

Supplemental Online Content

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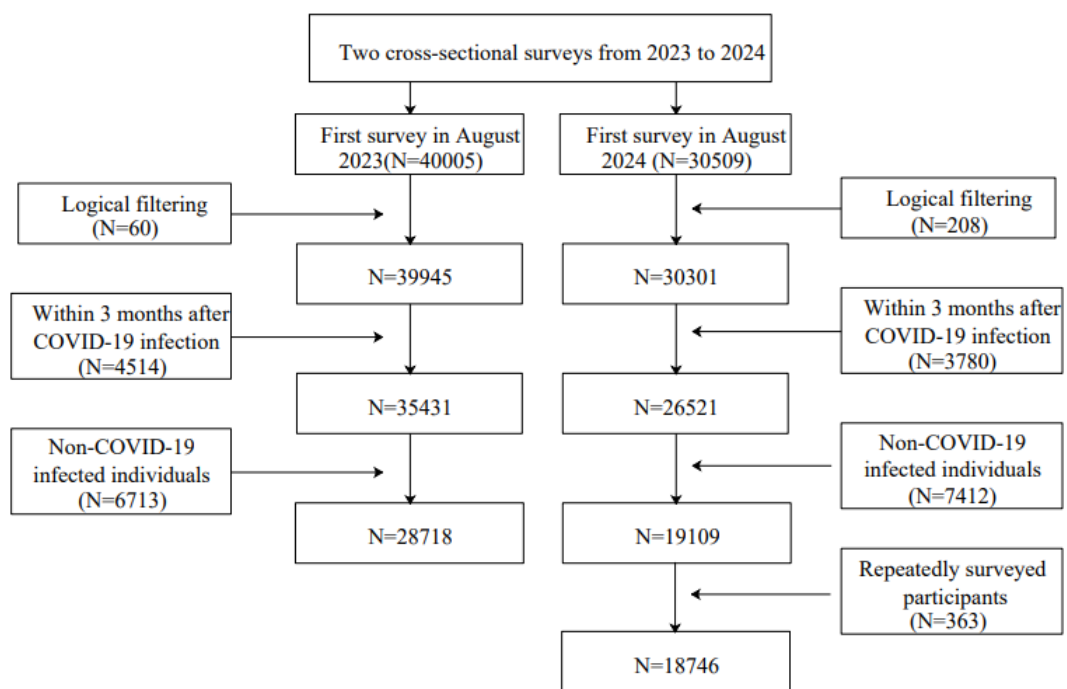


Figure S1. Study Flowchart

Figure S1. Study Flowchart

Table S1. Health-Related Characteristics of Participants

	Participants, No. (%)			<i>P</i> value
	All	no long COVID (N = 22621)	long COVID (N = 24843)	
Lifestyle and disease history				
Drinking				
No	34723 (73.2)	17532 (77.5)	17191 (69.2)	<0.001
Yes	12741 (26.8)	5089 (22.5)	7652 (30.8)	
Regular sleep-wake				
No	17878 (37.7)	7234 (32.0)	10644 (42.8)	<0.001
Yes	29586 (62.3)	15387 (68.0)	14199 (57.2)	
Electronic entertainment time				
≤5 h/d	28552 (60.2)	13948 (61.7)	14604 (58.8)	<0.001
>5 h/d	18912 (39.8)	8673 (38.3)	10239 (41.2)	
Chronic diseases ^a				
No	38218 (80.5)	20249 (89.5)	17969 (72.3)	<0.001
Yes	9246 (19.5)	2372 (10.5)	6874 (27.7)	
Mental diseases ^b				
No	30636 (64.5)	18062 (79.8)	12574 (50.6)	<0.001
Yes	16828 (35.5)	4559 (20.2)	12269 (49.4)	
Frequency of COVID-19 infections				
1	34011 (71.7)	17457 (77.2)	16554 (66.6)	<0.001
>1	13453 (28.3)	5164 (22.8)	8289 (33.4)	
Dietary habits				
Diet type				
Vegetarian or meat oriented	8364 (17.6)	3122 (13.8)	5242 (21.1)	<0.001
Combination of meat and vegetable diets	39100 (82.4)	19499 (86.2)	19601 (78.9)	

Eating vegetables every day

No	31098 (65.5)	13990 (61.8)	17108 (68.9)	<0.001
Yes	16366 (34.5)	8631 (38.2)	7735 (31.1)	

Eating fruits every day

No	37399 (78.8)	17223 (76.1)	20176 (81.2)	<0.001
Yes	10065 (21.2)	5398 (23.9)	4667 (18.8)	

Eating dairy products every day

No	40256 (84.8)	18634 (82.4)	21622 (87.0)	<0.001
Yes	7208 (15.2)	3987 (17.6)	3221 (13.0)	

Eating animal foods every day

No	34709 (73.1)	15937 (70.5)	18772 (75.6)	<0.001
Yes	12755 (26.9)	6684 (29.5)	6071 (24.4)	

Living environment**Sunbathing at home**

<5 h/d	12391 (26.1)	5200 (23.0)	7191 (28.9)	<0.001
≥5 h/d	35073 (73.9)	17421 (77.0)	17652 (71.1)	

Satisfactory neighborhood relationship

No	5000 (10.5)	1579 (7.0)	3421 (13.8)	<0.001
Yes	42464 (89.5)	21042 (93.0)	21422 (86.2)	

Satisfactory community environment

No	7606 (16.0)	2491 (11.0)	5115 (20.6)	<0.001
Yes	39858 (84.0)	20130 (89.0)	19728 (79.4)	

^a Chronic diseases include hypertension, cardiovascular and cerebrovascular diseases, diabetes, chronic obstructive pulmonary disease (COPD), other respiratory diseases, chronic liver disease, chronic kidney disease, malignant tumors;

^b Mental diseases include anxiety, depression, insomnia.

Table S2. Prevalence of symptoms at months 3, 6, 12, 9, 12, 15, 18, 21 and 24 after COVID-19 infection

	General	Cardiovascular	Respiratory	Neural	Digestive
Survey data in 2023					
3 months	58.2	23.3	40.5	47.6	30.7
6 months	49.9	18.8	33.9	39.2	24.8
Survey data in 2024					
3 months	70.1	35.3	54.4	61.2	45.4
6 months	59.2	23.8	41.2	48.9	30.5
9 months	59.7	25.1	41.4	49.8	30.2
12 months	60.1	27.9	42.3	49.5	32.6
15 months	51.6	20.4	34.6	44.2	27.6
18 months	50.8	19.1	31.6	40.9	23.5
21 months	52	21.9	33	43.6	26.8
24 months	56.5	29.5	40.4	46.1	33.3

Table S3. Logistic Regression Analysis of Association between Characteristics and Long COVID

	Univariate analysis		Multivariate analysis	
	OR (95%CI)	<i>P</i> value	OR (95%CI)	<i>P</i> value
Individual basic information				
Age				
<18 years	Reference		Reference	
18-59 years	1.47 (1.37-1.59)	<0.001	1.21 (1.11-1.32)	<0.001
≥60 years	1.61 (1.38-1.89)	<0.001	0.92 (0.75-1.14)	0.450
Gender				
Male	Reference		Reference	
Female	1.03 (0.99-1.06)	0.173	1.17 (1.12-1.22)	<0.001
Living area				
Urban	Reference		Reference	
Rural	0.86 (0.82-0.89)	<0.001	0.88 (0.84-0.92)	<0.001
Working status				
Employment	Reference		Reference	
Unemployment	1.82 (1.69-1.96)	<0.001	1.25 (1.15-1.36)	<0.001
Retirement	1.40 (1.24-1.58)	<0.001	1.24 (1.06-1.46)	0.009
Marital status				
Unmarried or divorced, widowed	Reference		Reference	
Married	1.49 (1.43-1.55)	<0.001	1.39 (1.32-1.46)	<0.001
Level of education				
Less than junior college	Reference		Reference	
Junior college or higher	0.93 (0.89-0.97)	<0.001	NA	NA
Per capita monthly income, ¥				
<1500	Reference		Reference	
1500-5000	0.95 (0.90-1.01)	0.113	NA	NA

>5000	0.93 (0.87-0.99)	0.020	NA	NA
Vaccine doses				
0-1	Reference		Reference	
2	0.74 (0.68-0.81)	<0.001	0.85 (0.77-0.93)	0.001
3	0.77 (0.71-0.84)	<0.001	0.87 (0.79-0.95)	0.002
≥4	0.75 (0.66-0.86)	<0.001	0.81 (0.70-0.93)	0.003
Lifestyle and disease history				
Drinking				
No	Reference		Reference	
Yes	1.53 (1.47-1.6)	<0.001	1.23 (1.17-1.29)	<0.001
Regular sleep-wake				
No	Reference		Reference	
Yes	0.63 (0.60-0.65)	<0.001	0.81 (0.77-0.84)	<0.001
Electronic entertainment time				
≤5 h/d	Reference		Reference	
>5 h/d	1.13 (1.09-1.17)	<0.001	NA	NA
Chronic diseases^a				
No	Reference		Reference	
Yes	3.27 (3.10-3.44)	<0.001	2.19 (2.07-2.31)	<0.001
Mental diseases^b				
No	Reference		Reference	
Yes	3.87 (3.71-4.03)	<0.001	2.98 (2.85-3.11)	<0.001
Frequency of COVID-19 infections				
1	Reference		Reference	
>1	1.69 (1.63-1.76)	<0.001	1.53 (1.47-1.60)	<0.001
Dietary habits				
Diet type				

Vegetarian or meat oriented	Reference		Reference	
Combination of meat and vegetable diets	0.60 (0.57-0.63)	<0.001	0.83 (0.78-0.87)	<0.001
Eating vegetables every day				
No	Reference		Reference	
Yes	0.73 (0.71-0.76)	<0.001	0.83 (0.79-0.88)	<0.001
Eating fruits every day				
No	Reference		Reference	
Yes	0.74 (0.71-0.77)	<0.001	1.06 (1.00-1.14)	0.066
Eating dairy products every day				
No	Reference		Reference	
Yes	0.70 (0.66-0.73)	<0.001	0.91 (0.85-0.98)	0.012
Eating animal foods every day				
No	Reference		Reference	
Yes	0.77 (0.74-0.80)	<0.001	0.91 (0.86-0.96)	0.001
Living environment				
Sunbathing at home				
<5h/d	Reference		Reference	
≥5h/d	0.73 (0.7-0.76)	<0.001	0.93 (0.89-0.98)	0.004
Satisfactory neighborhood relationship				
No	Reference		Reference	
Yes	0.47 (0.44-0.50)	<0.001	0.81 (0.75-0.87)	<0.001
Satisfactory community environment				
No	Reference		Reference	
Yes	0.48 (0.45-0.50)	<0.001	0.71 (0.66-0.75)	<0.001

Abbreviation: OR, odds ratio; CI, confidence interval; NA, not applicable;

^a Chronic diseases include hypertension, cardiovascular and cerebrovascular diseases, diabetes, chronic obstructive pulmonary disease (COPD), other respiratory diseases, chronic liver disease, chronic kidney

disease, malignant tumors;

^b Mental diseases include anxiety, depression, insomnia.

Table S4. Multivariate Logistic Regression Analysis of Association between Characteristics and Long COVID Categories

	General		Cardiovascular		Respiratory		Neural		Digestive	
	OR (95%CI)	<i>P</i>	OR (95%CI)	<i>P</i>	OR (95%CI)	<i>P</i>	OR (95%CI)	<i>P</i>	OR (95%CI)	<i>P</i>
		value		value		value		value		value
Individual basic information										
Age										
<18 years	Reference		Reference		Reference		Reference		Reference	
18-59 years	1.43 (1.32-	<0.00	1.40 (1.23-	<0.00	1.17 (1.07-	<0.00	1.17 (1.07-	<0.00	NA	NA
	1.55)	1	1.58)	1	1.28)	1	1.28)	1		
≥60 years	1.11 (0.91-	0.310	1.61 (1.27-	<0.00	1.01 (0.83-	0.898	0.79 (0.64-	0.024	NA	NA
	1.36)		2.03)	1	1.25)	0.97)				
Gender										
Male	Reference		Reference		Reference		Reference		Reference	
Female	1.22 (1.17-	<0.00	NA	NA	0.93 (0.89-	0.003	1.2 (1.14-	<0.00	NA	NA
	1.27)	1			0.98)	1.25)	1			
Living area										
Urban	Reference		Reference		Reference		Reference		Reference	
Rural	0.86 (0.82-	<0.00	0.88 (0.83-	<0.00	0.93 (0.89-	0.002	0.89 (0.85-	<0.00	0.92 (0.88-	0.001
	0.90)	1	0.93)	1	0.98)	0.93)	1	0.97)		
Working status										

Employment	Reference		Reference		Reference		Reference		Reference	
Unemployment	1.19 (1.10-	<0.00	1.43 (1.31-	<0.00	1.23 (1.13-	<0.00	1.27 (1.17-	<0.00	1.31 (1.21-	<0.00
	1.29)	1	1.57)	1	1.33)	1	1.38)	1	1.42)	1
Retirement	1.07 (0.91-	0.435	1.45 (1.22-	<0.00	1.04 (0.89-	0.641	1.19 (1.02-	0.032	0.95 (0.82-	0.456
	1.25)		1.73)	1	1.22)	1.40)	1.10)			
Marital status										
Unmarried or divorced, widowed	Reference		Reference		Reference		Reference		Reference	
Married	1.35 (1.29-	<0.00	1.38 (1.30-	<0.00	1.12 (1.07-	<0.00	1.57 (1.50-	<0.00	1.09 (1.03-	0.002
	1.42)	1	1.46)	1	1.18)	1	1.65)	1	1.15)	
Level of education										
Less than junior college	Reference		Reference		Reference		Reference		Reference	
Junior college or higher	NA	NA	0.88 (0.83-	<0.00	NA	NA	NA	NA	NA	NA
			0.94)	1						
Per capita monthly income										
<1500	Reference		Reference		Reference		Reference		Reference	
1500-5000	0.94 (0.88-	0.065	0.95 (0.88-	0.204	0.93 (0.87-	0.042	0.98 (0.92-	0.625	0.92 (0.86-	0.026
	1.00)		1.03)		1.00)		1.05)		0.99)	
>5000	0.93 (0.87-	0.045	1.02 (0.94-	0.660	0.98 (0.92-	0.627	0.93 (0.86-	0.038	0.93 (0.87-	0.081
	1.00)		1.11)		1.05)		1.00)		1.01)	
Vaccine doses										

0-1	Reference		Reference		Reference		Reference		Reference	
2	NA	NA	0.74 (0.67- 0.83)	<0.00 1	0.84 (0.77- 0.92)	<0.00 1	0.85 (0.78- 0.94)	0.001	0.82 (0.75- 0.91)	<0.00 1
3	NA	NA	0.68 (0.61- 0.75)	<0.00 1	0.85 (0.78- 0.93)	<0.00 1	0.85 (0.78- 0.93)	<0.00 1	0.75 (0.68- 0.82)	<0.00 1
≥4	NA	NA	0.70 (0.59- 0.82)	<0.00 1	0.82 (0.72- 0.95)	0.007	0.77 (0.67- 0.89)	<0.00 1	0.71 (0.61- 0.83)	<0.00 1

Lifestyle and disease history

Drinking

No	Reference		Reference		Reference		Reference		Reference	
Yes	1.15 (1.10- 1.21)	<0.00 1	1.35 (1.28- 1.43)	<0.00 1	1.23 (1.17- 1.29)	<0.00 1	1.22 (1.16- 1.28)	<0.00 1	1.37 (1.30- 1.43)	<0.00 1

Regular sleep-wake

No	Reference		Reference		Reference		Reference		Reference	
Yes	0.86 (0.83- 0.90)	<0.00 1	NA	NA	0.93 (0.89- 0.98)	0.002	0.82 (0.78- 0.85)	<0.00 1	0.88 (0.84- 0.92)	<0.00 1

Chronic diseases^a

No	Reference		Reference		Reference		Reference		Reference	
Yes	1.76 (1.67- 1.86)	<0.00 1	3.13 (2.97- 3.31)	<0.00 1	1.99 (1.89- 2.09)	<0.00 1	1.97 (1.86- 2.07)	<0.00 1	1.73 (1.64- 1.82)	<0.00 1

Mental diseases^b

No	Reference		Reference		Reference		Reference		Reference	
Yes	2.45 (2.35-	<0.00	3.07 (2.93-	<0.00	2.18 (2.09-	<0.00	3.16 (3.03-	<0.00	2.86 (2.73-	<0.00
	2.56)	1	3.23)	1	2.28)	1	3.30)	1	2.99)	1

Frequency of COVID-19 infections

1	Reference		Reference		Reference		Reference		Reference	
>1	1.51 (1.44-	<0.00	1.48 (1.41-	<0.00	1.49 (1.43-	<0.00	1.48 (1.42-	<0.00	1.48 (1.41-	<0.00
	1.57)	1	1.56)	1	1.56)	1	1.55)	1	1.55)	1

Dietary habits**Diet type**

Vegetarian or meat oriented	Reference		Reference		Reference		Reference		Reference	
Combination of meat and vegetable diets	0.87 (0.83-	<0.00	0.78 (0.74-	<0.00	0.94 (0.89-	0.012	0.82 (0.78-	<0.00	0.8 (0.76-	<0.00
	0.92)	1	0.83)	1	0.99)		0.87)	1	0.84)	1

Eating vegetables every day

No	Reference		Reference		Reference		Reference		Reference	
Yes	0.81 (0.77-	<0.00	0.73 (0.68-	<0.00	0.76 (0.72-	<0.00	0.90 (0.85-	<0.00	0.76 (0.72-	<0.00
	0.85)	1	0.77)	1	0.80)	1	0.94)	1	0.80)	1

Eating fruits every day

No	Reference		Reference		Reference		Reference		Reference	
Yes	NA	NA	NA	NA	1.06 (0.99-	0.088	NA	NA	NA	NA

1.13)										
Eating dairy products every day										
No	Reference		Reference		Reference		Reference		Reference	
Yes	NA	NA	NA	NA	NA	NA	0.88 (0.82-0.94)	<0.001	NA	NA
Eating animal foods every day										
No	Reference		Reference		Reference		Reference		Reference	
Yes	0.89 (0.85-0.94)	<0.001	0.90 (0.84-0.96)	0.001	0.87 (0.82-0.92)	<0.001	0.92 (0.87-0.98)	0.006	0.85 (0.80-0.91)	<0.001
Living environment										
Sunbathing at home										
<5h/d	Reference		Reference		Reference		Reference		Reference	
≥5h/d	0.94 (0.90-0.98)	0.005	0.88 (0.83-0.93)	<0.001	0.96 (0.91-1.00)	0.076	0.92 (0.88-0.96)	<0.001	0.91 (0.87-0.96)	<0.001
Satisfactory neighborhood relationship										
No	Reference		Reference		Reference		Reference		Reference	
Yes	0.83 (0.77-0.89)	<0.001	0.67 (0.62-0.73)	<0.001	0.74 (0.69-0.79)	<0.001	0.81 (0.75-0.87)	<0.001	0.65 (0.60-0.70)	<0.001
Satisfactory community										

environment

No	Reference		Reference		Reference		Reference		Reference	
Yes	0.78 (0.74-	<0.00	0.82 (0.76-	<0.00	0.84 (0.79-	<0.00	0.71 (0.66-	<0.00	0.84 (0.79-	<0.00
	0.83)	1	0.87)	1	0.89)	1	0.75)	1	0.9)	1

Abbreviation: OR, odds ratio; CI, confidence interval; NA, not applicable;

^a Chronic diseases include hypertension, cardiovascular and cerebrovascular diseases, diabetes, chronic obstructive pulmonary disease (COPD), other respiratory diseases, chronic liver disease, chronic kidney disease, malignant tumors;

^b Mental diseases include anxiety, depression, insomnia.

Table S5. Age-stratified Sensitivity Analysis of Logistic Regression for Associations between Characteristics and Long COVID

	< 18 years old				18-59 years old				≥60 years old			
	Crude RR	P	Adjusted	P	Crude RR	P	Adjusted	P	Crude RR	P	Adjusted	P
	(95%CI)	value	RR	value	(95%CI)	value	RR	value	(95%CI)	value	RR	value
			(95%CI)				(95%CI)				(95%CI)	
Individual basic information												
Gender												
Male	Reference		Reference		Reference		Reference		Reference		Reference	
Female	1.51 (1.30-1.75)	<0.001	1.29 (1.09-1.53)	0.003	1.00 (0.96-1.04)	0.976	1.16 (1.11-1.22)	<0.001	0.86 (0.65-1.14)	0.296	NA	NA
Living area												
Urban	Reference		Reference		Reference		Reference		Reference		Reference	
Rural	0.94 (0.81-1.09)	0.412	NA	NA	0.86 (0.83-0.9)	<0.001	0.87 (0.83-0.91)	<0.001	0.83 (0.63-1.11)	0.218	NA	NA
Working status												
Employment	Reference		Reference		Reference		Reference		Reference		Reference	
Unemployment	5.11 (2.07-12.59)	<0.001	2.82 (1.04-7.65)	0.041	1.79 (1.66-1.93)	<0.001	1.25 (1.15-1.36)	<0.001	1.05 (0.63-1.74)	0.853	NA	NA
Retirement	1.60 (0.49-5.25)	0.439	1.75 (0.47-6.56)	0.405	1.63 (1.37-1.94)	<0.001	1.24 (1.02-1.49)	0.028	1.03 (0.71-1.49)	0.867	NA	NA

Marital status

Unmarried or divorced, widowed	Reference		Reference		Reference		Reference		Reference		Reference	
Married	2.45 (1.24- 4.83)	0.01	1.78 (0.82- 3.85)	0.14 5	1.48 (1.42- 1.54)	<0.0 01	1.39 (1.33- 1.46)	<0.0 01	0.50 (0.31- 0.80)	0.00 4	0.65 (0.37- 1.13)	0.12 5

Level of education

Less than junior college	Reference		Reference		Reference		Reference		Reference		Reference	
Junior college or higher	1.02 (0.82- 1.27)	0.834	NA	NA	0.84 (0.8- 0.88)	<0.0 01	NA	NA	1.43 (0.99- 2.06)	0.05 8	NA	NA

**Per capita monthly income,
¥**

<1500	Reference		Reference		Reference		Reference		Reference		Reference	
1500-5000	1.00 (0.80- 1.25)	0.989	NA	NA	0.95 (0.89- 1.01)	0.08 6	NA	NA	0.79 (0.55- 1.12)	0.18 7	1.05 (0.70- 1.57)	0.81 4
>5000	0.96 (0.76- 1.21)	0.734			0.92 (0.86- 0.98)	0.01 3	NA	NA	1.21 (0.79- 1.84)	0.37 7	1.68 (1.03- 2.72)	0.03 6

Vaccine doses

0-1	Reference		Reference		Reference		Reference		Reference		Reference	
2	0.90 (0.70- 1.17)	0.447	NA	NA	0.73 (0.67- 0.81)	<0.0 01	0.85 (0.77- 0.94)	0.00 1	0.60 (0.35- 1.05)	0.07 3	NA	NA

Yes	3.22 (2.50- 4.16)	<0.00 1	1.97 (1.48- 2.61)	<0.0 01	3.24 (3.07- 3.41)	<0.0 01	2.16 (2.03- 2.28)	<0.0 01	4.96 (3.66- 6.73)	<0.0 01	4.20 (3.03- 5.83)	<0.0 01
Mental diseases^b												
No	Reference		Reference		Reference		Reference		Reference		Reference	
Yes	4.72 (4.01- 5.55)	<0.00 1	3.25 (2.72- 3.89)	<0.0 01	3.83 (3.67- 3.99)	<0.0 01	2.96 (2.83- 3.10)	<0.0 01	4.71 (3.21- 6.91)	<0.0 01	2.88 (1.89- 4.36)	<0.0 01
Frequency of COVID-19 infections												
1	Reference		Reference		Reference		Reference		Reference		Reference	
>1	1.65 (1.40- 1.95)	<0.00 1	1.40 (1.16- 1.68)	<0.0 01	1.69 (1.62- 1.77)	<0.0 01	1.54 (1.48- 1.62)	<0.0 01	1.66 (1.17- 2.36)	0.00 4	NA	NA
Dietary habits												
Diet type												
Vegetarian or meat oriented	Reference		Reference		Reference		Reference		Reference		Reference	
Combination of meat and vegetable diets	0.51 (0.42- 0.62)	<0.00 1	0.74 (0.59- 0.93)	0.00 8	0.61 (0.58- 0.64)	<0.0 01	0.83 (0.79- 0.88)	<0.0 01	0.55 (0.38- 0.78)	0.00 1	NA	NA
Eating vegetables every day												
No	Reference		Reference		Reference		Reference		Reference		Reference	
Yes	0.85 (0.73- 0.99)	0.033	NA	NA	0.73 (0.70- 0.76)	<0.0 01	0.83 (0.79- 0.88)	<0.0 01	0.59 (0.44- 0.79)	<0.0 01	0.56 (0.41- 0.78)	0.00 1

Eating fruits every day

No	Reference		Reference		Reference		Reference		Reference		Reference	
Yes	0.71 (0.61-	<0.00	0.82 (0.68-	0.02	0.75 (0.72-	<0.0	1.08 (1.01-	0.02	0.64 (0.47-	0.00	NA	NA
	0.84)	1	0.97)	4	0.79)	01	1.16)	9	0.88)	6		

Eating dairy products every day

No	Reference		Reference		Reference		Reference		Reference		Reference	
Yes	0.70 (0.59-	<0.00	NA	NA	0.71 (0.67-	<0.0	0.91 (0.85-	0.01	0.79 (0.57-	0.16	NA	NA
	0.83)	1			0.74)	01	0.98)	3	1.10)	1		

Eating animal foods every day

No	Reference		Reference		Reference		Reference		Reference		Reference	
Yes	0.89 (0.76-	0.132	NA	NA	0.77 (0.74-	<0.0	0.9 (0.85-	<0.0	0.77 (0.56-	0.10	NA	NA
	1.04)				0.80)	01	0.95)	01	1.05)	1		

Living environment
Sunbathing at home

<5h/d	Reference		Reference		Reference		Reference		Reference		Reference	
≥5h/d	0.62 (0.52-	<0.00	NA	NA	0.74 (0.71-	<0.0	0.93 (0.89-	0.00	0.61 (0.41-	0.01	NA	NA
	0.73)	1			0.77)	01	0.98)	6	0.90)	4		

Satisfactory neighborhood relationship												
No	Reference		Reference		Reference		Reference		Reference		Reference	
Yes	0.49 (0.38-0.63)	<0.001	NA	NA	0.47 (0.44-0.50)	<0.001	0.81 (0.75-0.88)	<0.001	0.35 (0.19-0.63)	0.001	0.50 (0.25-1.00)	0.052
Satisfactory community environment												
No	Reference		Reference		Reference		Reference		Reference		Reference	
Yes	0.45 (0.37-0.55)	<0.001	0.70 (0.56-0.86)	0.001	0.48 (0.45-0.51)	<0.001	0.71 (0.66-0.75)	<0.001	0.33 (0.20-0.55)	<0.001	NA	NA

Abbreviation: OR, odds ratio; CI, confidence interval; NA, not applicable;

^a Chronic diseases include hypertension, cardiovascular and cerebrovascular diseases, diabetes, chronic obstructive pulmonary disease (COPD), other respiratory diseases, chronic liver disease, chronic kidney disease, malignant tumors;

^b Mental diseases include anxiety, depression, insomnia.

Table S6. Survey time–stratified Sensitivity Analysis of Logistic Regression for Associations between Characteristics and Long COVID

	Participants in 2023				Participants in 2024			
	Crude RR	<i>P</i>	Adjusted RR	<i>P</i>	Crude RR	<i>P</i> value	Adjusted RR	<i>P</i> value
	(95%CI)	value	(95%CI)	value	(95%CI)		(95%CI)	
Individual basic information								
Age								
<18 years	Reference		Reference		Reference		Reference	
18-59 years	1.38 (1.26-1.52)	<0.001	1.16 (1.04-1.29)	0.007	1.63 (1.44-1.85)	<0.001	1.32 (1.15-1.52)	<0.001
≥60 years	1.40 (1.15-1.71)	0.001	0.76 (0.59-0.98)	0.036	2.08 (1.59-2.73)	<0.001	1.32 (0.92-1.89)	0.13
Gender								
Male	Reference		Reference		Reference		Reference	
Female	1.02 (0.97-1.07)	0.466	1.19 (1.12-1.26)	<0.001	1.03 (0.97-1.09)	0.355	1.13 (1.05-1.21)	0.001
Living area								
Urban	Reference		Reference		Reference		Reference	
Rural	0.85 (0.81-0.89)	<0.001	0.86 (0.81-0.91)	<0.001	0.88 (0.82-0.93)	<0.001	0.92 (0.85-0.98)	0.016
Working status								
Employment	Reference		Reference		Reference		Reference	
Unemployment	1.80 (1.64-1.97)	<0.001	1.23 (1.11-1.37)	<0.001	1.91 (1.68-2.17)	<0.001	1.29 (1.11-1.48)	0.001
Retirement	1.36 (1.17-1.59)	<0.001	1.35 (1.10-1.65)	0.004	1.48 (1.21-1.81)	<0.001	1.06 (0.80-1.39)	0.698
Marital status								

Unmarried or divorced, widowed	Reference		Reference		Reference		Reference	
Married	1.41 (1.34-1.49)	<0.001	1.31 (1.23-1.39)	<0.001	1.64 (1.54-1.75)	<0.001	1.54 (1.42-1.67)	<0.001
Level of education								
Less than junior college	Reference		Reference		Reference		Reference	
Junior college or higher	0.92 (0.88-0.97)	0.001	NA	NA	0.93 (0.87-0.99)	0.02	NA	NA
Per capita monthly income, ¥								
<1500	Reference		Reference		Reference		Reference	
1500-5000	0.91 (0.84-0.98)	0.009	0.92 (0.85-1.00)	0.058	1.03 (0.93-1.13)	0.593	NA	NA
>5000	0.91 (0.84-0.98)	0.014	0.95 (0.87-1.04)	0.305	0.96 (0.87-1.06)	0.42	NA	NA
Vaccine doses								
0-1	Reference		Reference		Reference		Reference	
2	0.55 (0.49-0.62)	<0.001	0.66 (0.58-0.76)	<0.001	0.97 (0.86-1.09)	0.611	1.05 (0.93-1.20)	0.422
3	0.56 (0.49-0.63)	<0.001	0.67 (0.58-0.76)	<0.001	1.11 (0.99-1.24)	0.083	1.14 (1.00-1.29)	0.047
≥4	0.55 (0.46-0.66)	<0.001	0.64 (0.53-0.78)	<0.001	1.01 (0.83-1.23)	0.929	0.98 (0.79-1.21)	0.852
Lifestyle and disease history								
Drinking								
No	Reference		Reference		Reference		Reference	
Yes	1.55 (1.47-1.63)	<0.001	1.19 (1.12-1.27)	<0.001	1.52 (1.42-1.63)	<0.001	1.28 (1.18-1.39)	<0.001
Regular sleep-wake								
No	Reference		Reference		Reference		Reference	

Yes	0.62 (0.59-0.65)	<0.001	0.82 (0.77-0.86)	<0.001	0.64 (0.60-0.68)	<0.001	0.79 (0.74-0.85)	<0.001
Electronic entertainment time								
≤5 h/d	Reference		Reference		Reference		Reference	
>5 h/d	1.11 (1.06-1.17)	<0.001	NA	NA	1.14 (1.08-1.21)	<0.001	1.07 (1.00-1.14)	0.068
Chronic diseases^a								
No	Reference		Reference		Reference		Reference	
Yes	3.23 (3.03-3.44)	<0.001	2.18 (2.03-2.34)	<0.001	3.35 (3.08-3.64)	<0.001	2.21 (2.02-2.42)	<0.001
Mental diseases^b								
No	Reference		Reference		Reference		Reference	
Yes	3.90 (3.70-4.12)	<0.001	2.98 (2.82-3.15)	<0.001	3.80 (3.56-4.06)	<0.001	2.98 (2.78-3.20)	<0.001
Frequency of COVID-19 infections								
1	Reference		Reference		Reference		Reference	
>1	1.67 (1.58-1.76)	<0.001	1.47 (1.39-1.56)	<0.001	1.70 (1.60-1.82)	<0.001	1.58 (1.48-1.69)	<0.001
Dietary habits								
Diet type								
Vegetarian or meat oriented	Reference		Reference		Reference		Reference	
Combination of meat and vegetable diets	0.59 (0.56-0.63)	<0.001	0.84 (0.78-0.89)	<0.001	0.60 (0.56-0.65)	<0.001	0.81 (0.74-0.88)	<0.001
Eating vegetables every day								
No	Reference		Reference		Reference		Reference	
Yes	0.72 (0.69-0.76)	<0.001	0.83 (0.78-0.89)	<0.001	0.75 (0.70-0.79)	<0.001	0.83 (0.76-0.90)	<0.001

Eating fruits every day

No	Reference		Reference		Reference		Reference	
Yes	0.71 (0.67-0.75)	<0.001	NA	NA	0.78 (0.73-0.84)	<0.001	1.16 (1.04-1.29)	0.005

Eating dairy products every day

No	Reference		Reference		Reference		Reference	
Yes	0.70 (0.65-0.74)	<0.001	0.93 (0.86-1.01)	0.096	0.70 (0.64-0.76)	<0.001	0.90 (0.80-1.00)	0.054

Eating animal foods every day

No	Reference		Reference		Reference		Reference	
Yes	0.76 (0.72-0.81)	<0.001	0.91 (0.84-0.98)	0.011	0.78 (0.73-0.83)	<0.001	0.91 (0.83-0.99)	0.035

Living environment**Sunbathing at home**

<5h/d	Reference		Reference		Reference		Reference	
≥5h/d	0.76 (0.72-0.80)	<0.001	NA	NA	0.69 (0.65-0.74)	<0.001	0.87 (0.81-0.94)	<0.001

Satisfactory neighborhood relationship

No	Reference		Reference		Reference		Reference	
Yes	0.46 (0.42-0.50)	<0.001	0.78 (0.71-0.86)	<0.001	0.49 (0.44-0.54)	<0.001	0.85 (0.75-0.97)	0.012

Satisfactory community environment

No	Reference		Reference		Reference		Reference	
Yes	0.48 (0.45-0.51)	<0.001	0.71 (0.65-0.76)	<0.001	0.47 (0.44-0.52)	<0.001	0.71 (0.64-0.78)	<0.001

Abbreviation: OR, odds ratio; CI, confidence interval; NA, not applicable;

^a Chronic diseases include hypertension, cardiovascular and cerebrovascular diseases, diabetes, chronic obstructive pulmonary disease (COPD), other respiratory diseases, chronic liver disease, chronic kidney disease, malignant tumors;

^b Mental diseases include anxiety, depression, insomnia.

Table S7. Gender-stratified Sensitivity Analysis of Logistic Regression for Associations between Characteristics and Long COVID

	Female participants				Male participants			
	Crude RR	P	Adjusted RR	P	Crude RR	P value	Adjusted RR	P value
	(95%CI)	value	(95%CI)	value	(95%CI)		(95%CI)	
Individual basic information								
Age								
<18 years	Reference		Reference		Reference		Reference	
18-59 years	1.25 (1.13-1.38)	<0.001	1.15 (1.04-1.28)	0.009	1.88 (1.67-2.12)	<0.001	1.31 (1.15-1.50)	<0.001
≥60 years	1.28 (1.03-1.58)	0.023	0.70 (0.53-0.91)	0.009	2.24 (1.76-2.85)	<0.001	1.43 (1.02-1.99)	0.036
Living area								
Urban	Reference		Reference		Reference		Reference	
Rural	0.87 (0.83-0.92)	<0.001	0.91 (0.86-0.96)	0.001	0.83 (0.77-0.88)	<0.001	0.83 (0.77-0.89)	<0.001
Working status								
Employment	Reference		Reference		Reference		Reference	
Unemployment	1.53 (1.40-1.67)	<0.001	1.15 (1.04-1.27)	0.007	2.62 (2.29-3.01)	<0.001	1.51 (1.30-1.76)	<0.001
Retirement	1.49 (1.29-1.72)	<0.001	1.45 (1.20-1.76)	<0.001	1.17 (0.93-1.47)	0.174	0.87 (0.63-1.21)	0.405
Marital status								
Unmarried or divorced, widowed	Reference		Reference		Reference		Reference	
Married	1.39 (1.32-1.46)	<0.001	1.43 (1.34-1.52)	<0.001	1.68 (1.57-1.79)	<0.001	1.40 (1.29-1.52)	<0.001
Level of education								

Less than junior college	Reference		Reference		Reference		Reference	
Junior college or higher	0.94 (0.89-0.99)	0.018	NA	NA	0.91 (0.85-0.97)	0.002	NA	NA
Per capita monthly income, ¥								
<1500	Reference		Reference		Reference		Reference	
1500-5000	0.93 (0.86-1.00)	0.039	NA	NA	1.01 (0.91-1.11)	0.896	NA	NA
>5000	0.93 (0.86-1.00)	0.065	NA	NA	0.95 (0.85-1.05)	0.278	NA	NA
Vaccine doses								
0-1	Reference		Reference		Reference		Reference	
2	0.83 (0.74-0.92)	0.001	NA	NA	0.63 (0.55-0.72)	<0.001	0.77 (0.66-0.90)	0.001
3	0.87 (0.79-0.97)	0.011	NA	NA	0.64 (0.56-0.73)	<0.001	0.76 (0.65-0.88)	<0.001
≥4	0.87 (0.73-1.03)	0.110	NA	NA	0.62 (0.51-0.75)	<0.001	0.73 (0.59-0.90)	0.004
Lifestyle and disease history								
Drinking								
No	Reference		Reference		Reference		Reference	
Yes	1.83 (1.71-1.96)	<0.001	1.33 (1.23-1.43)	<0.001	1.56 (1.47-1.65)	<0.001	1.14 (1.07-1.22)	<0.001
Regular sleep-wake								
No	Reference		Reference		Reference		Reference	
Yes	0.61 (0.59-0.64)	<0.001	0.79 (0.75-0.84)	<0.001	0.65 (0.61-0.69)	<0.001	0.84 (0.78-0.91)	<0.001
Electronic entertainment time								
≤5h	Reference		Reference		Reference		Reference	

>5h	1.22 (1.17-1.28)	<0.001	1.08 (1.02-1.14)	0.005	0.97 (0.92-1.03)	0.387	0.93 (0.87-1.00)	0.057
Chronic diseases^a								
No	Reference		Reference		Reference		Reference	
Yes	3.10 (2.89-3.32)	<0.001	2.13 (1.98-2.30)	<0.001	3.62 (3.36-3.90)	<0.001	2.22 (2.04-2.41)	<0.001
Mental diseases^b								
No	Reference		Reference		Reference		Reference	
Yes	3.58 (3.40-3.77)	<0.001	2.82 (2.67-2.98)	<0.001	4.42 (4.13-4.73)	<0.001	3.23 (3.00-3.48)	<0.001
Frequency of COVID-19 infections								
1	Reference		Reference		Reference			
>1	1.71 (1.62-1.80)	<0.001	1.57 (1.48-1.66)	<0.001	1.67 (1.57-1.79)	<0.001	1.47 (1.37-1.58)	<0.001
Dietary habits								
Diet type								
Vegetarian or meat oriented	Reference		Reference		Reference		Reference	
Combination of meat and vegetable diets	0.64 (0.60-0.68)	<0.001	0.84 (0.78-0.89)	<0.001	0.54 (0.50-0.58)	<0.001	0.82 (0.75-0.89)	<0.001
Eating vegetables every day								
No	Reference		Reference		Reference		Reference	
Yes	0.79 (0.75-0.83)	<0.001	0.87 (0.82-0.92)	<0.001	0.63 (0.59-0.67)	<0.001	0.80 (0.73-0.87)	<0.001
Eating fruits every day								
No	Reference		Reference		Reference		Reference	
Yes	0.78 (0.74-0.83)	<0.001	NA	NA	0.64 (0.59-0.69)	<0.001	NA	NA

Eating dairy products every day								
No	Reference		Reference		Reference		Reference	
Yes	0.73 (0.69-0.78)	<0.001	0.89 (0.82-0.96)	0.002	0.64 (0.59-0.69)	<0.001	NA	NA
Eating animal foods every day								
No	Reference		Reference		Reference		Reference	
Yes	0.83 (0.79-0.87)	<0.001	NA	NA	0.69 (0.64-0.74)	<0.001	0.85 (0.78-0.93)	0.001
Living environment								
Sunbathing at home								
<5h/d	Reference		Reference		Reference		Reference	
≥5h/d	0.74 (0.71-0.78)	<0.001	0.94 (0.89-1.00)	0.038	0.71 (0.67-0.76)	<0.001	0.93 (0.86-1.00)	0.06
Satisfactory neighborhood relationship								
No	Reference		Reference		Reference		Reference	
Yes	0.50 (0.46-0.54)	<0.001	0.83 (0.75-0.92)	<0.001	0.43 (0.39-0.48)	<0.001	0.79 (0.70-0.89)	<0.001
Satisfactory community environment								
No	Reference		Reference		Reference		Reference	
Yes	0.5 (0.47-0.53)	<0.001	0.71 (0.66-0.77)	<0.001	0.45 (0.41-0.48)	<0.001	0.70 (0.63-0.78)	<0.001

Abbreviation: OR, odds ratio; CI, confidence interval; NA, not applicable;

^a Chronic diseases include hypertension, cardiovascular and cerebrovascular diseases, diabetes, chronic obstructive pulmonary disease (COPD), other respiratory diseases, chronic liver disease, chronic kidney disease, malignant tumors;

^b Mental diseases include anxiety, depression, insomnia.