

Table S1. COVID-19 vaccination coverage rates stratified by dose among people aged 18-59 years old.

Characteristics	≥1 dose			≥2 doses			≥3 doses			4 doses		
	n (%)	95% CI	P value	n (%)	95% CI	P value	n (%)	95% CI	P value	n (%)	95% CI	P value
Total	28,686 (95.5)	95.3- 95.7		28,333 (94.3)	94.1- 94.6		26,574 (88.5)	88.1- 88.8		5050 (16.8)	16.4- 17.2	
Age (years)			<0.001			<0.001			<0.001			<0.001
18-29	4029 (96.9)	96.3- 97.4		3985 (95.8)	95.2- 96.4		3627 (87.2)	86.2- 88.2		732 (17.6)	16.5- 18.8	
30-39	9103 (95.7)	95.3- 96.1		8972 (94.3)	93.8- 94.8		8304 (87.3)	86.6- 87.9		1818 (19.1)	18.3- 19.9	
40-49	7926 (96.4)	95.9- 96.7		7839 (95.3)	94.8- 95.7		7470 (90.8)	90.2- 91.4		1510 (18.4)	17.5- 19.2	
50-59	7628 (93.7)	93.2- 94.3		7537 (92.6)	92.0- 93.2		7173 (88.2)	87.4- 88.8		990 (12.2)	11.5- 12.9	
Gender			0.175			0.06			0.003			<0.001
Male	8987 (95.7)	95.3- 96.1		8889 (94.7)	94.2- 95.1		8381 (89.3)	88.7- 89.9		1415 (15.1)	14.4- 15.8	
Female	19,699 (95.4)	95.1- 95.7		19,444 (94.2)	93.8- 94.5		18,193 (88.1)	87.7- 88.5		3635 (17.6)	17.1- 18.1	
Location			0.101			0.005			<0.001			0.699
Urban	20,612 (95.4)	95.1- 95.7		20,334 (94.1)	93.8- 94.4		18,958 (87.7)	87.3- 88.2		3622 (16.8)	16.3- 17.3	
Rural	8074 (95.8)	95.4- 96.2		7999 (94.9)	94.4- 95.4		7616 (90.4)	89.7- 91.0		1428 (16.9)	16.2- 17.8	
Education			<0.001			<0.001			<0.001			<0.001

Junior high school and below	3694 (93.9)	93.1-94.6	3650 (92.8)	91.9-93.5	3458 (87.9)	86.8-88.9	296 (7.5)	6.7-8.4
High school and technical secondary school	4896 (94.6)	93.9-95.2	4833 (93.4)	92.7-94.0	4556 (88.0)	87.1-88.9	588 (11.4)	10.5-12.2
Bachelor degree	18,072 (96.2)	95.9-96.5	17,859 (95.1)	94.7-95.4	16,772 (89.3)	88.8-89.7	3914 (20.8)	20.3-21.4
Master degree or above	2024 (94.7)	93.7-95.6	1991 (93.2)	92.0-94.2	1788 (83.7)	82.1-85.2	252 (11.8)	10.5-13.2
Health insurance			0.006		0.009		<0.001	<0.001
Medical insurance for urban employees and residents	24,407 (95.7)	95.4-95.9	24,107 (94.5)	94.2-94.8	22,669 (88.8)	88.5-89.2	4669 (18.3)	17.8-18.8
New rural cooperative medical insurance	2717 (94.9)	94.0-95.6	2688 (93.9)	92.9-94.7	2546 (88.9)	87.7-90.0	219 (7.6)	6.7-8.7
Others	1562 (94.3)	93.1-95.3	1538 (92.8)	91.5-94.0	1359 (82.0)	80.1-83.8	162 (9.8)	8.4-11.3
Occupation			<0.001		<0.001		<0.001	<0.001
Service Industry personnel	3082 (96.5)	95.8-97.1	3050 (95.5)	94.7-96.2	2860 (89.5)	88.4-90.6	337 (10.6)	9.5-11.7
Health care workers	10,069 (97.6)	97.2-97.8	9957 (96.5)	96.1-96.8	9546 (92.5)	92.0-93.0	3002 (29.1)	28.2-30.0
Civil servants and employees of enterprises/institutions	5070 (95.3)	94.7-95.8	5007 (94.1)	93.4-94.7	4662 (87.6)	86.7-88.5	739 (13.9)	13.0-14.8
Pleasant	1736 (94.8)	93.7-95.8	1717 (93.8)	92.6-94.8	1645 (89.8)	88.4-91.2	146 (8.0)	6.8-9.3
Retired	1683 (90.5)	89.1-91.8	1657 (89.1)	87.6-90.4	1529 (82.2)	80.4-83.9	82 (4.4)	3.5-5.4

Unemployed/freelance	1667 (89.7)	88.2- 91.0	1642 (88.3)	86.8- 89.7	1462 (78.6)	76.7- 80.5	81 (4.4)	3.5-5.4
Others	5379 (95.2)	94.7- 95.8	5303 (93.9)	93.2- 94.5	4870 (86.2)	85.3- 87.1	663 (11.7)	10.9- 12.6
Chronic disease			<0.001		<0.001		<0.001	<0.001
No	18,894 (96.7)	96.5- 97.0	18,687 (95.7)	95.4- 96.0	17,470 (89.5)	89.0- 89.9	3471 (17.8)	17.2- 18.3
Yes	9792 (93.2)	92.7- 93.7	9646 (91.8)	91.3- 92.3	9104 (86.7)	86.0- 87.3	1579 (15.0)	14.4- 15.7

Statistically significant p-values are bold. Notably, the coverage rate of 4 doses only refers to the proportion of people who have received a total of four doses of COVID-19 vaccines in the whole population.

CI: confidence interval

Table S2. Demographic determinants associated with the COVID-19 vaccination coverage rates among people aged 18-59 years old.

Characteristics	≥1 dose		≥2 doses		≥3 doses		4 doses	
	aOR (95% CI)	p value	aOR (95% CI)	p value	aOR (95% CI)	p value	aOR (95% CI)	p value
Age (years)								
18-29	0.96 (0.75-1.21)	0.705	0.91 (0.73-1.12)	0.354	0.55 (0.47-0.63)	<0.001	0.75 (0.66-0.84)	<0.001
30-39	0.79 (0.67-0.95)	0.01	0.75 (0.64-0.88)	<0.001	0.60 (0.53-0.67)	<0.001	0.92 (0.83-1.02)	0.106
40-49	1.23 (1.04-1.46)	0.018	1.16 (0.99-1.35)	0.059	1.02 (0.91-1.15)	0.743	1.06 (0.96-1.17)	0.232
50-59	Reference		Reference		Reference		Reference	
Gender								
Male	1.25 (1.10-1.41)	0.001	1.25 (1.12-1.40)	<0.001	1.26 (1.16-1.37)	<0.001	1.00 (0.93-1.08)	0.995
Female	Reference		Reference		Reference		Reference	
Location								
Urban	Reference		Reference		Reference		Reference	
Rural	1.33 (1.14-1.54)	<0.001	1.38 (1.21-1.58)	<0.001	1.45 (1.31-1.60)	<0.001	1.57 (1.46-1.70)	<0.001
Education								
Junior high school and below	Reference		Reference		Reference		Reference	
High school and technical secondary school	1.07 (0.88-1.29)	0.498	1.06 (0.89-1.27)	0.487	1.06 (0.93-1.22)	0.38	1.25 (1.07-1.47)	0.005
Bachelor degree	1.10 (0.90-1.34)	0.369	1.12 (0.93-1.34)	0.226	1.02 (0.88-1.17)	0.829	1.50 (1.28-1.76)	<0.001
Master degree or above	0.81 (0.61-1.08)	0.144	0.83 (0.65-1.08)	0.16	0.69 (0.57-0.83)	<0.001	0.89 (0.72-1.10)	0.288
Health insurance								

Medical insurance for urban employees and residents	Reference		Reference		Reference		Reference	
New rural cooperative medical insurance	1.18 (0.94-1.49)	0.163	1.15 (0.93-1.42)	0.198	1.04 (0.88-1.22)	0.661	0.67 (0.56-0.80)	<0.001
Others	0.89 (0.71-1.12)	0.326	0.88 (0.72-1.08)	0.229	0.71 (0.62-0.82)	<0.001	0.70 (0.59-0.83)	<0.001
Occupation								
Service Industry personnel	Reference		Reference		Reference		Reference	
Health care workers	1.57 (1.24-2.00)	<0.001	1.40 (1.14-1.73)	0.002	1.79 (1.55-2.07)	<0.001	3.33 (2.92-3.80)	<0.001
Civil servants and employees of enterprises/institutions	0.80 (0.63-1.01)	0.063	0.82 (0.66-1.01)	0.066	1.01 (0.87-1.17)	0.904	1.38 (1.20-1.60)	<0.001
Pleasant	0.61 (0.45-0.84)	0.002	0.63 (0.48-0.84)	0.002	0.77 (0.62-0.96)	0.019	0.81 (0.64-1.01)	0.063
Retired	0.50 (0.38-0.65)	<0.001	0.53 (0.41-0.68)	<0.001	0.57 (0.47-0.68)	<0.001	0.41 (0.31-0.53)	<0.001
Unemployed/freelance	0.31 (0.25-0.40)	<0.001	0.36 (0.29-0.44)	<0.001	0.43 (0.37-0.51)	<0.001	0.41 (0.32-0.52)	<0.001
Others	0.71 (0.57-0.90)	0.004	0.72 (0.58-0.88)	0.001	0.79 (0.68-0.90)	0.001	1.08 (0.94-1.25)	0.281
Chronic disease								
No	2.14 (1.89-2.43)	<0.001	2.03 (1.81-2.27)	<0.001	1.56 (1.44-1.70)	<0.001	1.05 (0.98-1.14)	0.182
Yes	Reference		Reference		Reference		Reference	

Statistically significant p-values are bold. Notably, the coverage rate of 4 doses only refers to the proportion of people who have received a total of four doses of COVID-19 vaccines in the whole population.

aOR: adjusted odds ratio; CI: confidence interval

Table S3. Sensitivity analysis to explore demographic determinants associated with the COVID-19 vaccination coverage among all population.

Characteristics	≥1 dose		≥2 doses		≥3 doses		4 doses	
	aOR (95% CI)	p value	aOR (95% CI)	p value	aOR (95% CI)	p value	aOR (95% CI)	p value
Age (years)								
	0.98 (0.97-0.98)	<0.001	0.97 (0.97-0.98)	<0.001	0.99 (0.98-0.99)	<0.001	1.00 (1.00-1.00)	0.414
Gender								
Male	1.19 (1.10-1.29)	<0.001	1.16 (1.08-1.25)	<0.001	1.14 (1.08-1.21)	<0.001	1.02 (0.95-1.09)	0.611
Female	Reference		Reference		Reference		Reference	
Location								
Urban	Reference		Reference		Reference		Reference	
Rural	1.39 (1.24-1.55)	<0.001	1.43 (1.30-1.58)	<0.001	1.40 (1.30-1.51)	<0.001	1.60 (1.48-1.72)	<0.001
Education								
Junior high school and below	Reference		Reference		Reference		Reference	
High school and technical secondary school	1.34 (1.20-1.49)	<0.001	1.46 (1.32-1.61)	<0.001	1.45 (1.34-1.57)	<0.001	1.48 (1.30-1.68)	<0.001
Bachelor degree	1.21 (1.07-1.36)	0.002	1.32 (1.18-1.47)	<0.001	1.26 (1.15-1.37)	<0.001	1.86 (1.62-2.14)	<0.001
Master degree or above	0.91 (0.73-1.14)	0.406	0.97 (0.79-1.18)	0.757	0.82 (0.71-0.95)	0.009	1.16 (0.96-1.41)	0.122
Health insurance								
Medical insurance for urban employees and residents	Reference		Reference		Reference		Reference	
New rural cooperative medical insurance	1.38 (1.18-1.60)	<0.001	1.42 (1.24-1.63)	<0.001	1.17 (1.05-1.30)	0.004	0.70 (0.60-0.81)	<0.001
Others	0.97 (0.83-1.13)	0.679	1.00 (0.87-1.15)	0.992	0.84 (0.76-0.93)	0.001	0.72 (0.62-0.84)	<0.001
Occupation								

Service Industry personnel	Reference		Reference		Reference		Reference	
Health care workers	1.59 (1.29-1.96)	<0.001	1.32 (1.09-1.59)	0.004	1.57 (1.37-1.79)	<0.001	3.02 (2.67-3.42)	<0.001
Civil servants and employees of enterprises/institutions	0.85 (0.69-1.04)	0.12	0.83 (0.69-1.00)	0.052	0.97 (0.85-1.11)	0.68	1.26 (1.10-1.45)	0.001
Pleasant	0.81 (0.65-1.02)	0.074	0.75 (0.61-0.93)	0.007	0.81 (0.70-0.95)	0.008	0.70 (0.57-0.85)	<0.001
Retired	0.73 (0.60-0.88)	0.001	0.77 (0.65-0.91)	0.002	0.70 (0.62-0.79)	<0.001	0.35 (0.29-0.41)	<0.001
Unemployed/freelance	0.40 (0.33-0.50)	<0.001	0.40 (0.33-0.49)	<0.001	0.46 (0.40-0.53)	<0.001	0.39 (0.30-0.49)	<0.001
Others	0.69 (0.57-0.83)	<0.001	0.61 (0.52-0.73)	<0.001	0.67 (0.59-0.76)	<0.001	0.97 (0.85-1.11)	0.663
Chronic disease								
No	1.73 (1.56-1.91)	<0.001	1.55 (1.42-1.69)	<0.001	1.32 (1.24-1.41)	<0.001	1.05 (0.98-1.13)	0.188
Yes	Reference		Reference		Reference		Reference	

Statistically significant p-values are bold. Notably, the coverage rate of 4 doses only refers to the proportion of people who have received a total of four doses of COVID-19 vaccines in the whole population.

aOR: adjusted odds ratio; CI: confidence interval