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Alternative Tobacco Products as a Second Front in the War on Tobacco

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Abstract

JAMA PEDIATRICS—Associations Between Initial Water Pipe Tobacco Smoking and Snus Use and Subsequent Cigarette Smoking: Results From a Longitudinal Study of US Adolescents and Young Adults Samir Soneji, PhD; James D. Sargent, MD; Susanne E. Tanski, MD, MPH; Brian A. Primack, MD, PhD

IMPORTANCE—Many adolescents and young adults use alternative tobacco products, such as water pipes and snus, instead of cigarettes.

OBJECTIVE—To assess whether prior water pipe tobacco smoking and snus use among never smokers are risk factors for subsequent cigarette smoking.

DESIGN, SETTING, AND PARTICIPANTS—We conducted a 2-wave national longitudinal study in the United States among 2541 individuals aged 15 to 23 years old. At baseline (October 25, 2010, through June 11, 2011), we ascertained whether respondents had smoked cigarettes, smoked water pipe tobacco, or used snus. At the 2-year follow-up (October 27, 2012, through March 31, 2013), we determined whether baseline non-cigarette smokers had subsequently tried cigarette smoking, were current (past 30 days) cigarette smokers, or were high-intensity cigarette smokers. We fit multivariable logistic regression models among baseline non-cigarette smokers to assess whether baseline water pipe tobacco smoking and baseline snus use were associated with subsequent cigarette smoking initiation and current cigarette smoking, accounting for established sociodemographic and behavioral risk factors. We fit similarly specified multivariable ordinal logistic regression models to assess whether baseline water pipe tobacco smoking and baseline snus use were associated with high-intensity cigarette smoking at follow-up.

EXPOSURES—Water pipe tobacco smoking and the use of snus at baseline.

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MAIN OUTCOMES AND MEASURES—Among baseline non-cigarette smokers, cigarette smoking initiation, current (past 30 days) cigarette smoking at follow-up, and the intensity of cigarette smoking at follow-up.

RESULTS—Among 1596 respondents, 1048 had never smoked cigarettes at baseline, of whom 71 had smoked water pipe tobacco and 20 had used snus at baseline. At follow-up, accounting for behavioral and sociodemographic risk factors, baseline water pipe tobacco smoking and snus use were independently associated with cigarette smoking initiation (adjusted odds ratios: 2.56; 95% CI, 1.46–4.47 and 3.73; 95% CI, 1.43–9.76, respectively), current cigarette smoking (adjusted odds ratios: 2.48; 95% CI, 1.01–6.06 and 6.19; 95% CI, 1.86–20.56, respectively), and higher intensity of cigarette smoking (adjusted proportional odds ratios: 2.55; 95% CI, 1.48–4.38 and 4.45; 95% CI, 1.75–11.27, respectively).

CONCLUSIONS AND RELEVANCE—Water pipe tobacco smoking and the use of snus independently predicted the onset of cigarette smoking and current cigarette smoking at follow-up. Comprehensive Food and Drug Administration regulation of these tobacco products may limit their appeal to youth and curb the onset of cigarette smoking.

Tobacco use remains a pediatric disease because 9 of 10 smokers begin smoking before their 18th birthday.¹ Nearly half a million US citizens die prematurely each year from smoking-related diseases, with substantial economic consequences.¹ To address these continued problems, the Family Smoking Prevention and Tobacco Control Act was enacted in June 2009 and empowered the US Food and Drug Administration (FDA) to regulate the manufacture, sale, marketing, and distribution of tobacco products. Under the act, the FDA can restrict marketing and sales of tobacco products to youth, mandate reporting of ingredients and additives, ban cigarette flavorings, and review manufacturers' claims regarding allegedly lower-risk products.

The Tobacco Control Act marked a substantial advance to curb tobacco use among minors. Yet the FDA gained control only over cigarettes and smokeless tobacco products. Most alternative tobacco products (ATPs), including water pipe tobacco (ie, hookah or shisha) and e-cigarettes, were left unregulated. Others, like snus, a moist smokeless tobacco product popularized in Sweden for its alleged harm reduction, remain virtually unregulated.² While taxes, regulation, and educational efforts have contributed to further declines in adolescent cigarette smoking rates, use of the less-regulated ATPs continues to rise.¹ The increase in adolescent ATP use has occurred because of their widespread availability, lax regulation, targeted advertising, and perceptions that these products are relatively safe.³ Manufacturer claims of purported harm reduction with ATPs may be misleading but, given the current regulatory environment, remain unchecked. Results of observational research studies on the potential role for ATPs in harm reduction among adult cigarette smokers have been used, in effect, to promote their widespread availability, including to cigarette-naïve children.⁴ Manufacturers of ATPs have aggressively marketed their products to youth through product flavoring, promotional material, and the distribution of free samples. Such behaviors mirror the long-standing practices of tobacco companies with cigarettes, behaviors banned under the Tobacco Control Act.³

The relationship between ATPs and traditional cigarettes is of critical importance, yet it has been insufficiently explored. Alternative tobacco products might serve as gateway products for adolescents, leading to subsequent use of other tobacco products, including traditional cigarettes. If true, failure to regulate ATPs has the potential to undermine antitobacco regulatory efforts regarding minors.

Some ATPs may lead to subsequent cigarette use, as reported by Soneji and colleagues⁵ in the February 2015 issue of *JAMA Pediatrics*. In a national survey of 1596 young adults (15–23 years old), including 1048 who were cigarette-naïve at baseline, both baseline water pipe tobacco and snus use were associated with increased interim cigarette initiation, current cigarette smoking, and high-intensity cigarette smoking after a 2-year follow-up period. These relationships persisted after adjusting for sociodemographic and behavioral covariates, including measures of sensation seeking and individuals' other risk-taking behaviors. The authors estimated that baseline water pipe tobacco and snus use increased the odds of interim cigarette smoking initiation by 2.56 (95%CI, 1.46–4.47) and 3.73 (95%CI, 1.43–9.76), respectively, after accounting for other factors. Baseline water pipe tobacco use increased the odds of subsequent cigarette smoking by 2.48(95%CI, 1.01–6.06) as did use of snus (odds ratio, 6.19; 95%CI, 1.86–20.56).

Although the study was limited by the caveats of observational data analysis, the authors' robust findings provide a convincing link between use of the studied ATPs and subsequent cigarette use. A few specific limitations merit comment. The authors were unable to assess whether users of water pipe tobacco or snus had used other ATPs such as e-cigarettes. It remains plausible that use of another unmeasured ATP increased individuals' subsequent cigarette use and influenced the reported findings. In addition, Soneji and colleagues⁵ were unable to characterize the time between ATP use and cigarette use; near-concurrent cigarette initiation cannot then be fully excluded by the authors' study design.

Nonetheless, a plausible conclusion is that tobacco use leads to tobacco use. Use of ATPs likely increases the risk of both concurrent and subsequent use of any other tobacco product, including cigarettes. Half of US adolescent tobacco users are polytobacco users and individuals' tobacco use trajectories remain poorly characterized.⁶ Although much work is needed to help understand the increasing complexity of young adults' tobacco use trajectories in order to promote effective public health planning, these findings corroborate limited prior research suggesting that precollege ATP use increases subsequent cigarette use.⁷ That such findings conflict with prior studies on adults, as with the case in studies of Swedish adults that suggested no link between snus use and subsequent cigarette uptake,⁸ highlights the important difference between tobacco uptake in childhood and potential harm-reduction strategies in adults even when considering the same product.

The regulatory implications of the results by Soneji and colleagues⁵ have been underscored by recent developments. In April 2014, the FDA issued a proposed rule to extend its jurisdiction to include tobacco products not previously regulated by the FDA, including e-cigarettes, cigars, pipe tobacco, dissolvable and gel tobacco forms, and water pipe tobacco.⁹ Advocates have noted that the Tobacco Control Act enables the FDA to regulate snus more aggressively as well.² The results of the FDA's decision to "deem" these products as

qualifying under existing law and to regulate the marketing, sale, and manufacturing of such products would mark a substantial advance in US tobacco control efforts. The FDA is currently reviewing public comments on the proposed rule.

A second front in the war on tobacco has opened. As regulations on cigarette tobacco have tightened, adolescent cigarette use has decreased. Yet a burgeoning ATP problem may undermine those successes. Absent more stringent regulation, a robust market for such products has developed and ATPs have become widely available to adolescents. Adolescents are increasingly using these products, and such use is not experimentation but the beginnings of an addiction that can lead to later cigarette use.

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