Table 4 Multivariate analyses for the association between waterpipe (WP) smoking and chronic bronchitis

Population/subgroup	Major independent variables & covariates	ORa (95% CI)	P-value
All individuals	Ever smoking (> 20 WP-years)	2.75 (1.48–5.09)	0.001
	Older age	1.57 (1.39–1.77)	<0.001
	Ever cigarette smoking	14.05 (8.07–24.46)	<0.001
	Lower education	1.45 (1.21–1.75)	<0.001
	Ever living close to a busy road	2.07 (1.36–3.16)	0.001
	Ever living close to a power plant	1.50 (0.96–2.33)	0.075
	Air conditioning on heating mode	2.25 (1.14–4.42)	0.019
	Heating home other than electrically	1.54 (1.03–2.32)	0.036
	Passive smoking inside the home	1.88 (1.23–2.88)	0.004
All WP smokers	Smoking (> 20 WP-years)	5.65 (1.58–20.23)	0.008
	Older age	2.00 (1.36–2.95)	<0.001
	Ever cigarette smoking	412.01 (25.85–6565.31)	<0.001
	Female gender	5.02 (1.32–19.08)	0.018
	Lower education	4.03 (1.70–9.52)	0.002
	Ever living close to a local power plant	15.01 (2.64–85.44)	0.002
	Air conditioning on heating mode	9.48 (1.24–72.52)	0.030
Cigarette smokers	Ever smoking (> 20 WP-years)	2.56 (1.29–5.08)	0.007
	Number of smokers in the family	1.34 (1.10–1.63)	0.004
	Older age	1.56 (1.37–1.78)	<0.001
	Lower education	1.29 (1.05–1.58)	0.015
	Ever living close to a busy road	1.66 (1.06–2.60)	0.026
	Ever living close to a local power plant	1.92 (1.18–3.12)	0.009
	Air conditioning on heating mode	2.22 (1.06–4.66)	0.034
Current WP smokers	Waterpipe dependence (≥ 10 on LWDS-11)	5.14 (0.81–32.62)	0.083
	Older age	2.74 (1.50–5.02)	0.001
	Female gender	4.45 (0.72–27.73)	0.110
	Air conditioning on heating mode	12.96 (1.06–158.27)	0.045
	Central heating	4.12 (0.73–23.41)	0.110

ORa = adjusted odds ratio; CI = confidence interval.
LWDS-11 = Lebanon Waterpipe Dependence Scale – 11.