

Preplanned Studies

Secondhand Smoke Exposure Across Five Campus Settings and Its Association with Smoke-Free Policy Implementation Among Chinese College Students — China, 2025

Xinying Zeng¹; Shiwei Liu¹; Mingxin Qi¹; Ying Liu¹; Lin Xiao^{1,†}

Summary

What is already known about this topic?

Secondhand smoke (SHS) exposure remains a significant public health concern among college students, even where smoke-free campus policies are in place.

What is added by this report?

This report documented SHS exposure across five campus settings among Chinese college students in 2025, revealing substantial variation in prevalence by setting. School-level factors — particularly the comprehensiveness of smoke-free policies and teachers' smoking behavior on campus — were more strongly associated with student exposure than the broader tobacco-control environment.

What are the implications for public health practice?

Colleges should strengthen comprehensive smoke-free policy implementation, as has been achieved in primary and secondary schools, to reduce student SHS exposure.

ABSTRACT

Introduction: Secondhand smoke (SHS) exposure remains a major public health concern among college students in China. This study characterized SHS exposure across five campus settings among Chinese college students and examined whether campus-level indicators of policy implementation were associated with setting-specific exposure.

Methods: Using data from the 2025 National Survey on Tobacco Use among Chinese College Students, this study estimated the prevalence of SHS exposure with 95% confidence intervals (CIs) across five campus settings. Multilevel multivariable logistic regression models assessed associations of school smoking restrictions, observed teacher smoking on campus, and provincial adult SHS exposure with

setting-specific SHS exposure.

Results: In 2025, the prevalence of SHS exposure was highest in dormitory buildings (31.5%), followed by teaching buildings (26.8%) and playgrounds (25.8%), and lowest in administrative buildings (13.3%) and canteens (10.3%). Students who reported partial, absent, or unclear school smoking restrictions, as well as those who observed teachers smoking on campus, had higher SHS exposure across all settings. Provincial adult SHS exposure showed no significant association with setting-specific SHS exposure.

Conclusions: Despite progress in establishing smoke-free primary and secondary schools, SHS exposure remains prevalent across college campus settings. Comprehensive smoke-free policies, enhanced teacher management, and routine enforcement may help reduce SHS exposure in college settings.

College students occupy a critical transitional stage between adolescence and adulthood during which health behaviors and social norms take shape. Campuses — encompassing academic, residential, and recreational environments — represent key settings for tobacco control. Although smoke-free campus policies have been widely promoted across China and substantial progress has been achieved in smoke-free primary and secondary schools (*1–2*), evidence on secondhand smoke (SHS) exposure across specific campus settings among Chinese college students remains limited (*3–4*). This study characterizes SHS exposure in five campus environments (administrative buildings, teaching buildings, dormitory buildings, canteens, and playgrounds) and examines its associations with indicators of smoke-free policy implementation. Provincial adult SHS exposure levels were also incorporated as a contextual reference to assess whether campus-level factors operate independently of the broader tobacco-control

environment.

The 2025 National Survey on Tobacco Use among Chinese College Students employed a three-stage stratified cluster sampling design covering all 31 provincial-level administrative divisions (PLADs). The target population comprised students enrolled in the public higher education system, excluding those in adult education, postgraduate programs, and continuing education. In the first stage, all colleges in China were stratified into three types: central ministry-affiliated colleges or colleges co-sponsored by provincial and central ministries (CCMCs/CCPMs), provincial colleges (PCs), and higher vocational colleges (HVCs). Based on their national composition, 217 colleges were selected nationwide: 13 CCMCs/CCPMs, 82 PCs, and 122 HVCs. In the second stage, 7 colleges were selected from each PLAD; the number drawn from each type was proportional to the local distribution of the three college types, and colleges were randomly sampled within each type. In the third stage, 6 classes per grade in undergraduate institutions and 8 classes per grade in HVCs were randomly selected, with a minimum of 40 students per class; all students in selected classes were surveyed. Data were collected via a self-administered structured tablet-based questionnaire incorporating built-in logic checks and missing-value validation. Provincial supervisors randomly reviewed one sampled class from each grade in each college; surveys with a consistency rate below 90% were re-administered.

The survey assessed setting-specific smoking occurrence and smoke-free campus policy implementation. SHS exposure across campus settings was operationalized as whether anyone, including the respondent, had smoked in any of five campus settings during the past 30 days. Five binary outcomes were constructed for administrative buildings, teaching buildings, dormitory buildings, canteens, and playgrounds. Because these outcomes were intended to reflect smoking occurrence and smoke-free policy implementation at campus locations, all respondents — both smokers and non-smokers — were included. The primary policy indicators included self-reported school smoking restrictions (comprehensive restrictions, partial restrictions, no restrictions, or do not know) and whether teachers had been observed smoking on campus in the past 30 days (almost every day, sometimes, or never); responses of "almost every day" and "sometimes" were combined and coded as yes. Knowledge of SHS harms was scored from 0 to 3 based on awareness that SHS causes adult heart disease,

children's lung disease, and adult lung cancer, then classified as low (0–1 point), moderate (2 points), or high (3 points). Provincial adult SHS exposure rates derived from the 2024 China National Adult Tobacco Survey (5) served as a province-level contextual indicator of the broader tobacco-control environment, linked to student records by province and categorized into tertiles (low, medium, and high).

Sampling weights were applied to generate nationally representative estimates. Weighted descriptive analyses calculated the sample distribution and the prevalence of SHS exposure in each campus setting, both overall and by selected characteristics, with 95% confidence intervals (CIs). The proportion of students who reported seeing teachers smoking on campus in the past 30 days (almost every day or sometimes) was calculated separately by indoor and outdoor campus smoking restrictions. Multilevel multivariable logistic regression models were fitted separately for each campus setting to examine associations between SHS exposure and both school smoking restrictions and observed teacher smoking on campus. Models adjusted for school type, region, sex, current smoking status, knowledge of SHS harms, and provincial tertiles of adult SHS exposure. Adjusted odds ratios (aORs) with 95% CIs were estimated. Statistical significance was defined as a two-sided $P < 0.05$. All analyses were conducted using SAS (version 9.4; SAS Institute Inc., Cary, NC, USA).

A total of 265,930 college students were included, yielding a response rate of 96.0%. Of these, 51.0% were male. Students attended three types of schools: CCMCs/CCPMs (4.2%), PCs (49.3%), and HVCs (46.5%), with a regional distribution of eastern (40.3%), central (30.0%), and western China (29.7%). Regarding school smoking restrictions, 61.7% reported comprehensive indoor restrictions and 24.1% did not know the policy; corresponding proportions for outdoor restrictions were 31.1% and 32.5%, respectively. Overall, 29.7% reported seeing teachers smoking on campus in the past 30 days; this proportion was 25.2% under comprehensive indoor restrictions and 20.7% under comprehensive outdoor restrictions (Table 1, Figure 1).

SHS exposure was reported across all five campus settings in 2025. Prevalence varied considerably by setting: the highest exposure was observed in dormitory buildings (31.5%), followed by teaching buildings (26.8%) and playgrounds (25.8%), with the lowest rates in administrative buildings (13.3%) and canteens (10.3%) ($P < 0.05$). The 95% CIs for each prevalence

TABLE 1. Weighted distribution of study participants and setting-specific secondhand smoke exposure across campus and contextual characteristics among Chinese college students — China, 2025.

Characteristics	N (weighted %)	Weighted % (95% CI)				
		Administrative buildings	Teaching buildings	Dormitory buildings	Canteens	Playgrounds
Total	265,930 (100.0)	13.3 (12.5, 14.1)	26.8 (25.4, 28.2)	31.5 (30.0, 33.0)	10.3 (9.6, 10.9)	25.8 (24.4, 27.2)
Sex						
Male	125,676 (51.0)	13.1 (12.2, 13.9)	25.2 (23.6, 26.8)	40.6 (38.5, 42.8)	9.2 (8.6, 9.7)	25.4 (23.8, 26.9)
Female	140,254 (49.0)	13.5 (12.6, 14.4)	28.5 (27.0, 30.0)	22.1 (20.9, 23.4)	11.3 (10.5, 12.2)	26.2 (24.7, 27.7)
School type						
CCMC/CCPM	16,196 (4.2)	11.9 (10.2, 13.7)	26.7 (22.5, 31.0)	32.9 (29.4, 36.3)	9.7 (8.5, 10.8)	26.9 (24.4, 29.5)
PC	105,750 (49.3)	14.7 (13.5, 16.0)	31.6 (29.6, 33.7)	35.4 (33.3, 37.5)	11.7 (10.7, 12.7)	30.0 (28.2, 31.7)
HVC	143,984 (46.5)	11.8 (10.9, 12.8)	21.6 (19.8, 23.5)	27.2 (25.1, 29.2)	8.7 (8.0, 9.5)	21.2 (19.1, 23.2)
Region						
Eastern	94,246 (40.3)	11.7 (10.8, 12.7)	24.4 (22.0, 26.7)	28.4 (26.0, 30.8)	9.3 (8.6, 10.1)	23.5 (21.2, 25.7)
Central	70,921 (30.0)	14.4 (12.9, 15.9)	27.6 (25.5, 29.8)	31.8 (28.8, 34.8)	11.4 (10.0, 12.8)	27.0 (24.7, 29.4)
Western	100,763 (29.7)	14.3 (12.8, 15.7)	29.3 (26.8, 31.8)	35.4 (33.2, 37.6)	10.3 (9.1, 11.6)	27.7 (25.2, 30.1)
School smoking restrictions (Indoor)						
Comprehensive restrictions	169,766 (61.7)	11.5 (10.7, 12.2)	23.7 (22.2, 25.1)	28.6 (27.1, 30.1)	8.4 (7.9, 9.0)	—
Partial restrictions	31,979 (12.9)	20.0 (18.9, 21.1)	41.8 (40.0, 43.6)	48.3 (46.4, 50.2)	16.0 (15.1, 17.0)	—
No restrictions	3,682 (1.4)	41.8 (39.0, 44.7)	58.9 (56.0, 61.7)	55.6 (52.8, 58.4)	35.8 (33.2, 38.4)	—
Do not know	60,503 (24.1)	12.6 (11.7, 13.6)	24.9 (23.6, 26.3)	28.4 (27.0, 29.7)	10.3 (9.7, 11.0)	—
School smoking restrictions (Outdoor)						
Comprehensive restrictions	92,209 (31.1)	—	—	—	—	17.4 (15.9, 18.9)
Partial restrictions	76,094 (30.1)	—	—	—	—	31.1 (29.7, 32.5)
No restrictions	16,417 (6.4)	—	—	—	—	51.6 (49.8, 53.4)
Do not know	81,210 (32.5)	—	—	—	—	23.6 (22.4, 24.9)
Seeing teachers smoking on campus						
Yes	56,296 (29.7)	30.4 (29.0, 31.8)	50.5 (48.9, 52.1)	53.3 (51.8, 54.9)	24.2 (23.1, 25.2)	48.8 (47.2, 50.4)
No	132,414 (70.3)	7.7 (7.2, 8.3)	19.8 (18.3, 21.3)	25.6 (24.0, 27.3)	5.7 (5.2, 6.2)	18.9 (17.5, 20.3)
Provincial adult SHS exposure tertiles						
Low	86,220 (31.3)	11.9 (10.6, 13.2)	24.9 (22.1, 27.6)	29.5 (26.2, 32.8)	9.2 (8.2, 10.1)	24.8 (21.8, 27.7)
Medium	101,698 (36.7)	13.6 (12.6, 14.7)	26.6 (24.5, 28.7)	32.7 (30.2, 35.2)	10.2 (8.9, 11.4)	26.5 (24.4, 28.5)
High	78,012 (31.9)	14.2 (12.6, 15.8)	29.0 (26.5, 31.5)	32.1 (30.2, 34.0)	11.4 (10.4, 12.4)	26.0 (23.8, 28.1)

Note: “—” means not applicable. Estimates are presented only for the school smoking restriction type relevant to each setting: indoor restrictions for indoor venues, including administrative buildings, teaching buildings, dormitory buildings, and canteens, and outdoor restrictions were used for playgrounds.

Abbreviation: CCMC/CCPM=central ministry-affiliated college or college co-sponsored by provincial and central ministries; PC=provincial college; HVC=higher vocational college; SHS=secondhand smoke; CI=confidence interval.

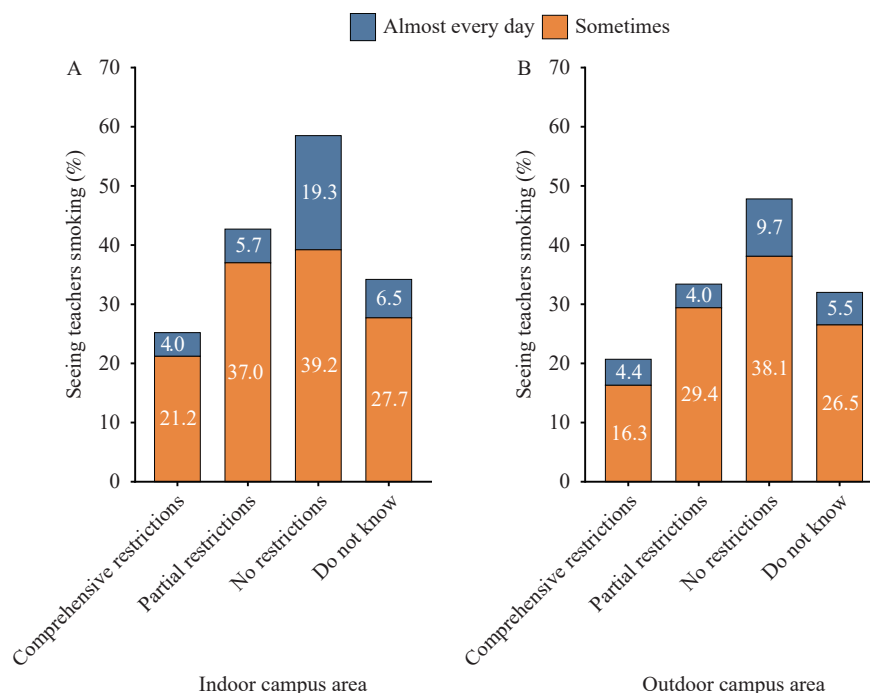


FIGURE 1. Proportion of college students reporting that they had seen teachers smoking on campus in the past 30 days, by (A) indoor and (B) outdoor campus smoking restrictions.

estimate are presented in Table 1. This pattern indicates that campus SHS exposure is setting-specific rather than uniformly distributed.

Even among students who reported comprehensive smoking restrictions at their school, SHS exposure persisted across all five campus settings — particularly in dormitory buildings (28.6%), teaching buildings (23.7%), and playgrounds (17.4%) — suggesting substantial enforcement gaps. Students who reported partial restrictions, no restrictions, or unclear restrictions consistently exhibited higher SHS exposure across all settings compared with those reporting comprehensive restrictions. For instance, among students reporting no smoking restrictions, SHS exposure in teaching buildings, dormitory buildings, and playgrounds reached 58.9%, 55.6%, and 51.6%, respectively. Students who reported seeing teachers smoking on campus also demonstrated consistently higher SHS exposure than those who did not (administrative buildings: 30.4% *vs.* 7.7%; teaching buildings: 50.5% *vs.* 19.8%; dormitory buildings: 53.3% *vs.* 25.6%; canteens: 24.2% *vs.* 5.7%; playgrounds: 48.8% *vs.* 18.9%) ($P < 0.05$). The prevalence of SHS exposure across the five campus settings was broadly similar across tertiles of provincial adult SHS exposure ($P > 0.05$). The 95% CIs for each prevalence estimate are presented in Table 1.

Table 2 presents the associations between setting-

specific SHS exposure and indicators of school smoke-free policy implementation, as well as provincial adult SHS exposure, estimated using two-level (province and student) multivariable logistic regression models. Both school smoking restrictions and observed teacher smoking on campus were significantly associated with SHS exposure across all five settings. Compared with comprehensive restrictions, partial restrictions, absent restrictions, and unclear restrictions were each associated with increased odds of SHS exposure in administrative buildings (aOR=1.67, 3.82, and 1.36, respectively), teaching buildings (aOR=1.99, 3.19, and 1.27, respectively), dormitory buildings (aOR=2.03, 2.56, and 1.19, respectively), canteens (aOR=1.73, 4.22, and 1.45, respectively), and playgrounds (aOR=1.86, 3.94, and 1.62, respectively) ($P < 0.05$). Observing teachers smoking on campus was consistently associated with elevated odds of SHS exposure across all settings: administrative buildings (aOR=4.66), teaching buildings (aOR=3.60), dormitory buildings (aOR=2.89), canteens (aOR=4.66), and playgrounds (aOR=3.53) ($P < 0.05$). In contrast, provincial adult SHS exposure tertiles showed no significant association with SHS exposure in any of the five campus settings after adjustment ($P > 0.05$). The 95% CIs for each aOR estimate are presented in Table 2.

TABLE 2. Adjusted associations of campus smoke-free policy implementation indicators and provincial adult SHS exposure with setting-specific secondhand smoke exposure among Chinese college students — China, 2025.

Variables	Administrative buildings	Teaching buildings	Dormitory buildings	Canteens	Playgrounds
School smoking restrictions (Ref: Comprehensive restrictions)	1.00	1.00	1.00	1.00	1.00
Partial restrictions	1.67 (1.60, 1.73)	1.99 (1.93, 2.05)	2.03 (1.97, 2.10)	1.73 (1.67, 1.80)	1.86 (1.82, 1.92)
No restrictions	3.82 (3.53, 4.18)	3.19 (2.94, 3.49)	2.56 (2.36, 2.77)	4.22 (3.86, 4.57)	3.94 (3.74, 4.10)
Do not know	1.36 (1.31, 1.42)	1.27 (1.23, 1.31)	1.19 (1.15, 1.22)	1.45 (1.39, 1.51)	1.62 (1.57, 1.67)
Seeing teachers smoking on campus (Ref: No)	1.00	1.00	1.00	1.00	1.00
Yes	4.66 (4.53, 4.81)	3.60 (3.53, 3.71)	2.89 (2.83, 2.97)	4.66 (4.53, 4.85)	3.53 (3.42, 3.60)
Provincial adult SHS exposure tertiles (Ref: Low)	1.00	1.00	1.00	1.00	1.00
Medium	1.17 (0.98, 1.40)	1.13 (0.91, 1.39)	1.16 (0.95, 1.42)	1.02 (0.78, 1.32)	1.02 (0.80, 1.31)
High	1.13 (0.93, 1.38)	1.22 (0.98, 1.54)	1.21 (0.98, 1.51)	1.14 (0.86, 1.52)	1.08 (0.84, 1.40)
Sex (Ref: Male)	1.00	1.00	1.00	1.00	1.00
Female	1.00 (0.97, 1.03)	1.13 (1.11, 1.15)	0.43 (0.42, 0.44)	1.22 (1.19, 1.26)	1.03 (1.01, 1.05)
School type (Ref: CCMC/CCPM)	1.00	1.00	1.00	1.00	1.00
PC	1.52 (1.42, 1.62)	1.46 (1.39, 1.54)	1.26 (1.20, 1.32)	1.31 (1.22, 1.42)	1.34 (1.27, 1.40)
HVC	1.30 (1.21, 1.39)	0.89 (0.84, 0.93)	0.88 (0.84, 0.92)	1.15 (1.06, 1.23)	1.02 (0.96, 1.07)
Region (Ref: Eastern)	1.00	1.00	1.00	1.00	1.00
Central	1.01 (0.83, 1.22)	1.05 (0.84, 1.32)	1.07 (0.87, 1.34)	1.08 (0.82, 1.45)	1.15 (0.89, 1.49)
Western	0.91 (0.76, 1.08)	1.00 (0.82, 1.22)	1.03 (0.84, 1.25)	0.90 (0.69, 1.16)	1.16 (0.92, 1.46)
Current smoking status (Ref: No)	1.00	1.00	1.00	1.00	1.00
Yes	1.01 (0.96, 1.06)	1.22 (1.17, 1.27)	2.20 (2.14, 2.29)	0.90 (0.84, 0.95)	1.57 (1.51, 1.63)
Awareness of SHS harms (Ref: Low)	1.00	1.00	1.00	1.00	1.00
Moderate	1.13 (1.06, 1.19)	1.70 (1.63, 1.75)	1.79 (1.72, 1.84)	1.06 (1.00, 1.12)	1.55 (1.49, 1.62)
High	1.55 (1.48, 1.62)	1.62 (1.55, 1.67)	1.55 (1.51, 1.60)	1.54 (1.46, 1.62)	1.65 (1.58, 1.70)

Note: Values are presented as adjusted odds ratios and 95% confidence intervals [aOR (95% CI)].

Abbreviation: SHS=secondhand smoke; CCMC/CCPM=central ministry-affiliated college or college co-sponsored by provincial and central ministries; PC=provincial college; HVC=higher vocational college.

DISCUSSION

This study provides the first nationally representative account of SHS exposure among Chinese college students on campus. It reveals persistent SHS exposure across five college campus settings in 2025 and highlights that two key indicators of smoke-free campus policy implementation — school smoking restrictions and observed teacher smoking on campus — were significantly associated with setting-specific SHS exposure. These findings underscore the importance of strengthening smoke-free campus policies, improving teacher management, and enforcing routine regulatory measures at Chinese colleges.

Variations in SHS exposure across campus settings likely reflect the distinct functions, occupancy patterns, and social dynamics of these spaces. As shared living

environments where students spend considerable time, dormitories may facilitate repeated and prolonged exposure, with smoking more readily normalized in peer-based residential settings. The relatively high exposure observed in teaching buildings may stem from dense pedestrian flow and congregation during class transitions. Conversely, lower exposure in administrative buildings and canteens may be attributable to more structured activities, shorter occupancy durations, and reduced social tolerance for smoking. Collectively, these findings indicate that campus SHS exposure is closely linked to the spatial and social organization of student life (4,6). In addition, students with greater awareness of SHS health harms were more likely to report SHS exposure across all five campus settings. This pattern may reflect that frequent campus SHS exposure heightens students' recognition of its harms and that students

with greater harm awareness may be more attentive to identifying and reporting exposure. Consequently, awareness-raising alone may be insufficient to reduce exposure without effective implementation and enforcement of smoke-free campus policies.

A notable proportion of students still reported partial, absent, or unclear indoor smoking restrictions, revealing a gap between campus practice and China's smoke-free school requirements (7). Students' lack of awareness regarding school smoking rules further points to insufficient communication of tobacco-control policies. The elevated SHS exposure among students reporting partial, absent, or unclear policies underscores the importance of both policy comprehensiveness and clarity for effective protection. Moreover, the persistence of exposure even under comprehensive policies likely reflects deficiencies in implementation or enforcement rather than the absence of policy alone.

Furthermore, the continued visibility of teachers smoking on campus — even under comprehensive smoking restrictions — suggests weak enforcement of smoke-free rules. Observed teacher smoking on campus was associated with higher student SHS exposure across all settings and may additionally undermine smoke-free norms and policy credibility (8–9). Campus tobacco control should therefore extend beyond students to include teachers and other school staff, who should be priority subjects of supervision and serve as role models for maintaining a smoke-free campus environment (7).

The absence of a significant association between provincial adult SHS exposure and campus SHS exposure suggests that exposure within colleges depends more on campus-level management and enforcement than on the broader tobacco-control environment. As relatively enclosed institutional settings, colleges are likely influenced more directly by proximate factors, including smoke-free rules, teacher compliance, and routine supervision (10). This finding carries practical significance because campus-level interventions fall within direct institutional control and can be readily implemented. Strengthening smoke-free campus management may therefore prove more actionable than relying solely on broader tobacco-control measures. However, the provincial-level indicator has ecological limitations and may not fully capture the tobacco-control environment surrounding individual campuses or variation in policy implementation across institutions.

This study is subject to at least three limitations.

First, the cross-sectional design precludes causal inference. Second, both SHS exposure and policy implementation indicators were self-reported, which could introduce reporting bias and may have amplified or attenuated the estimated AOR values. We adjusted for school type, region, sex, current smoking status, knowledge of SHS harms, and provincial tertiles of adult SHS exposure to minimize potential confounding. Third, objective environmental measures of tobacco smoke, such as airborne nicotine or particulate matter monitoring, were unavailable, limiting our ability to validate the self-reported data.

In conclusion, despite substantial progress in establishing smoke-free primary and secondary schools, SHS exposure remained prevalent across all five campus settings among Chinese college students. School-level factors — particularly the comprehensiveness and clarity of smoke-free policies and teachers' smoking behavior on campus — appeared more closely associated with SHS exposure than the broader macro-level tobacco-control environment. Strengthening smoke-free campus policy implementation, enhancing teacher management, and ensuring routine enforcement may help reduce SHS exposure in college settings.

Conflicts of interest: No conflicts of interest.

Ethical statement: Approved by the China CDC Institutional Review Board (No. 202522).

Acknowledgements: The authors thank all colleagues and local staff from Centers for Disease Control and Prevention and health education institutions for their contributions to data collection.

Funding: Supported by the Global Health Capacity Building and Tobacco Control Project, Chinese Center for Disease Control and Prevention (2025).

doi: [10.46234/ccdcw2026.110](https://doi.org/10.46234/ccdcw2026.110)

* Corresponding author: Lin Xiao, xiaolin@chinacdc.cn.

¹ Tobacco Control Office, Chinese Center for Disease Control and Prevention & Chinese Academy of Preventive Medicine, Beijing, China.

Copyright © 2026 by Chinese Center for Disease Control and Prevention & Chinese Academy of Preventive Medicine. All content is distributed under a Creative Commons Attribution Non Commercial License 4.0 (CC BY-NC).

Submitted: April 28, 2026

Accepted: May 22, 2026

Issued: May 29, 2026

REFERENCES

- Gong M, Liang ZY, Zhang YY, Shadel WG, Zhou L, Xiao JY.

- Implementation of the tobacco-free campus policy on college campuses: evidence from a survey of college students in Beijing. *Nicotine Tob Res* 2016;18(11):2083 – 91. <https://doi.org/10.1093/ntr/ntw125>.
2. Zhao X, Young RMC, White KM. 'I'm not a smoker...yet': a qualitative study on perceptions of tobacco control in Chinese high schools. *BMJ Open* 2018;8(4):e019483. <https://doi.org/10.1136/bmjopen-2017-019483>.
 3. Xie HY, Di XB, Liu SW, Zeng XY, Meng ZD, Xiao L. Tobacco use and cessation among college students — China, 2021. *China CDC Wkly* 2022;4(21):448 – 51. <https://doi.org/10.46234/ccdcw2022.100>.
 4. Nian QH, Yang XY, Yang TZ, Peng SH, Bottorff JL. Association between secondhand smoke exposure among women and the implementation of tobacco control measures on campus: a cross-sectional study in 50 universities across China. *Nicotine Tob Res* 2024;26(6):685 – 91. <https://doi.org/10.1093/ntr/ntad253>.
 5. Zeng XY, Liu SW, Liu Y, Xiao L. Smoking prevalence in urban and rural areas - China, 2024. *China CDC Wkly* 2025;7(22):751 – 9. <https://doi.org/10.46234/ccdcw2025.124>.
 6. Bardus M, El Boukhari N, Nakkash R. Development and evaluation of smoke-free or tobacco-free policies in university settings: a systematic scoping review. *Health Educ Res* 2020;35(4):306 – 51. <https://doi.org/10.1093/her/cyaa009>.
 7. National Health Commission of the People's Republic of China, Ministry of Education of the People's Republic of China. Notice on further strengthening the construction of smoke-free schools (Guo Wei Gui Hua Han [2020] No. 455). 2020. https://www.moe.gov.cn/jyb_xxgk/moe_1777/moe_1779/202104/t20210408_525035.html. (In Chinese)(Accessed: 25 May 2026).
 8. Escario JJ, Wilkinson AV. Visibility of smoking among schoolteachers in Spain and associations with student smoking: a cross-sectional study. *BMJ Open* 2018;8(1):e018736. <https://doi.org/10.1136/bmjopen-2017-018736>.
 9. Schreuders M, Linnansaari A, Lindfors P, van den Putte B, Kunst AE. Why staff at European schools abstain from enforcing smoke-free policies on persistent violators. *Health Promot Int* 2020;35(5):1106 – 15. <https://doi.org/10.1093/heapro/daz111>.
 10. Fallin A, Roditis M, Glantz SA. Association of campus tobacco policies with secondhand smoke exposure, intention to smoke on campus, and attitudes about outdoor smoking restrictions. *Am J Public Health* 2015;105(6):1098 – 100. <https://doi.org/10.2105/AJPH.2014.302251>.