needed to examine how the manufacturers vary price shifts on ultra-premium and value-brand cigarettes in response to tax increases. Although very few listed prices were discounted (~4%), we were not able to account for other types of discounts (eg, discounts from buying in bulk or coupons sent directly from the manufacturer to smoker).

Another limitation pertains to identifying store neighborhoods with a higher proportion of AI/AN population. This priority population is unique in that its tribal lands and locations are often clustered in rural areas, which should be a focus of further research. AI/AN populations have also been under-represented in the US Census, which limits ability to count this population accurately.²⁹ Future studies should consider oversampling tobacco retailers closer to tribal lands and in areas where a higher portion of the population is AI/AN, as well as compare price of American Spirit by retailer proximity to tribal lands.

Conclusions

It is important for future research to consider how the ultra-premium price of American Spirit may contribute to misperceptions that the brand is safer than other cigarettes. American Spirit and Pall Mall are the only two brands that increased market share between 2009 and 2013,³⁰ even as cigarette smoking was declining in the United States. Examining relative price and variation by neighborhood demography may shed further light on brand popularity among population subgroups. Cheaper prices for American Spirit and other cigarette brands in pharmacies compared to other store types reinforces state and local tobacco control objectives to establish tobacco-free pharmacies, as well as for advocacy efforts to divert prescriptions to tobacco-free pharmacies.³¹ Even more concerning are lower prices of American Spirit and other cigarettes in neighborhoods with more youth, as evidence shows that lower prices encourage smoking use among this price-sensitive population and among racial/ethnic minorities.^{17,20,27} With previous research indicating that younger consumers perceive American Spirit to be less harmful than other cigarettes,^{2,3} the current study suggests a need for stronger regulation with respect to tobacco sales in stores near schools and/or colleges. The ultra-premium prices may exacerbate misperceptions that the brand is healthier and organic.¹⁴⁻¹⁶ Establishing a minimum price on cigarettes is recommended as a policy intervention to regulate the tobacco industry's use of price strategies as a marketing tool, which is relevant to American Spirit and other cigarette brands.

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Declaration of Interests

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