



Letter

Smoke Shop Misclassification May Cloud Studies on Vape Shop Density

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“Vape shops,” retailers that specialize in the sale of electronic nicotine delivery systems (ENDS), generate over a third of the U.S. vapor market’s total revenue.¹ These retailers differ from traditional tobacco outlets that sell e-cigarettes (eg, convenience stores, drug stores) in several important ways. They typically offer a wider selection of advanced ENDS products, often allow customers to taste “e-liquids” before making a purchase, and sometimes provide spaces where patrons can vape and socialize.² Perhaps most importantly, vape shops do not usually carry tobacco products and they advocate the use of vapor products for tobacco cessation.³ Vape shop employees are able to counsel customers on product selection, device assembly, e-liquid content, and product safety in a way that cashiers in other retail locations may not. The uniqueness and novelty of the vape shop environment has spawned interest among tobacco control researchers in locating and quantifying these retailers.

In a recent article published in *Nicotine & Tobacco Research*, Dai, Hao, and Catley used systematic online searches to identify and geocode vape shop locations in the United States.⁴ The authors found that vape shop density was highest in urban areas with larger proportions of Hispanic and Asian residents, and in non-urban areas with larger proportions of Hispanic and African American residents. These findings directly contradict a similar study in New Jersey, which documented a negative relationship between vape shop locations and a census tract’s proportion of Hispanic and African American residents.⁵ Dai et al. suggested that differences in the studies’ geographies may explain the divergent results; however, a more plausible explanation is a confounding factor not addressed in the national study: the sale of tobacco products in purported “vape shops.”

In recent years, outlets specializing in tobacco and other drug paraphernalia (ie, “smoke shops,” “head shops”) have begun to carry a variety of vaping products in addition to their usual inventory of smoking products and accessories, such as hookah tobacco and pipes, blunt wraps, cigarillos, and bongos.⁶ These retailers, which often market themselves as “smoke and vape shops,” are generally rejected by vaping purists and advocacy groups, who maintain that ENDS should be used for and are effective at helping smokers quit.³ Indeed, the side-by-side promotion of vaping products and

combustible tobacco obscures messages about the use of ENDS for smoking cessation.

Dai et al. used *Yelp*, a popular business review site, as one of the tools to identify vape shops in their study.⁴ As they and others correctly acknowledge, *Yelp* is the most popular way that vape shops advertise their businesses and the site remains the best method for researchers to locate these retailers in the absence of licensing lists.^{5,7} A major limitation of *Yelp* and similar sites, however, is the way in which businesses are able to self-classify. For example, the smoke shops and head shops described above are able to designate their business a “vape shop,” “head shop,” “tobacco shop,” or any combination of categories. As a result, tobacco retailers that also sell ENDS are undoubtedly captured when using “vape shop” as a search term.

To evaluate the potential extent of this problem, all vape shops in New York City were identified using identical search criteria described in the Dai et al. study.⁴ Specifically, *Yelp*, yellowpages.com, and guidetovaping.com were systematically searched using the terms “vape shop,” “electronic cigarettes,” and their variants, such as “vapor” and “e-cig.” Once duplicates were removed, each vape shop was assessed for the availability of tobacco and smoking products. This information was often available on the business listing page or the store’s Web site, but retailers were contacted via telephone or visited in person if it was unclear whether or not they carried tobacco products. A total of 198 unique “vape shops” were initially identified, but over half (55.6%, $n = 110$) were, more accurately, smoke shops, head shops, or tobacco shops that also carried vaping products. The prevalence of these “false positive” vape shops ranged from 25% ($n = 5$) in the borough of Staten Island to 71.2% ($n = 52$) in Manhattan. Some of these retailers had an extensive collection of ENDS, but in others, ENDS constituted a small portion of the total tobacco and smoking-related inventory. Moreover, store names often communicated the availability of tobacco products in addition to vaping devices. Examples include Graham Vape & Cigar, Lula Vapes & Hookahs, and PUR Vape & Smoke Shop.

In large-scale, national studies on vape shop density, it may not be feasible to assess whether tobacco is sold in the thousands of identified vape shops. Ignoring this attribute, however, may severely impact the research findings. It is well-documented that tobacco retailer density

is disproportionately high in minority communities, particularly in neighborhoods where a large proportion of the population is African American or Hispanic.⁸ Given the demonstrated misclassification of smoke shops as vape shops in online directories, Dai et al.'s finding that vape shops are concentrated in minority neighborhoods is unsurprising. Conversely, when tobacco retailers are excluded, as they were in the NJ-based study,⁵ vape shops appear to be located in communities that are predominantly White. This spatial pattern is consistent with epidemiological data documenting the highest rates of established vaping among White men, and extremely low rates among African Americans.⁹

There is an urgent need to document ENDS availability in communities, regardless of retailer type, but we must also recognize that vape shops are philosophically different than smoke shops and other traditional tobacco retailers that sell ENDS. Certainly, not all vape shops actively promote smoking cessation, but the absence of tobacco products is an important feature to consider. Future research studies should make this distinction to control for the confounding effect of tobacco promotion and accurately assess the relationship between the ENDS retail environment and health behaviors. Dai et al. express concern that vape shops may be "targeting" minority neighborhoods, but perhaps more troubling is that, despite the availability of lower risk products, minority communities continue to be overexposed to retailers that sell combustible tobacco, including those "disguised" as vape shops.

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Declaration of Interests

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