



Published in final edited form as:

*Tob Control*. 2014 September ; 23(5): 449–451. doi:10.1136/tobaccocontrol-2012-050719.

## Availability of snus and its sale to minors in a large Minnesota city

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### Abstract

**Introduction**—Previous studies examining tobacco retailers' compliance with youth tobacco access policies have mostly evaluated retailers' likelihood of selling cigarettes to minors, and none have evaluated the likelihood of selling snus (a new smokeless tobacco product) to minors. We assessed the availability of snus and the likelihood of selling snus to adolescents in tobacco retailers in a large city in Minnesota.

**Methods**—We randomly selected 71 eligible retailers located in a large city in Minnesota, and assessed the availability of snus through Camel snus retailer listings and phone inquiry. Purchase attempts by an underage buyer were used to assess the likelihood of selling snus to minors. Chi-square tests were used to examine the store and neighborhood characteristics associated with availability of snus.

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Competing Interests: None to report.

Contribution statement: All authors participated in conceptualizing and designing the study, collecting the data, conducting the analyses, and writing the article.

**Results**—We found that 31 retailers (43.7%) carried snus in the store, and four (12.9%) sold snus to the underage buyer. Retailers who sold gasoline were more likely to carry snus in the store ( $p<0.01$ ). Neighborhood demographic characteristics were not associated with availability of snus ( $p>0.10$ ).

**Conclusions**—Prevalence of snus sales to minors appeared to be higher than that of cigarette sales to minors according to the local compliance check data. Futures studies are needed to determine whether tobacco retailers are more likely to sell snus than cigarettes to minors. Interventions such as public and retailer policies are needed to reduce the likelihood of tobacco retailers selling snus to minors.

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## INTRODUCTION

Adolescent tobacco use remains prevalent, with 23.4% of 9<sup>th</sup>–12<sup>th</sup> graders reporting that they currently use some forms of tobacco in 2011 [1]. Although social sources of tobacco products are common for adolescents, particularly light tobacco users, commercial sources are important for adolescent heavy tobacco users. For example, Jansen and colleagues [2] found that 48% of adolescent heavy smokers (those who smoked >20 days in the past 30 days) obtained their last cigarette from commercial sources, while only 6% of adolescent light smokers (those who smoked  $\leq 20$  days in the past 30 days) obtained their last cigarette from commercial sources. Additionally, previous research showed that higher compliance with youth tobacco access policies was associated with lower prevalence of daily smoking among adolescents [3]. Therefore, monitoring compliance with youth tobacco access policies is an important first step to determine if interventions are needed to improve compliance.

To date, most of the studies evaluating tobacco retailers' compliance with these policies focused on sales of cigarettes to adolescents [4–6]. Snus, a new smokeless tobacco product, was introduced to the U.S. in 2006 by R.J. Reynolds, who test-marketed it in Oregon and Texas, and subsequently in more cities and states (including Minnesota), and snus became nationally available in 2009. Philip Morris USA test-marketed Taboka snus in 2006 in Indianapolis, but it was discontinued when Marlboro snus was introduced in 2008 and became nationally available in 2010. Tobacco companies also have intensively marketed the products: their expenditure on smokeless tobacco advertising jumped from about US\$30 million in 2008 to about US\$70 million in 2010. [7] Adolescents appear to have started experimenting with the product: a study of Texas adolescents found that 7.1% of 6<sup>th</sup>–12<sup>th</sup> graders reported ever using snus [8]. To provide preliminary data on this issue, we assessed the likelihood of tobacco retailers in a large city selling snus to adolescents. Additionally, we assessed the availability of snus by store type and neighborhood socio-demographic characteristics.

## METHODS

We obtained a list of tobacco retailers (including business name, address, and phone number) located in a large city in Minnesota through the city's licensing department. We excluded large grocery stores, tobacco stores, liquor stores, hotels, pharmacies, bars and restaurants because they are less likely to sell cigarettes to adolescents [9]. Of the 134

remaining retailers, we randomly selected 71 retailers (53.0%), and assessed whether they sold snus in their stores by first checking the Camel snus retailer listing for the area ([www.camelsnus.com](http://www.camelsnus.com)) and then phone inquiry of those not listed by Camel snus to assess if they sold snus (regardless the brand name). We contracted with the Association for Nonsmokers — Minnesota (ANSR), a nonprofit that assists many cities with conducting regular compliance checks, to assess the likelihood of these retailers to sell snus to adolescents. One underage buyer (male, non-smoker, non-Hispanic White, 17 years old) who was judged to appear under the age of 18 by a panel of adults was used to conduct the purchase attempts. We adapted the existing protocol for compliance checks used by ANSR and many cities [10]. An adult employee of ANSR drove the buyer to the selected stores, the buyer walked into the store with \$10 or less (provided by the adult employee), and attempted to purchase a tin of snus. The buyer was instructed to report his actual age and present his real ID if asked. Regardless of whether a sale was made, the buyer returned to the car and filled out a standardized data collection form.

We also contacted the 71 selected retailers through phone calls to determine if they sold gasoline because that was indicated as a predictor of sale to minors in a previous study [9]). Additionally, we geocoded these retailers, and linked each retailer with neighborhood characteristics at the census tract level using 2010 census data. We calculated the prevalence of the sale of snus to the underage buyer. We also analyzed the associations between carrying snus in the store and store characteristics (sold gas or not), and neighborhood socio-demographic characteristics (e.g., percent population under age 18, percent population between ages 18–29, percent White, median household income, and percent under poverty, in tertiles) using Chi-square tests.

## RESULTS

Of the 71 selected retailers, 31 (43.7%) carried snus in their stores. Of the 31 retailers who carried snus in their stores, 28 (90.3%) requested the underage buyer to show his ID and four (12.9%) sold to the underage buyer (one sale was made after the buyer presented an ID). Three out of the four sales to the underage buyer were from the same large chain of gas stations. Given the small number of sales made, we were not able to assess the store and neighborhood characteristics associated with sales. Regarding the availability of snus in stores, stores that sold gas were more likely to carry snus in their stores (Table 1,  $p < 0.01$ ). None of the neighborhood socio-demographic characteristics were significantly associated with availability of snus in the stores ( $p > 0.10$ , Table 1).

## DISCUSSION

Most evaluations of compliance with youth tobacco access policies only assess the likelihood of retailers selling cigarettes to minors. With the emergence of snus, a new smokeless tobacco product that has been shown to be tried by adolescents [8], it is unknown how likely tobacco retailers would be to comply with youth tobacco access policies when it comes to sales of snus. We found that, when conducting purchase attempts for snus in a large city in Minnesota, four (12.9%) of the sampled tobacco retailers sold snus to the underage buyer. This prevalence is higher than the Minnesota state-wide violation rate

(4.1%) stated in the Synar report 2011, [11] which was largely based on cigarette sales. This finding has practical implications for youth tobacco access policy compliance check protocols, because if the protocols require underage buyers to only attempt to purchase cigarettes, they may overestimate the prevalence of tobacco retailers' compliance with the policies.

Although the prevalence of illegal sale seems low, it is still unacceptable as these retailers are breaking the law and selling cancer-causing products to minors. Interventions to reach 100% compliance with youth access tobacco policies, such as regular compliance checks (four to six times a year), heavier fines for violation, and removal of the tobacco retailers' license may be effective in improving compliance with these ordinances [4]. It was an interesting finding that three of the four retailers who sold snus to the underage buyer were from the same large chain of gas stations. Upon further investigation, we found that this large chain of gas stations does not have an internal policy that rewards their staff if they pass a compliance check, while other large chains of gas stations that did not sell snus to the underage buyer do have policies that reward staff if they pass a compliance checks (sample size too small to perform any statistical comparison). This suggests that in addition to public policies, tobacco retailers themselves have the potential to adopt policies along with staff education that would increase their compliance with youth tobacco access policies.

One limitation of the study is that we are not directly comparing the likelihood of a tobacco retailer to sell snus against its likelihood to sell cigarettes to a minor. This limits our ability to conclude that tobacco retailers are more likely to sell snus than cigarettes to minors. Future studies need to perform snus and cigarette purchase attempts at the same set of retailers to further test this hypothesis. Another limitation is that our sample of tobacco retailers was drawn from a single city in Minnesota, so the generalizability of our findings is limited. Future studies involving tobacco retailers across the nation are necessary to determine the potential geographic variation of compliance with youth tobacco access policies by product. Our findings are also limited to a subset of tobacco retailers who met the inclusion criteria, and therefore future studies are needed to determine the potential variation of compliance with youth tobacco access policies by store types (e.g., grocery stores vs. tobacco shops vs. convenience stores).

In conclusion, in a sample of tobacco retailers from a large city in Minnesota, 43.7% carried Camel snus in their store, and of those who carried snus, 12.9% sold snus to the underage buyer. Future studies with larger sample sizes are needed to validate this finding and also to evaluate the compliance with youth tobacco access policies by product, geographic location, store type, and retailer perceptions of relative risk of snus. Nonetheless, interventions are still needed to improve compliance with youth tobacco access policies, and both public interventions (e.g., heavier fines for violation) and private interventions (e.g., rewarding staff who pass compliance checks) may be effective in achieving this goal.

## Acknowledgments

Funding statement: This work was supported by the National Cancer Institute (R01 CA86191; J. Forster, principal investigator).

## References

1. Centers for Disease Control and Prevention. Youth risk behavior surveillance - United States, 2011. *MMWR Morb Mortal Wkly Rep.* 2012; 61(SS04):1–162.
2. Jansen P, Toomey T, Nelson D, et al. Sources of cigarettes among adolescent smokers: free or purchased? *American Journal of Health Education.* 2011; 42(3):154–160.
3. DiFranza JR, Savageau JA, Fletcher KE. Enforcement of underage sales laws as a predictor of daily smoking among adolescents: a national study. *BMC Public Health.* 2009; 9:107. [PubMed: 19374735]
4. Stead LF, Lancaster T. Interventions for preventing tobacco sales to minors. *Cochrane Database Syst Rev.* 2005; (1):CD001497. [PubMed: 15674880]
5. Levinson AH, Hendershott S, Byers TE. The ID effect on youth access to cigarettes. *Tob Control.* 2002; 11(4):296–299. [PubMed: 12432154]
6. Boyle R, Stedman J, Forster JL. Availability of smokeless tobacco to underage youth in two Minnesota communities. *Health Values.* 1995; 19(5):10–16.
7. Kantar Media. Ad\$ponder database.
8. Loukas A, Batanova MD, Velazquez CE, et al. Who Uses Snus? A Study of Texas Adolescents. *Nicotine Tob Res.* 2011
9. Pearson DC, Song L, Valdez RB, et al. Youth tobacco sales in a metropolitan county: factors associated with compliance. *Am J Prev Med.* 2007; 33(2):91–97. [PubMed: 17673095]
10. The Association for Nonsmokers - Minnesota. North Suburban Tobacco Compliance Check Program. 2012.
11. Substance Abuse and Mental Health Services Administration. FFY 2011 Annual Synar Reports: Tobacco Sales to Youth. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2012.

### WHAT THIS PAPER ADDS

Most studies examining retailer compliance with youth tobacco access policies only assessed cigarette purchase attempts. Retailers' likelihood of selling snus, a new tobacco product, to youth is unknown. Through conducting snus purchase attempts with an underage buyer in a large Minnesota city, we found 12.9% of retailers who carried snus in their stores sold snus to our underage buyer. Future studies are needed to determine if compliance with youth tobacco access policies varies by tobacco products.

**Table 1**

Associations between store characteristics, neighborhood socio-demographic characteristics, and availability of snus in store.

Characteristics	Snus available in store		p-value
	Yes (n, %)	No (n, %)	
Store also sells gas			
Yes	27, 79.4%	7, 20.6%	<0.01
No	4, 10.8%	33, 89.2%	
Percent population who are White			
0–33 <sup>rd</sup> percentile	10, 43.5%	13, 56.5%	0.23
34 <sup>th</sup> –67 <sup>th</sup> percentile	8, 32.0%	17, 68.0%	
68 <sup>th</sup> –100 <sup>th</sup> percentile	13, 56.5%	10, 43.5%	
Median house value			
0–33 <sup>rd</sup> percentile	7, 35.0%	13, 65.0%	0.64
34 <sup>th</sup> –67 <sup>th</sup> percentile	12, 46.2%	14, 53.8%	
68 <sup>th</sup> –100 <sup>th</sup> percentile	12, 48.0%	13, 52.0%	
Percent population live under poverty			
0–33 <sup>rd</sup> percentile	9, 39.1%	14, 60.9%	0.73
34 <sup>th</sup> –67 <sup>th</sup> percentile	10, 41.7%	14, 58.3%	
68 <sup>th</sup> –100 <sup>th</sup> percentile	12, 50.0%	12, 50.0%	
Number of children (ages 5–17)			
0–33 <sup>rd</sup> percentile	12, 46.2%	14, 53.8%	0.11
34 <sup>th</sup> –67 <sup>th</sup> percentile	11, 61.1%	7, 38.9%	
68 <sup>th</sup> –100 <sup>th</sup> percentile	8, 29.6%	19, 70.4%	
Number of young adults (ages 18–29)			
0–33 <sup>rd</sup> percentile	8, 44.4%	10, 55.6%	0.93
34 <sup>th</sup> –67 <sup>th</sup> percentile	8, 47.1%	9, 52.9%	
68 <sup>th</sup> –100 <sup>th</sup> percentile	15, 41.7%	21, 58.3%	