

Supplementary Materials

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Figure S1 Study Area and IDW-Based Annual NO₂ Distribution in Jiangxi Province, China (2023–2024)

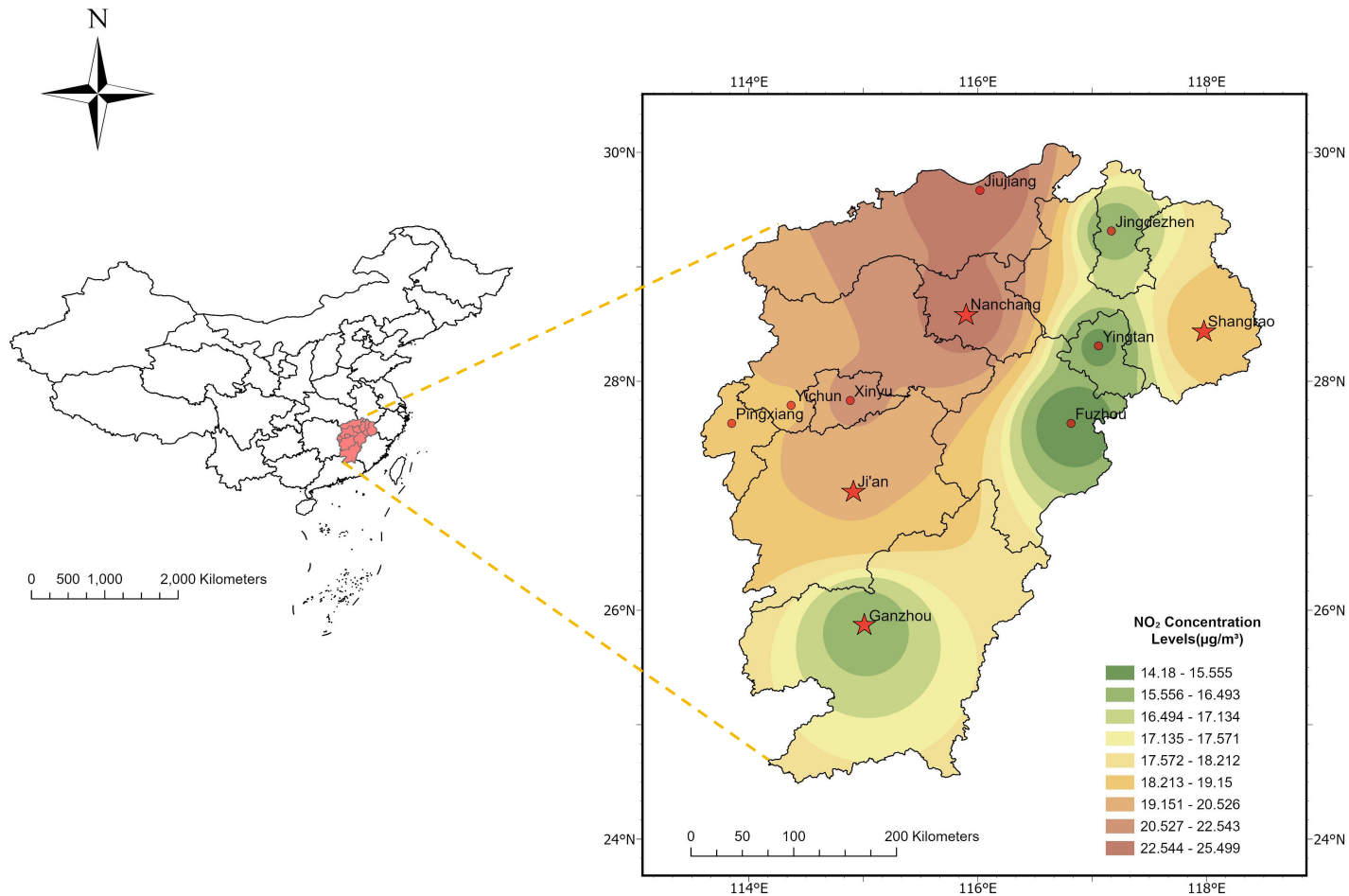
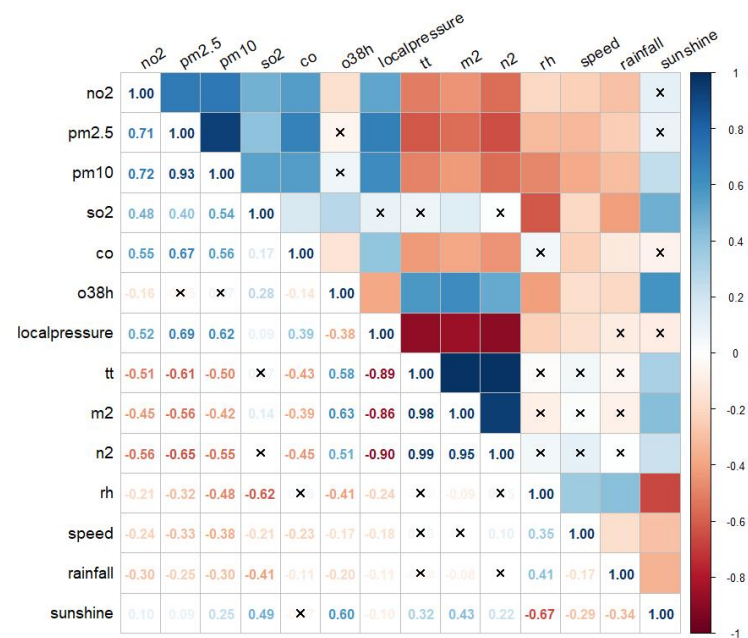


Figure Caption: This map was created using ArcGIS software. The basemap data was obtained from Natural Earth (<https://www.naturalearthdata.com>).

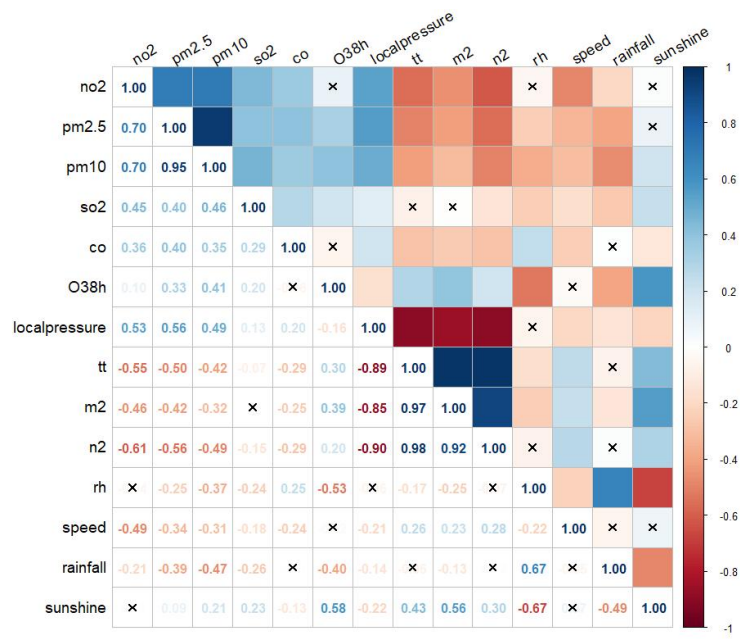
★: indicates the locations of the study cities included in this analysis.

Figure S2 Spearman Correlation Analysis Between Air Pollutants and Meteorological Factors

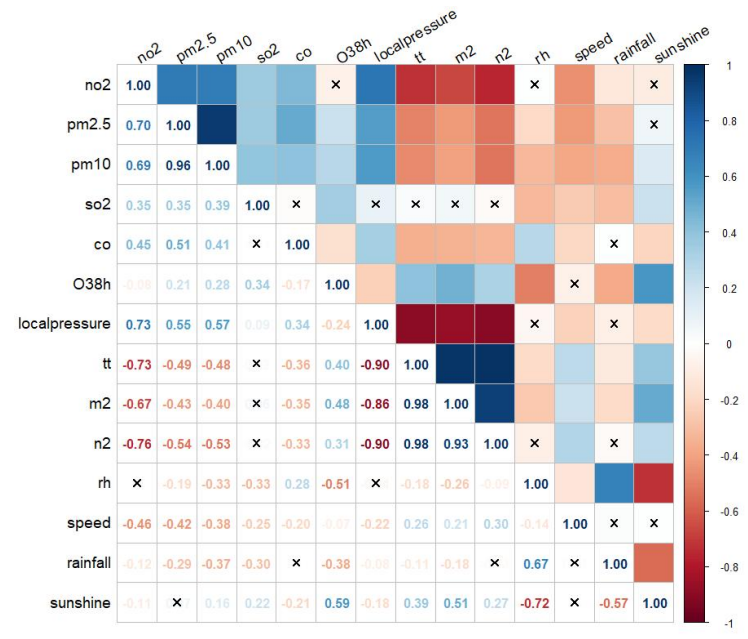
(a) Nanchang



(b) Ganzhou



(c) Ji'an



(d) Shangrao

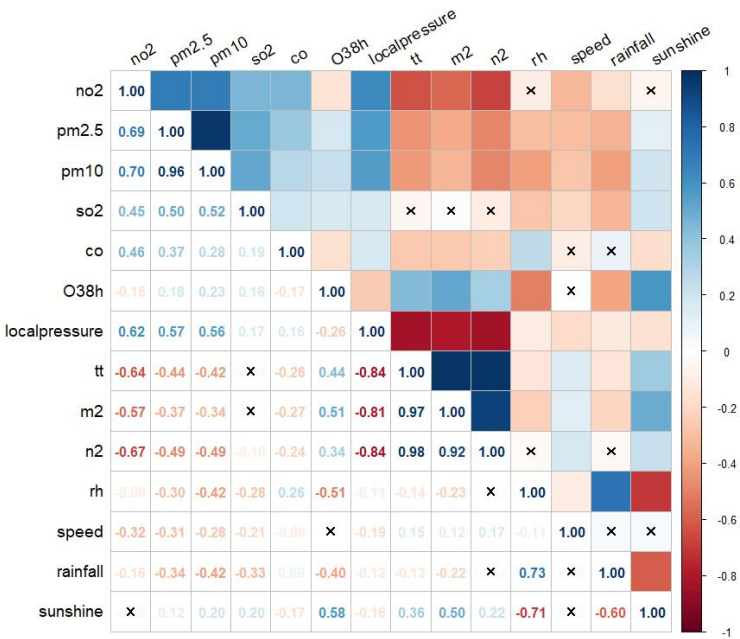


Figure S3 Results of Sex-Specific Subgroup Analysis

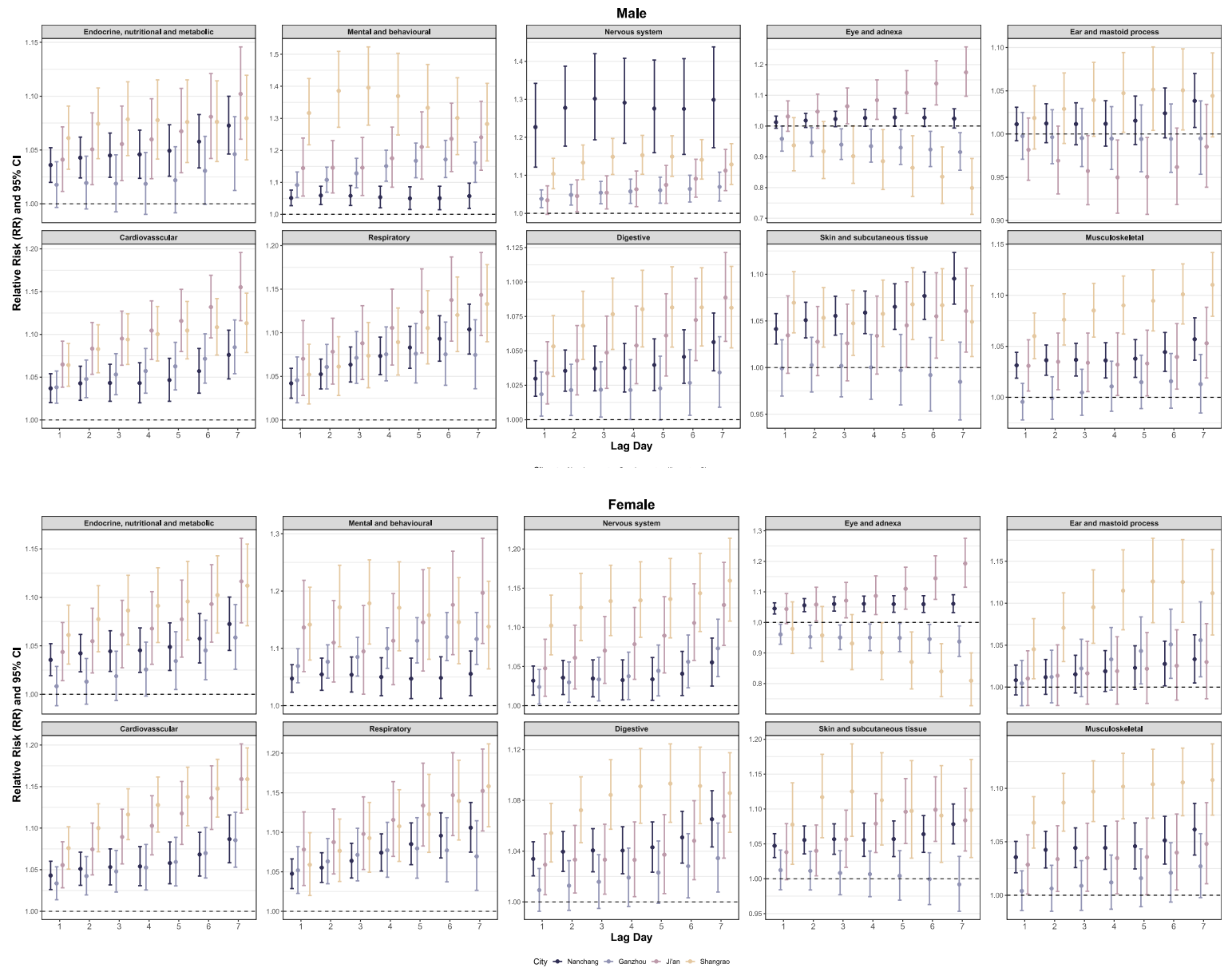


Figure S4 Results of Age-Specific Subgroup Analysis

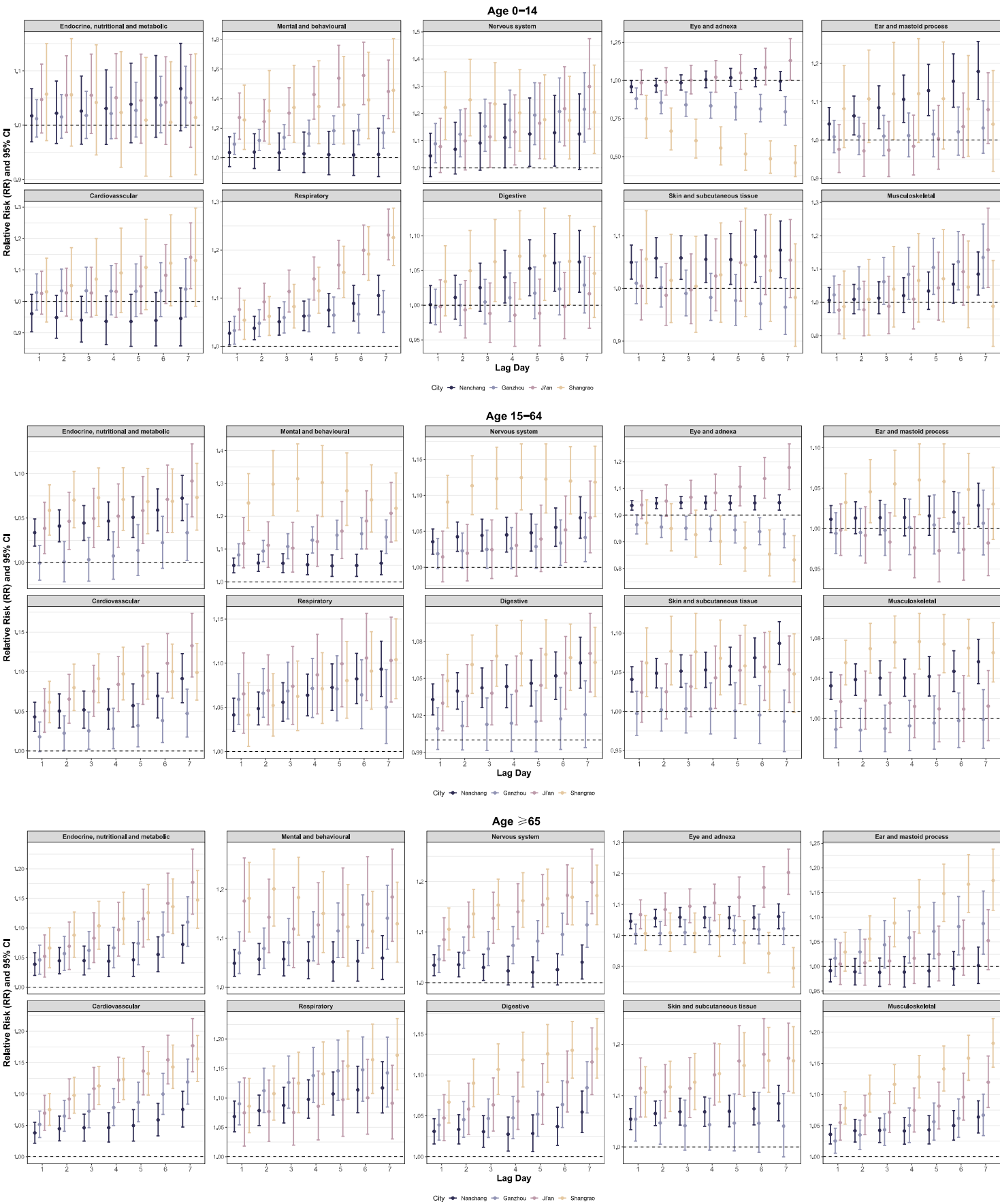


Figure S5 Results of Healthcare Setting Subgroup Analysis

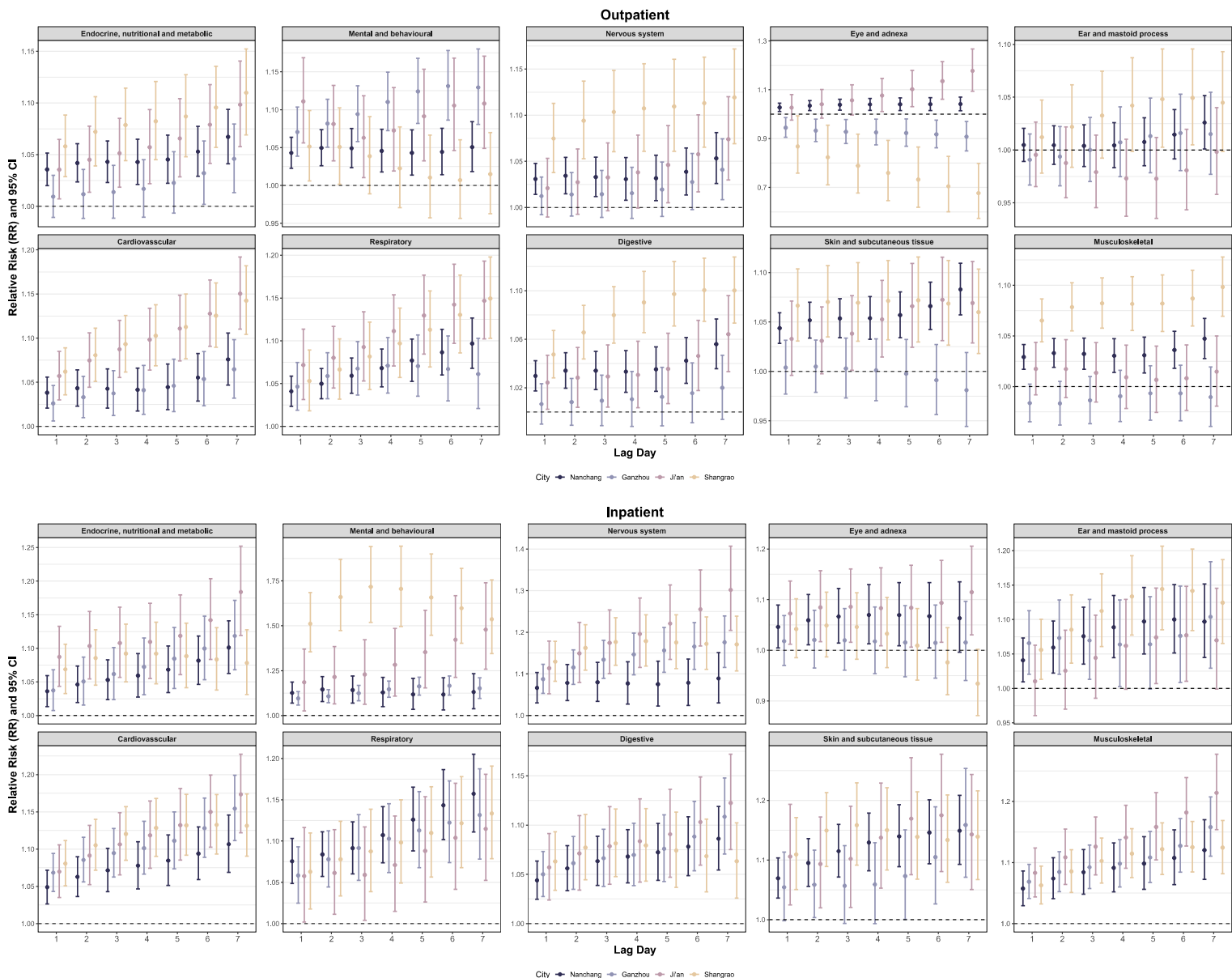


Figure S6 Results of Seasonal Subgroup Analysis

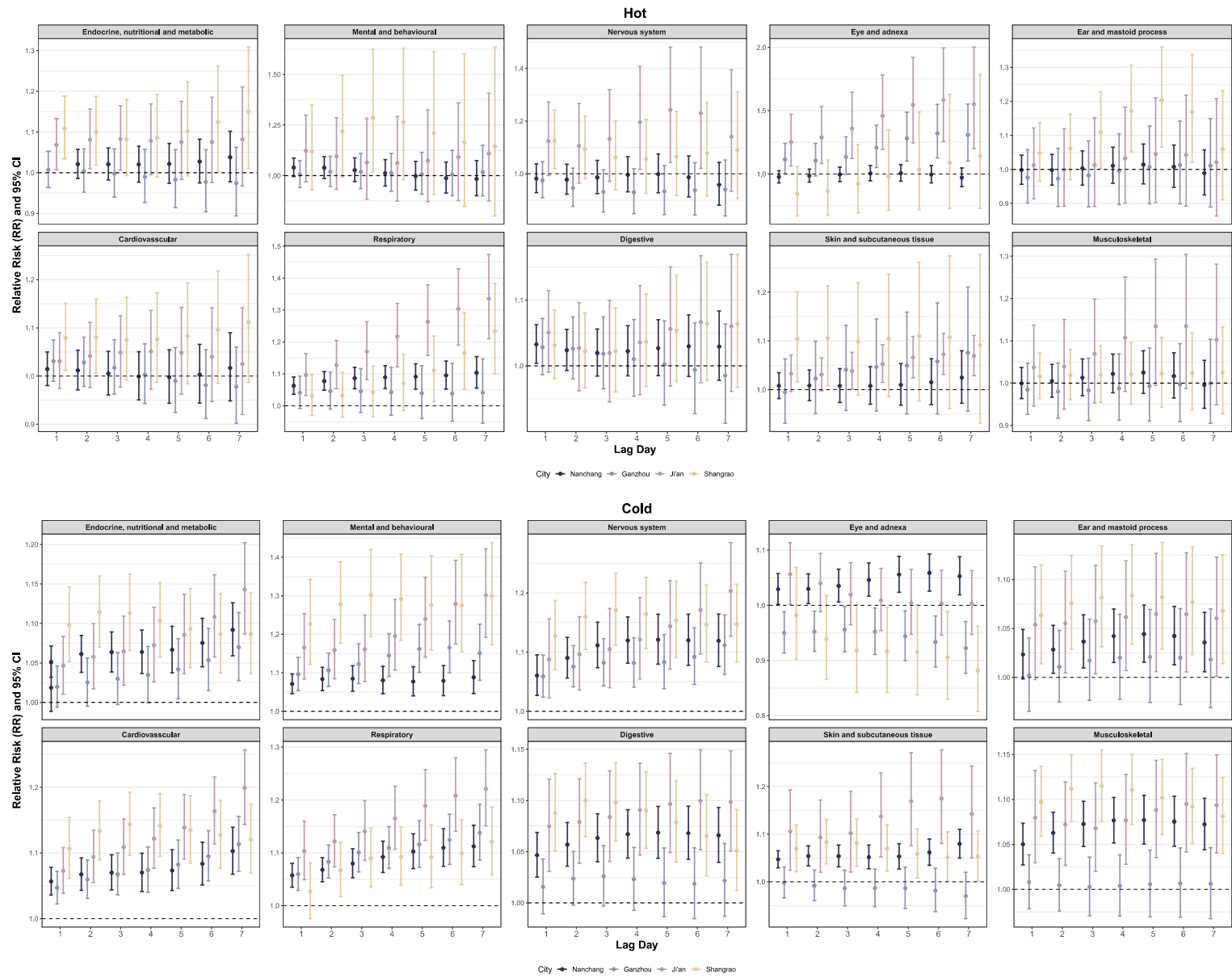


Figure S7 Exposure–response curves for specific disease subtypes across four cities based on the primary lag window (lag07)

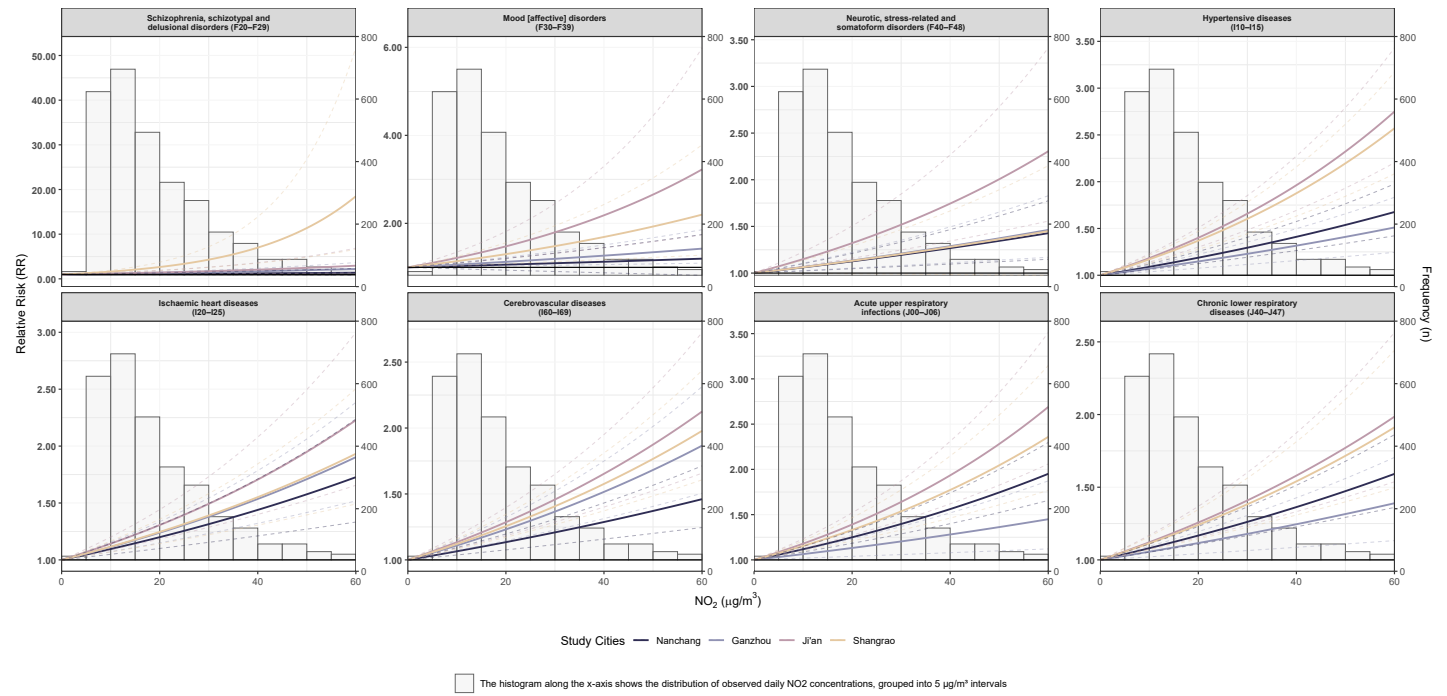


Figure S8 Results of Sensitivity Analysis with Different Lag Structures

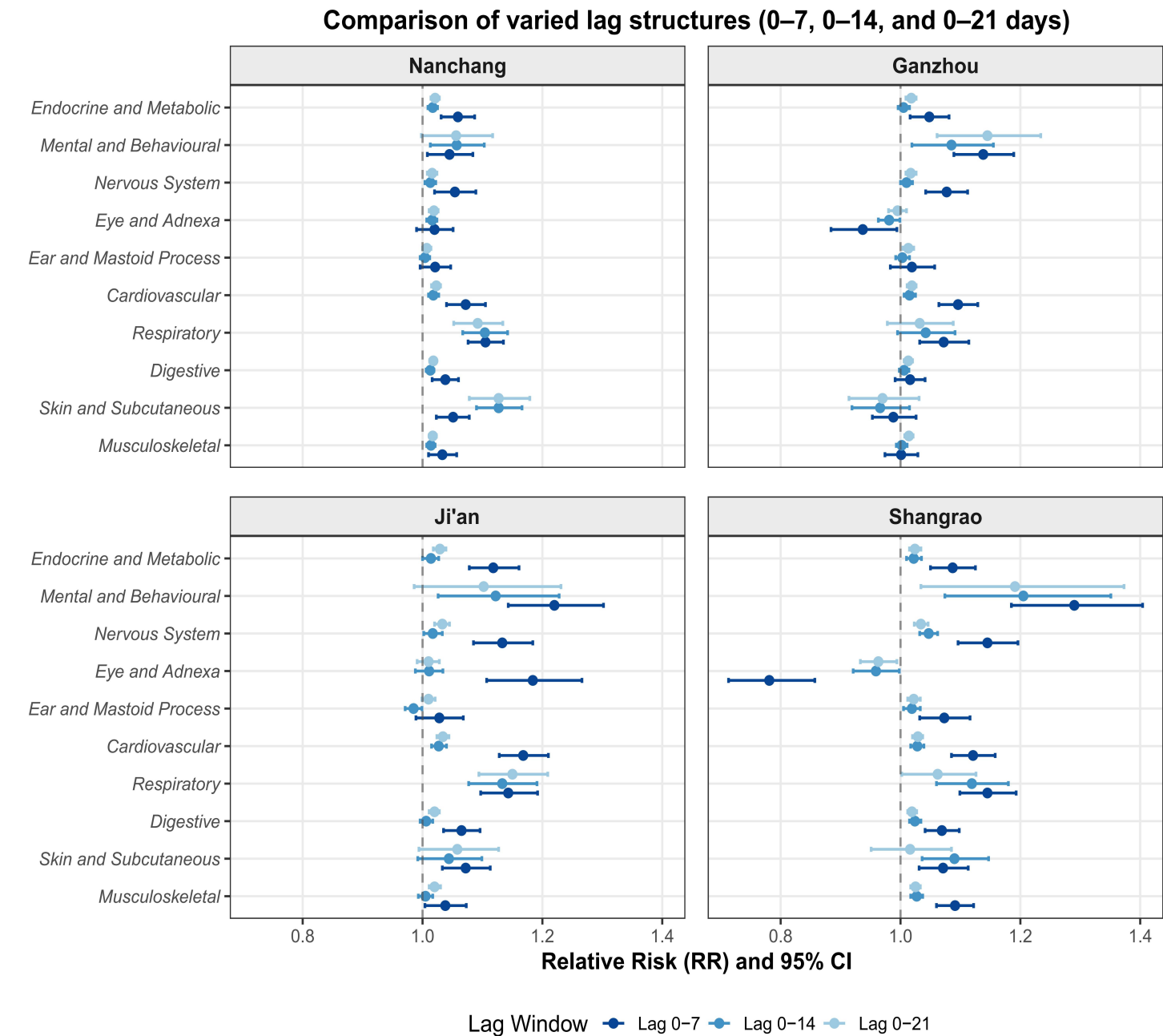


Table S1. Disease systems and corresponding ICD-10 codes

ICD-10 Chapter		ICD-10 code
I	Endocrine, nutritional and metabolic	E00–E90
II	Mental and behavioural	F00–F99
III	Nervous system	G00–G99
IV	Eye and adnexa	H00–H59
V	Ear and mastoid process	H60–H95
VI	Cardiovascular	I00–I99
VII	Respiratory	J00–J99
VIII	Digestive	K00–K93
IX	Skin and subcutaneous tissue	L00–L99
X	Musculoskeletal	M00–M99

Table S2. Specific Disease Subtypes and Their Corresponding ICD-10 Codes

ICD-10 Chapter	ICD-10 Codes
II. Mental and behavioural	F00–F99
Schizophrenia, schizotypal and delusional disorders	F20–F29
Mood [affective] disorders	F30–F39
Neurotic, stress-related and somatoform disorders	F40–F48
VI. Cardiovascular	I00–I99
Hypertensive diseases	I10–I15
Ischaemic heart diseases	I20–I25
Cerebrovascular diseases	I60–I69
VII. Respiratory	J00–J99
Acute upper respiratory infections	J00–J06
Chronic lower respiratory diseases	J40–J47

Table S3. Descriptive Characteristics of Daily Air Pollutant and Meteorological Data in Four Cities of Jiangxi Province in 2023-2024

Location		Mean $\pm$ SD	Min	P25	P50	P75	Max
Nanchang	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	32.70 $\pm$ 22.92	4	16	27	43	189
	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	56.18 $\pm$ 36.32	5	30	46	78	245
	CO (mg/m^3)	0.65 $\pm$ 0.17	0.3	0.5	0.6	0.7	1.5
	NO ₂ ($\mu\text{g}/\text{m}^3$)	24.84 $\pm$ 14.12	6	14	20	32	79
	SO ₂ ($\mu\text{g}/\text{m}^3$)	8.06 $\pm$ 2.43	0.6	6	8	9	19
	O ₃ ($\mu\text{g}/\text{m}^3$)	95.31 $\pm$ 35.62	7	70	96	122	199
	Daily Mean Temperature($^{\circ}\text{C}$)	19.79 $\pm$ 8.99	-1.8	12.1	21	27.55	35.5
	Daily Relative Humidity (%)	72.74 $\pm$ 13.82	37	63	73	83	99
	Daily Mean Air Pressure (hPa)	1009.59 $\pm$ 9.13	984.8	1001.6	1009	1016.6	1035.3
	Daily Wind Speed (m/s)	3.42 $\pm$ 10.81	0	0	1.3	2.1	145
	Daily precipitation (mm)	3.35 $\pm$ 9.36	0	0	1.3	2.2	122.8
	Daily sunshine duration (h)	4.50 $\pm$ 4.13	0	0	4	8.6	12.5
Ganzhou	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	23.23 $\pm$ 14.10	5	13	21	31	200
	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	39.55 $\pm$ 22.25	9	22	35	52	244
	CO (mg/m^3)	0.84 $\pm$ 0.19	0.4	0.7	0.8	1	1.7
	NO ₂ ($\mu\text{g}/\text{m}^3$)	15.77 $\pm$ 10.48	4	9	12	19	66
	SO ₂ ($\mu\text{g}/\text{m}^3$)	9.39 $\pm$ 3.77	3	7	8	11	29
	O ₃ ($\mu\text{g}/\text{m}^3$)	81.09 $\pm$ 31.61	0	61	80	103	187
	Daily Mean Temperature($^{\circ}\text{C}$)	21.00 $\pm$ 8.16	-0.6	14.6	22.2	28.1	34
	Daily Relative Humidity (%)	74.15 $\pm$ 11.94	37	66	75	83	100
	Daily Mean Air Pressure (hPa)	998.39 $\pm$ 8.04	974.7	991.6	997.55	1004.9	1020.9
	Daily Wind Speed (m/s)	1.63 $\pm$ 0.60	0.3	1.2	1.5	1.9	4.2
	Daily precipitation (mm)	3.77 $\pm$ 12.07	0	0	0	1.2	190.6
	Daily sunshine duration (h)	4.76 $\pm$ 4.08	0	0.2	4.4	8.9	12.6
Ji'an	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	28.06 $\pm$ 15.93	6	16	24	35	129
	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	46.79 $\pm$ 22.33	14	30	42	59.5	160
	CO (mg/m^3)	0.65 $\pm$ 0.15	0.4	0.6	0.6	0.7	1.2
	NO ₂ ($\mu\text{g}/\text{m}^3$)	19.33 $\pm$ 9.70	6	12	17	25	60
	SO ₂ ($\mu\text{g}/\text{m}^3$)	12.67 $\pm$ 3.26	5	10	12	15	26
	O ₃ ($\mu\text{g}/\text{m}^3$)	88.18 $\pm$ 31.21	6	66	87	112	190
	Daily Mean Temperature($^{\circ}\text{C}$)	20.36 $\pm$ 8.66	-1.8	13.5	21.6	27.9	34.8
	Daily Relative Humidity (%)	74.35 $\pm$ 12.60	39	66	73	85	98

Shangrao	Daily Mean Air Pressure (hPa)	1006.49 ± 8.87	982.7	998.8	1005.5	1013.5	1031.2
	Daily Wind Speed (m/s)	1.50 ± 0.71	0.3	1	1.3	1.9	5.3
	Daily precipitation (mm)	4.15 ± 11.72	0	0	0	1.85	105.8
	Daily sunshine duration (h)	4.04 ± 4.11	0	0	2.7	7.9	12.8
	PM _{2.5} (μg/m ³)	25.19 ± 14.87	6	15	22	32	141
	PM ₁₀ (μg/m ³)	45.81 ± 24.02	11	28	40	60	179
	CO (mg/m ³)	0.72 ± 0.41	0.4	0.6	0.7	0.8	8
	NO ₂ (μg/m ³)	19.17 ± 10.04	4	12	16	26	60
	SO ₂ (μg/m ³)	12.59 ± 6.33	4	8	11	15	51
	O ₃ (μg/m ³)	90.12 ± 34.36	8	64.5	89	115	201
	Daily Mean Temperature(°C)	19.23 ± 8.53	-1.2	12.2	20.1	26.8	33.8
	Daily Relative Humidity (%)	75.58 ± 13.65	39	65	75	86	99
	Daily Mean Air Pressure (hPa)	1001.36 ± 8.53	976.2	994	1000.8	1008	1025.6
	Daily Wind Speed (m/s)	1.63 ± 0.53	0.5	1.2	1.5	1.9	3.8
	Daily precipitation (mm)	5.18 ± 12.48	0	0	0	3.35	109
	Daily sunshine duration (h)	4.58 ± 4.18	0	0.1	4.3	8.7	12.3

Table S4. Distribution of Total Visits for Systemic Diseases in Four Cities of Jiangxi Province, 2023–2024

Disease System			Nanchang	Ganzhou	Ji'an	Shangrao
I :Endocrine, nutritional and metabolic (E00–E90)	Total visits		224251	212043	157186	84932
	By sex	Male	97522	90190	71678	40393
		Female	126729	121853	85508	44539
	By age group	0–14	5234	35222	13247	3008
		15–64	138169	129385	102163	51075
		≥65	80848	47436	41776	30849
	By visit type	Outpatient	187522	189114	134751	53676
		Inpatient	36729	22929	22435	31256
II :Mental and behavioural (F00–F99)	Total visits		52087	143483	33859	22013
	By sex	Male	23747	64378	16409	10941
		Female	28340	79105	17450	11072
	By age group	0–14	2562	4256	2431	815
		15–64	33765	116528	23829	16238
		≥65	15760	22699	7599	4960
	By visit type	Outpatient	48057	88025	24208	13205
		Inpatient	4030	55458	9651	8808
III:Nervous system (G00–G99)	Total visits		112731	86642	59160	37452
	By sex	Male	50297	39766	28082	18224
		Female	62434	46876	31078	19228
	By age group	0–14	1019	2223	2523	1983
		15–64	66033	53013	35977	20192
		≥65	45679	31406	20660	15277
	By visit type	Outpatient	97576	65455	45151	18317
		Inpatient	15155	21187	14009	19135
IV: Eye and adnexa (H00–H59)	Total visits		108311	104431	255663	37988
	By sex	Male	47004	45048	110561	17231
		Female	61307	59383	145102	20757
	By age group	0–14	16194	19261	32392	4150
		15–64	57975	55165	159396	19979
		≥65	34142	30005	63875	13859
	By visit type	Outpatient	93015	84296	231705	19747
		Inpatient	15296	20135	23958	18241
V: Ear and mastoid process (H60–H95)	Total visits		53933	45530	55545	29270
	By sex	Male	23359	21310	23594	12220
		Female	30574	24220	31951	17050
	By age group	0–14	5539	9265	5513	1420
		15–64	32586	27996	34701	16429
		≥65	15808	8269	15331	11421

	By visit type	Outpatient	46228	39389	45018	16545
		Inpatient	7705	6141	10527	12725
VI: Cardiovascular (I00–I99)	Total visits		434161	283201	269968	218733
	By sex	Male	222252	149437	146130	117143
		Female	211909	133764	123838	101590
	By age group	0–14	1446	3903	5213	1400
		15–64	176675	127826	117124	80801
		≥65	256040	151472	147631	136532
	By visit type	Outpatient	346809	215565	192999	113313
		Inpatient	87352	67636	76969	105420
VII: Respiratory (J00–J99)	Total visits		1038142	957222	817807	602902
	By sex	Male	496321	520496	433011	310743
		Female	541821	436726	384796	292159
	By age group	0–14	261785	597202	330790	112769
		15–64	552812	266257	342711	309661
		≥65	223545	93763	144306	180472
	By visit type	Outpatient	942245	796852	649542	445931
		Inpatient	95897	160370	168265	156971
VIII: Digestive (K00–K93)	Total visits		443286	394378	314281	211948
	By sex	Male	217993	196115	128365	112204
		Female	225293	198263	185916	99744
	By age group	0–14	17616	49117	34581	8135
		15–64	300716	268505	193435	136021
		≥65	124954	76756	86265	67792
	By visit type	Outpatient	366964	327745	246321	117851
		Inpatient	76322	66633	67960	94097
IX: Skin and subcutaneous tissue (L00–L99)	Total visits		191489	120903	124772	54711
	By sex	Male	82961	56572	60141	29605
		Female	108528	64331	64631	25106
	By age group	0–14	15130	26011	15559	4282
		15–64	136380	81260	87732	35680
		≥65	39979	13632	21481	14749
	By visit type	Outpatient	183469	115451	118658	46145
		Inpatient	8020	5452	6114	8566
X: Musculoskeletal (M00–M99)	Total visits		479371	253965	263916	202770
	By sex	Male	203566	104652	115524	95390
		Female	275805	149313	148392	107380
	By age group	0–14	5765	4466	3767	1601
		15–64	324107	175729	169349	122500
		≥65	149499	73770	90800	78669
	By visit type	Outpatient	392711	200650	210431	112353
		Inpatient	86660	53315	53485	90417

Table S5. Total Visit Counts for Specific Disease Subtypes in Four Cities of Jiangxi Province, 2023–2024

Disease Subtype and ICD-10 Codes	Nanchang	Ganzhou	Ji'an	Shangrao
II. Mental and behavioural				
Schizophrenia, schizotypal and delusional disorders(F20–F29)	2136	37662	6612	5702
Mood [affective] disorders(F30–F39)	5103	27326	4020	3839
Neurotic, stress-related and somatoform disorders(F40–F48)	28244	48094	12793	6907
VI. Cardiovascular				
Hypertensive diseases(I10–I15)	258009	139940	121306	78837
Ischaemic heart diseases(I20–I25)	38268	43476	27615	30873
Cerebrovascular diseases(I60–I69)	90432	58752	69117	71096
VII. Respiratory				
Acute upper respiratory infections(J00–J06)	537312	391720	340730	286698
Chronic lower respiratory diseases(J40–J47)	136339	144632	138065	78035

Table S6. FDR-Corrected Associations Between NO₂ Exposure and Major Disease Systems

City	RR (95% CI)	P _{Raw}	P _{FDR}
I. Endocrine, nutritional and metabolic diseases (E00–E90)			
Nanchang	1.059 (1.031–1.087)	< 0.001	< 0.001 ***
Ganzhou	1.048 (1.016–1.081)	0.003	0.004 **
Ji'an	1.118 (1.078–1.160)	< 0.001	< 0.001 ***
Shangrao	1.087 (1.050–1.125)	< 0.001	< 0.001 ***
II. Mental and behavioural disorders (F00–F99)			
Nanchang	1.045 (1.008–1.084)	0.017	0.022 *
Ganzhou	1.138 (1.089–1.189)	< 0.001	< 0.001 ***
Ji'an	1.220 (1.143–1.302)	< 0.001	< 0.001 ***
Shangrao	1.290 (1.185–1.404)	< 0.001	< 0.001 ***
III. Nervous system diseases (G00–G99)			
Nanchang	1.054 (1.020–1.089)	0.002	0.002 **
Ganzhou	1.077 (1.042–1.112)	< 0.001	< 0.001 ***
Ji'an	1.133 (1.085–1.184)	< 0.001	< 0.001 ***
Shangrao	1.145 (1.096–1.196)	< 0.001	< 0.001 ***
IV. Diseases of the eye and adnexa (H00–H59)			
Nanchang	1.020 (0.990–1.051)	0.187	0.207
Ganzhou	0.937 (0.884–0.994)	0.03	0.037 *
Ji'an	1.184 (1.107–1.266)	< 0.001	< 0.001 ***
Shangrao	0.781 (0.713–0.857)	< 0.001	< 0.001 ***
V. Diseases of the ear and mastoid process (H60–H95)			
Nanchang	1.021 (0.996–1.047)	0.097	0.114
Ganzhou	1.019 (0.983–1.057)	0.306	0.322
Ji'an	1.028 (0.989–1.068)	0.167	0.191
Shangrao	1.073 (1.032–1.116)	< 0.001	< 0.001 ***
VI. Cardiovascular diseases (I00–I99)			
Nanchang	1.072 (1.040–1.105)	< 0.001	< 0.001 ***

Ganzhou	1.096 (1.064–1.129)	< 0.001	< 0.001 ***
Ji'an	1.168 (1.128–1.210)	< 0.001	< 0.001 ***
Shangrao	1.121 (1.085–1.158)	< 0.001	< 0.001 ***
VII. Respiratory diseases (J00–J99)			
Nanchang	1.105 (1.076–1.135)	< 0.001	< 0.001 ***
Ganzhou	1.072 (1.032–1.114)	< 0.001	< 0.001 ***
Ji'an	1.143 (1.097–1.192)	< 0.001	< 0.001 ***
Shangrao	1.145 (1.099–1.193)	< 0.001	< 0.001 ***
VIII. Digestive diseases (K00–K93)			
Nanchang	1.038 (1.016–1.060)	< 0.001	0.001 ***
Ganzhou	1.016 (0.991–1.041)	0.212	0.229
Ji'an	1.065 (1.035–1.096)	< 0.001	< 0.001 ***
Shangrao	1.069 (1.041–1.098)	< 0.001	< 0.001 ***
IX. Skin and subcutaneous tissue diseases (L00–L99)			
Nanchang	1.051 (1.023–1.078)	< 0.001	< 0.001 ***
Ganzhou	0.988 (0.953–1.026)	0.537	0.551
Ji'an	1.072 (1.033–1.113)	< 0.001	< 0.001 ***
Shangrao	1.071 (1.031–1.113)	< 0.001	< 0.001 ***
X. Musculoskeletal diseases (M00–M99)			
Nanchang	1.033 (1.010–1.057)	0.005	0.006 **
Ganzhou	1.001 (0.974–1.029)	0.93	0.93
Ji'an	1.038 (1.004–1.073)	0.028	0.035 *
Shangrao	1.091 (1.060–1.122)	< 0.001	< 0.001 ***

Table S7. Sensitivity Analysis of Multi-System Disease Risks under Different DLNM Degrees of Freedom

		Region	df=6	df=7 (Main results)	df=8	df=9
I	Endocrine, nutritional and metabolic	Nanchang	1.084 (1.061,1.108)	1.073 (1.047,1.098)	1.074 (1.048,1.1)	1.075 (1.049,1.102)
		Ganzhou	1.058 (1.029,1.088)	1.053 (1.022,1.085)	1.066 (1.033,1.099)	1.061 (1.029,1.095)
		Ji'an	1.12 (1.082,1.159)	1.11 (1.07,1.151)	1.122 (1.081,1.166)	1.113 (1.073,1.155)
		Shangrao	1.116 (1.082,1.15)	1.096 (1.061,1.133)	1.105 (1.067,1.143)	1.096 (1.059,1.135)
		Nanchang	1.062 (1.04,1.085)	1.056 (1.033,1.08)	1.053 (1.03,1.078)	1.059 (1.035,1.083)
II	Mental and behavioural	Ganzhou	1.153 (1.107,1.2)	1.145 (1.099,1.192)	1.148 (1.101,1.198)	1.148 (1.102,1.197)
		Ji'an	1.234 (1.156,1.317)	1.22 (1.143,1.302)	1.231 (1.149,1.319)	1.227 (1.148,1.31)
		Shangrao	1.253 (1.162,1.352)	1.242 (1.147,1.344)	1.234 (1.135,1.341)	1.259 (1.159,1.368)
		Nanchang	1.074 (1.049,1.1)	1.058 (1.03,1.086)	1.061 (1.032,1.09)	1.064 (1.035,1.093)
		Ganzhou	1.088 (1.057,1.119)	1.072 (1.039,1.105)	1.083 (1.049,1.118)	1.082 (1.048,1.118)
III	Nervous system	Ji'an	1.147 (1.102,1.194)	1.121 (1.075,1.169)	1.146 (1.097,1.198)	1.126 (1.079,1.176)
		Shangrao	1.167 (1.125,1.211)	1.144 (1.1,1.19)	1.155 (1.109,1.204)	1.153 (1.106,1.201)
		Nanchang	1.086 (1.06,1.112)	1.045 (1.018,1.073)	1.048 (1.02,1.076)	1.049 (1.021,1.077)
		Ganzhou	0.944 (0.896,0.995)	0.928 (0.876,0.982)	0.955 (0.904,1.009)	0.949 (0.901,0.998)
		Ji'an	1.268 (1.19,1.351)	1.185 (1.109,1.266)	1.143 (1.07,1.221)	1.193 (1.116,1.276)
IV	Eye and adnexa	Shangrao	0.901 (0.817,0.994)	0.804 (0.723,0.895)	0.825 (0.745,0.913)	0.808 (0.733,0.891)
		Nanchang	1.034 (1.013,1.056)	1.036 (1.012,1.06)	1.035 (1.011,1.06)	1.037 (1.013,1.062)
		Ganzhou	1.036 (1.002,1.071)	1.027 (0.991,1.064)	1.034 (0.997,1.073)	1.029 (0.992,1.067)
		Ji'an	1.02 (0.983,1.058)	1.011 (0.973,1.05)	1.024 (0.983,1.066)	1.013 (0.975,1.054)
		Shangrao	1.086 (1.049,1.125)	1.082 (1.043,1.123)	1.097 (1.055,1.14)	1.092 (1.051,1.136)
V	Ear and mastoid process					

VI	Cardiovascular	Nanchang	1.096 (1.071,1.121)	1.081 (1.054,1.11)	1.082 (1.054,1.111)	1.081 (1.052,1.11)
		Ganzhou	1.1 (1.072,1.13)	1.085 (1.055,1.116)	1.087 (1.055,1.119)	1.09 (1.059,1.123)
		Ji'an	1.186 (1.148,1.225)	1.157 (1.119,1.196)	1.165 (1.125,1.208)	1.16 (1.121,1.201)
		Shangrao	1.153 (1.122,1.186)	1.134 (1.101,1.168)	1.141 (1.106,1.177)	1.137 (1.102,1.173)
VII	Respiratory	Nanchang	1.111 (1.082,1.141)	1.105 (1.076,1.135)	1.098 (1.067,1.129)	1.097 (1.067,1.127)
		Ganzhou	1.105 (1.063,1.148)	1.076 (1.039,1.115)	1.068 (1.028,1.109)	1.073 (1.035,1.112)
		Ji'an	1.16 (1.106,1.216)	1.143 (1.097,1.192)	1.111 (1.06,1.165)	1.14 (1.095,1.188)
		Shangrao	1.184 (1.135,1.235)	1.145 (1.099,1.193)	1.139 (1.09,1.191)	1.151 (1.103,1.202)
VIII	Digestive	Nanchang	1.071 (1.052,1.09)	1.061 (1.04,1.082)	1.065 (1.045,1.087)	1.065 (1.045,1.087)
		Ganzhou	1.04 (1.017,1.064)	1.034 (1.01,1.06)	1.042 (1.016,1.068)	1.034 (1.008,1.06)
		Ji'an	1.096 (1.066,1.127)	1.076 (1.046,1.108)	1.091 (1.059,1.124)	1.078 (1.047,1.11)
		Shangrao	1.104 (1.078,1.131)	1.083 (1.056,1.112)	1.088 (1.059,1.117)	1.079 (1.051,1.108)
IX	Skin and subcutaneous tissue	Nanchang	1.136 (1.111, 1.161)	1.086 (1.060, 1.112)	1.075 (1.050, 1.101)	1.065 (1.041, 1.090)
		Ganzhou	1.006 (0.981,1.032)	1.007 (0.982,1.033)	1.007 (0.982,1.033)	1.006 (0.981,1.032)
		Ji'an	1.092 (1.05,1.135)	1.077 (1.037,1.119)	1.082 (1.04,1.126)	1.076 (1.036,1.118)
		Shangrao	1.057 (1.019,1.096)	1.071 (1.031,1.113)	1.059 (1.017,1.102)	1.062 (1.021,1.105)
X	Musculoskeletal	Nanchang	1.081 (1.062,1.102)	1.06 (1.038,1.082)	1.064 (1.042,1.087)	1.065 (1.043,1.087)
		Ganzhou	1.038 (1.012,1.065)	1.021 (0.994,1.049)	1.028 (1,1.058)	1.022 (0.994,1.051)
		Ji'an	1.089 (1.055,1.125)	1.05 (1.016,1.085)	1.074 (1.037,1.111)	1.053 (1.019,1.089)
		Shangrao	1.144 (1.115,1.174)	1.109 (1.079,1.139)	1.114 (1.083,1.146)	1.107 (1.077,1.139)

Table S8. Variance Inflation Factors (VIFs) for Two-Pollutant Models Across All Cities

City	Model	NO2_VIF
Nanchang	NO2 + PM2.5	1.688
	NO2 + PM10	1.912
	NO2 + SO2	2.068
	NO2 + CO	1.915
	NO2 + O38h	1.316
Ganzhou	NO2 + PM2.5	1.558
	NO2 + PM10	1.895
	NO2 + SO2	1.64
	NO2 + CO	1.414
	NO2 + O38h	1.309
Ji'an	NO2 + PM2.5	2.311
	NO2 + PM10	2.327
	NO2 + SO2	2.294
	NO2 + CO	2.147
	NO2 + O38h	1.854
Shangrao	NO2 + PM2.5	2.012
	NO2 + PM10	2.095
	NO2 + SO2	2.113
	NO2 + CO	2.182
	NO2 + O38h	1.602

Table S9. Sensitivity Analysis of NO₂ Associations After Excluding January–March 2023 to Account for the Early COVID-19 Wave

ICD-10 Code	City	Original Model RR (95% CI)	Excl. 2023 Q1 RR (95% CI)	P_difference
I. Endocrine, nutritional and metabolic diseases (E00–E90)	Nanchang	1.059 (1.031-1.087)	1.092 (1.061-1.124)	0.1185
	Ganzhou	1.048 (1.016-1.081)	1.009 (0.979-1.040)	0.0852
	Ji'an	1.118 (1.078-1.160)	1.087 (1.047-1.129)	0.2964
	Shangrao	1.087 (1.050-1.125)	1.050 (1.013-1.088)	0.1722
II. Mental and behavioural disorders (F00–F99)	Nanchang	1.045 (1.008-1.084)	1.076 (1.034-1.120)	0.2941
	Ganzhou	1.138 (1.089-1.189)	1.084 (1.036-1.135)	0.1341
	Ji'an	1.220 (1.143-1.302)	1.210 (1.124-1.303)	0.8712
	Shangrao	1.290 (1.185-1.404)	1.261 (1.153-1.379)	0.7183
III. Nervous system diseases (G00–G99)	Nanchang	1.054 (1.020-1.089)	1.089 (1.050-1.129)	0.187
	Ganzhou	1.077 (1.042-1.112)	1.039 (1.005-1.074)	0.1296
	Ji'an	1.133 (1.085-1.184)	1.141 (1.087-1.197)	0.8513
	Shangrao	1.145 (1.096-1.196)	1.130 (1.079-1.183)	0.6833
IV. Diseases of the eye and adnexa (H00–H59)	Nanchang	1.020 (0.990-1.051)	1.033 (1.002-1.065)	0.5552
	Ganzhou	0.937 (0.884-0.994)	0.920 (0.869-0.973)	0.6515
	Ji'an	1.184 (1.107-1.266)	1.132 (1.050-1.220)	0.3812
	Shangrao	0.781 (0.713-0.857)	0.746 (0.684-0.814)	0.4745
V. Diseases of the ear and mastoid process (H60–H95)	Nanchang	1.021 (0.996-1.047)	1.032 (1.004-1.060)	0.586
	Ganzhou	1.019 (0.983-1.057)	0.995 (0.959-1.033)	0.3683
	Ji'an	1.028 (0.989-1.068)	1.020 (0.978-1.063)	0.789
	Shangrao	1.073 (1.032-1.116)	1.023 (0.981-1.068)	0.1057

VI. Cardiovascular diseases (I00–I99)	Nanchang	1.072 (1.040-1.105)	1.104 (1.068-1.142)	0.1988
	Ganzhou	1.096 (1.064-1.129)	1.048 (1.018-1.079)	0.0332*
	Ji'an	1.168 (1.128-1.210)	1.149 (1.108-1.191)	0.5127
	Shangrao	1.121 (1.085-1.158)	1.083 (1.048-1.119)	0.1386
VII. Respiratory diseases (J00–J99)	Nanchang	1.105 (1.076-1.135)	1.056 (1.034-1.079)	0.0100**
	Ganzhou	1.072 (1.032-1.114)	1.032 (1.001-1.063)	0.1214
	Ji'an	1.143 (1.097-1.192)	1.080 (1.046-1.116)	0.0357*
	Shangrao	1.145 (1.099-1.193)	1.034 (1.000-1.069)	0.0002**
VIII. Digestive diseases (K00–K93)	Nanchang	1.038 (1.016-1.060)	1.064 (1.041-1.087)	0.1085
	Ganzhou	1.016 (0.991-1.041)	0.988 (0.964-1.013)	0.1184
	Ji'an	1.065 (1.035-1.096)	1.050 (1.019-1.081)	0.4927
	Shangrao	1.069 (1.041-1.098)	1.037 (1.009-1.065)	0.113
IX. Skin and subcutaneous tissue diseases (L00–L99)	Nanchang	1.051 (1.023-1.078)	1.067 (1.038-1.096)	0.4283
	Ganzhou	0.988 (0.953-1.026)	0.975 (0.938-1.014)	0.6228
	Ji'an	1.072 (1.033-1.113)	1.063 (1.019-1.109)	0.7569
	Shangrao	1.071 (1.031-1.113)	1.055 (1.013-1.100)	0.6034
X. Musculoskeletal diseases (M00–M99)	Nanchang	1.033 (1.010-1.057)	1.064 (1.039-1.090)	0.0774
	Ganzhou	1.001 (0.974-1.029)	0.978 (0.952-1.006)	0.2434
	Ji'an	1.038 (1.004-1.073)	1.021 (0.987-1.057)	0.5027
	Shangrao	1.091 (1.060-1.122)	1.062 (1.032-1.094)	0.2099