Johns Hopkins Bloomberg School of Public Health | Institute for Global Tobacco Control

The Union — International Union Against Tuberculosis and Lung Disease — Health solutions for the poor

Tobacco Vendor Density and Tobacco Vendor Proximity to Educational Institutions in Ranchi City, India

Background

In India, the Cigarettes and Other Tobacco Products Act (COTPA, 2003) restricts tobacco advertising and product display at the point-of-sale (POS). COTPA further prohibits tobacco promotions at POS and requires vendors to display the appropriate warning signage to limit minors from accessing tobacco products.[1] The local government in Ranchi is implementing policies to strengthen enforcement of COTPA through the Tobacco Vendor Licensing (Ranchi Municipal Corporation memo Order number 284/ Health, 2018).

This study conducted a census of all tobacco vendors across three wards in Ranchi (2, 29 and 51) between November 2019 and January 2020, assessing the density of these vendors and their proximity to educational institutions.

Key Findings

- A total of **559 tobacco vendors** were present in the three wards surveyed (range 92 to 327)
- Vendor density was **very high with 68 tobacco vendors/km²** across the three wards
- The **highest tobacco vendor density was observed in ward no.29,** with 195 vendors/km² [11 vendors/km of road]
- **The most common vendor type was an independent store/ supermarket at 58% (n=325).** Approximately 20% of vendors (n=113) were temporary kiosks or street vendors
- **99% (n=554) of stores sold food items (such as candies, sweets, chips etc.) in addition to tobacco**
- **19% (n=105) of vendors observed were operating within 100-yards of a school**
- On average there were **4 tobacco vendors operating within 100-yards of each school (range 0-27)**

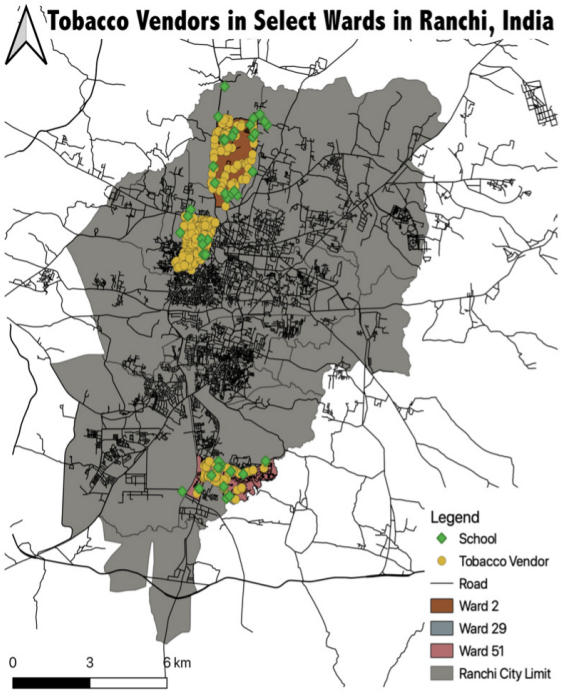

Figure 2: Percentage of tobacco vendors by vendor-type

Figure 1: A permanent kiosk selling tobacco products in Ranchi

Table 1. Percent reduction in vendor density if all vendors within 100-yards of educational institutions and all remaining temporary vendors (temporary kiosks, street vendors) were removed as per licensing policy and COTPA

Ward	Ward Area (km^2)	Total Vendors	Overall Vendor Density (vendors/km^2)	Total Permanent Vendors outside 100-yards of school boundaries	Permanent Vendor Density (vendors/km^2)	Percent Reduction in Density
2	3.79	140	36.9	65	17.1	54%
29	1.68	327	195.1	236	140.8	28%
51	2.68	92	34.3	53	19.8	42%
Overall	**8.15**	**559**	**68.6**	**354**	**43.5**	**37%**

Discussion

There is very high tobacco vendor density in Ranchi with 68 tobacco vendors/km^2 (range 34 to 195). By comparison, New York City has approximately 10 tobacco vendors/km^2. Whilst the total number of vendors in Ranchi is unknown, based on the population of the three wards it can be estimated that over 9,000 vendors are selling tobacco in the city.[2] In contrast, New York City has only 7010 vendors for a population of 8.3 million.[3]

This study identified 105 vendors selling tobacco within 100 yards of schools; if all these vendors stopped selling tobacco, as per Section 6a of COTPA (prohibition of sale to and by minors), this would result in an estimated 19% reduction in density. By also restricting sales to only permanent and semi-permanent structures, density would be reduced by approximately 37% as shown in Table 1.

The findings of this study suggest the need for enhanced enforcement of COTPA with regards to selling tobacco near educational institutions, and for tobacco vendors to be informed of the city's licensing law. There is an opportunity for Ranchi to reduce vendor density by restricting licenses to permanent and semi-permanent retailers only. Tobacco control studies conducted around the world have demonstrated that the presence and density of tobacco retailers around schools and in neighborhoods is directly associated with smoking behavior, tobacco use and initiation, and with the notion that smoking is common and acceptable.[4,5,6] In addition to fully implementing and enforcing the licensing law, Ranchi government could consider further restrictions including limiting the number of licenses available by area or by population.

Methods

Johns Hopkins Bloomberg School of Public Health's Institute for Global Tobacco Control, with partners from the International Union Against Tuberculosis and Lung Disease and the Postgraduate Institute of Medical Education and Research Chandigarh India, conducted an observational study in Ranchi from November 2019 to January 2020 to assess the density and location of tobacco vendors in three of the city's wards. The study further observed whether tobacco vendors were situated near educational institutions. Trained data collectors conducted a census of all tobacco vendors operating in Wards 2, 29, and 51 by traversing all roads in each ward. These wards were selected based on a diversity of demographic features, and the presence of retail activity, schools, and public amenities such as parks. The locations of vendors and schools were recorded using a mobile data collection app and mapped using GIS software.

[1] Ministry of Health and Family Welfare Notification S.O 2814(E), November 28, 2008. Retrieved from https://www.tobaccocontrollaws.org/files/live/India/India%20-%pdf

[2] Ranchi District Gazette Notification. Regional Election Area (Ward) information. Gazatte no 18, Memo No 3150 (ii) Date 30.10.10 / Notification No 3145(ii). District Magistrate Additional District Election Office Ranchi

[3] Tobacco Retailer Density Fact Sheet for New York City, NY (May, 2020), Advancing Science & Practice in the Retail Environment (ASPIRE, aspirecenter.org), funded by the National Cancer Institute #P01-CA225597

[4] Novak SP, Reardon SF, Raudenbush SW, et al. Retail tobacco outlet density and youth cigarette smoking: a propensity-modeling approach. Am J Public Health 2006;96:670–6

[5] Leatherdale ST, Strath JM. Tobacco retailer density surrounding schools and cigarette access behaviors among underage smoking students. Ann Behav Med. 2007;33(1):105-111. doi:10.1207/s15324796abm3301_12.

[6] Schleicher NC, Johnson T, Fortmann S, Henriksen L. Tobacco outlet density near home and school: Associations with smoking and norms among US teens. Prev Med. 2016;91:287-293. doi:10.1016