

Prevalence and Branding of Tobacco and Nicotine Litter in Urban Outdoor Environments

Background

Tobacco/nicotine litter results in post-consumption marketing, environmental costs, and health risks. This pilot explored tobacco litter near schools and other outdoor environments in five districts of Guangzhou, China.

Methods

In 2024, data collectors followed a 250-meter walking protocol to observe tobacco/nicotine litter (cigarette butts/packs, e-cigarettes), noting visible branding:

- 20 schools (10 each: elementary and middle/high schools)
 - Timepoints:
 - 12 p.m. and 5 p.m. (Week 1)
 - 8 a.m. and 5 p.m. (Week 2)
- 10 other environments (two each: government buildings, offices, recreational areas, residential areas, transportation hubs)
 - Timepoints:
 - Morning (8 a.m.–12 p.m.)
 - Afternoon (12–4 p.m.)
 - Evening (4–8 p.m.)
- Half the sample observed in Week 1 and half observed in Week 2
- Tobacco/nicotine litter prevalence was measured by average number of pieces of litter per visit

Cigarette butt litter prevalence was higher near **schools** and **transit hubs** compared to other outdoor environments



Results

- No e-cigarette litter was observed
- Schools' average number of butts observed, per visit:
 - **Middle schools:** 27
 - **High schools:** 22
 - **Elementary schools:** 19
 - **Overall:** 22
- Other environments' average number of butts observed, per visit:
 - **Transportation hubs:** 23
 - **Recreation areas:** 20
 - **Residential areas:** 19
 - **Offices:** 17
 - **Government buildings:** 15
 - **Overall:** 19
- Shuangxi, Golden Leaf, and Liqun were among the most common brands observed on butts

Conclusion

Cigarette butts were found and no e-cigarette litter was observed. Policy implications include adopting plain packaging to reduce post-consumer marketing and improving tobacco waste disposal. An upcoming, multicity study will focus on cigarette butt/pack litter around schools, transportation hubs, recreation areas, and residential areas.

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This work was supported with funding from Bloomberg Philanthropies' Bloomberg Initiative to Reduce Tobacco Use (bloomberg.org).

The work being presented has received funding or other means of support from any of the following sources:

Any of the authors have received funding (including consultancy) from any of the following sources in the past 5 years:

	Tobacco industry	E-cigarette & nicotine product industry	Pharma industry
The work being presented has received funding or other means of support from any of the following sources:	NO	NO	NO
Any of the authors have received funding (including consultancy) from any of the following sources in the past 5 years:	NO	NO	NO

Competing Interests: Dr. Cohen was a paid consultant in litigation against a tobacco company.