

Table S1. The characteristics of HCWs according to the records nationally

Characteristics	Total %	Doctor %	Nurse %	Public health %	Technician %	Administrator %
Gender						
Male	28.2	53.8	2.3	42.1	40.4	46.1
Female	71.8	46.2	97.7	57.9	59.6	53.9
Age group, years						
below 30	26.9	11.3	37.5	33.7	24.1	13.6
30 to 39	32.2	28.3	34.6	35.7	33.1	25.7
40 to 49	22.4	30.3	17.5	17.2	22.5	28.3
50 or above	18.5	30.4	10.4	9.4	20.3	32.4
Education						
Below bachelor	24.6	17.9	30.2	26.3	21.7	21.0
Bachelor	69.9	70.1	69.7	68.0	74.9	73.9
Master or above	5.6	12.0	0.2	5.7	3.4	5.1
Residence						
Urban	50.9	52.9	59.0	56.3	53.6	62.0
Rural	49.1	47.1	41.0	43.7	46.4	38.0

Table S2. Vaccination Confidence, willingness and Coverage of the COVID-19 vaccine

Characteristics	Confidence rate (n, %)							Willingness (n, %)	P	Vaccination (n, %)	P
	Vaccine	P	Professionals	P	Government	p					
Gender											
Male	698(79.0)	0.001	764(86.4)	0.190	762(86.2)	0.435	764(86.4)	<0.001	625(70.7)	<0.001	
Female	1094(72.8)		1268(84.4)		1276(85.0)		1165(77.6)		893(59.5)		
Age group, years											
below 30	401(64.6)	<0.001	492(79.2)	<0.001	493(79.4)	<0.001	486(78.3)	0.002	335(53.9)	<0.001	
30 to 39	587(74.3)		655(82.9)		668(84.6)		616(78.0)		501(63.4)		
40 to 49	513(81.8)		575(91.7)		564(90.0)		538(85.8)		454(72.4)		
50 or above	291(83.6)		310(89.1)		313(89.9)		289(83.0)		228(65.5)		
Education											
High school or below	126(78.8)	0.019	141(88.1)	0.004	144(90.0)	0.001	137(85.6)	0.004	100(62.5)	0.280	
Bachelor's degree	1283(76.2)		1453(86.3)		1456(86.5)		1382(82.1)		1088(64.6)		
Master's or above	383(70.7)		438(80.8)		438(80.8)		410(75.6)		330(60.9)		
Residence											
Urban	1364(74.9)	0.781	1542(84.7)	0.310	1545(84.9)	0.220	1457(80.1)	0.034	1185(65.1)	0.008	
Rural	428(75.6)		490(86.6)		493(87.1)		472(83.4)		333(58.8)		
Occupation											
Doctors	430(71.3)	<0.001	496(82.3)	<0.001	497(82.4)	0.016	479(79.4)	<0.001	339(56.2)	<0.001	
Nurse	237(67.7)		284(81.1)		292(83.4)		259(74.0)		201(57.4)		
Public health	770(83.3)		826(89.4)		809(87.6)		814(88.1)		706(76.4)		
Medical technician	165(70.5)		201(85.9)		209(89.3)		185(79.1)		128(54.7)		
Administrative management	190(69.1)		225(81.8)		231(84.0)		192(69.8)		144(52.4)		
Power of post hoc		1.00		1.00		0.60		1.00		1.00	
Total		1792(75.1)		2032(85.2)		2038(85.4)		1929(80.8)		1518(63.6)	
Power of post hoc		1.00		1.00		1.00		1.00		1.00	

Table S3. Reclassification and analysis of study participants through their vaccination willingness and uptake among participants without medical conditions or contraindications

Characteristics	Subgroup	Unwill & Unvac ^a (n, %)	Unwill & Vac ^b (n, %)	Willing & Unvac ^c (n, %)	Willing & Vac ^d (n, %)	P	OR(95%CI)
Gender	Female	131(11.7)	84(7.5)	91(8.2)	809(72.6)	<0.001	Ref
	Male	54(7.5)	37(5.2)	39(5.4)	588(81.9)		1.64(1.08-2.49)
Age group, years	below 30	64(13.8)	32(6.9)	66(14.2)	303(65.2)	<0.001	Ref
	30 to 39	62(10.4)	48(8)	34(5.7)	453(75.9)		3.14(2.14-4.62) ^
	40 to 49	33(6.7)	30(6)	9(1.8)	424(85.5)		NA
	40 or above	26(9.5)	11(4)	21(7.6)	217(78.9)		NA
Education	High school or below	11(9.3)	4(3.4)	7(5.9)	96(81.4)	0.007	Ref
	Bachelor's degree	112(8.6)	85(6.6)	97(7.5)	1003(77.3)		0.97(0.40-2.18)
	Master's degree or above	62(14.8)	32(7.7)	26(6.2)	298(71.3)		1.10(0.42-2.83)
Residence	Urban	154(10.7)	92(6.4)	95(6.6)	1093(76.2)	0.165	Ref
	Rural	31(7.8)	29(7.3)	35(8.8)	304(76.2)		0.91(0.58-1.44)
Occupation	Doctors	52(12.1)	26(6.1)	38(8.9)	313(73)	<0.001	Ref
	Nurse	31(12.2)	26(10.2)	23(9)	175(68.6)		1.43(0.78-2.61)
	Public health	50(6.3)	33(4.2)	33(4.2)	673(85.3)		2.43(1.46-4.04)
	Medical technician	17(10.5)	12(7.4)	17(10.5)	116(71.6)		1.04(0.55-1.97)
	Administrative management	35(17.7)	24(12.1)	19(9.6)	120(60.6)		0.80(0.43-1.49)
Vaccine confidence	No confidence in any of 3 dimensions	71(37)	43(22.4)	16(8.3)	62(32.3)	<0.001	Ref
	Confidence in any 1 of the 3 dimensions	21(26.9)	19(24.4)	5(6.4)	33(42.3)		1.75(0.56-5.48)
	Confidence in any 2 of the 3 dimensions	51(23.1)	26(11.8)	15(6.8)	129(58.4)		2.19(0.98-4.90)
	Confidence in all of the 3 dimensions	42(3.1)	33(2.5)	94(7)	1173(87.4)		2.31(1.24-4.33)
Total		185(10.1)	121(6.6)	130(7.1)	1397(76.2)		

Note: ^a: the subgroup of unvaccinated participants reported unwillingness to vaccination; ^b: the subgroup of vaccinated participants reported unwillingness to vaccination; ^c: the subgroup of unvaccinated participants reported willingness to vaccination; ^d: the subgroup of vaccinated participants reported willingness to vaccination; ^: those aged over 30 years were combined into one group as “aged over 30 years” and introduced into the logistic regression model.

Table S4. Confidence in COVID-19 vaccine among different demographic characteristics

Characteristics	Confidence in vaccine					
	Importance	P	Safety	P	Effectiveness	P
Gender						
Male	734(83)	0.092	677(76.6)	<0.001	687(77.7)	<0.001
Female	1204(80.2)		1039(69.2)		1065(70.9)	
Age group, years						
below 30	482(77.6)	0.008	367(59.1)	<0.001	393(63.3)	<0.001
30 to 39	634(80.3)		562(71.1)		568(71.9)	
40 to 49	528(84.2)		506(80.7)		506(80.7)	
50 or above	294(84.5)		281(80.7)		285(81.9)	
Education						
High school or below	140(87.5)	0.003	117(73.1)	0.433	123(76.9)	0.007
Bachelor's degree	1381(82)		1221(72.5)		1259(74.8)	
Master's or above	417(76.9)		378(69.7)		370(68.3)	
Residence						
Urban	1478(81.2)	0.973	1316(72.3)	0.454	1327(72.9)	0.327
Rural	460(81.3)		400(70.7)		425(75.1)	
Occupation						
Doctors	464(76.9)	<0.001	417(69.2)	<0.001	414(68.7)	<0.001
Nurse	271(77.4)		220(62.9)		232(66.3)	
Public health	797(86.3)		743(80.4)		749(81.1)	
Medical technician	188(80.3)		158(67.5)		162(69.2)	
Administrative management	218(79.3)		178(64.7)		195(70.9)	
Total	1938(81.2)		1716(71.9)		1752(73.4)	

Table S5. Confidence in professional institutes and government among different demographic characteristics

Characteristics	Professionals						Government	P	
	Healthcare	P	Hospital/CDC	P	Manufacture	P			
Gender									
Male	754(85.3)	0.166	775(87.7)	0.174	732(82.8)	0.094	762(86.2)	0.435	
Female	1248(83.1)		1286(85.6)		1201(80)		1276(85)		
Age group, years									
below 30	483(77.8)	<0.001	498(80.2)	<0.001	461(74.2)	<0.001	493(79.4)	<0.001	
30 to 39	645(81.6)		671(84.9)		629(79.6)		668(84.6)		
40 to 49	566(90.3)		579(92.3)		547(87.2)		564(90)		
50 or above	308(88.5)		313(89.9)		296(85.1)		313(89.9)		
Education									
High school or below	139(86.9)	0.018	143(89.4)	0.012	131(81.9)	0.011	144(90)	0.001	
Bachelor's degree	1429(84.9)		1470(87.3)		1387(82.4)		1456(86.5)		
Master's or above	434(80.1)		448(82.7)		415(76.6)		438(80.8)		
Residence									
Urban	1525(83.8)	0.844	1569(86.2)	0.726	1464(80.4)	0.220	1545(84.9)	0.220	
Rural	477(84.3)		492(86.9)		469(82.9)		493(87.1)		
Occupation									
Doctors	492(81.6)	<0.001	501(83.1)	0.001	477(79.1)	0.001	497(82.4)	0.016	
Nurse	281(80.3)		292(83.4)		268(76.6)		292(83.4)		
Public health	814(88.1)		832(90)		787(85.2)		809(87.6)		
Medical technician	195(83.3)		204(87.2)		188(80.3)		209(89.3)		
Administrative management	220(80)		232(84.4)		213(77.5)		231(84)		
Total	2002(83.9)		2061(86.4)		1933(81.0)		2038(85.4)		

Table S6. Willingness rate of the COVID-19 vaccination grouped by vaccine confidence

Characteristics		Total (n=2386)	Doctor (n=603)	Nurse (n=350)	CDC (n=924)	Tech (n=234)	Admin (n=275)	P-value
Total		1929(80.8)	479(79.4)	259(74.0)	814(88.1)	185(79.1)	192(69.8)	<0.001
Trust in the importance of vaccination								
	Disagree	218(48.7)	65(46.8)	38(48.1)	72(56.7)	21(45.7)	22(38.6)	0.202
	Agree	1711(88.3)	414(89.2)	221(81.5)	742(93.1)	164(87.2)	170(78.0)	<0.001
Confidence on vaccine safety								
	Disagree	340(50.7)	88(47.3)	59(45.4)	113(62.4)	43(56.6)	37(38.1)	0.001
	Agree	1589(92.6)	391(93.8)	200(90.9)	701(94.3)	142(89.9)	155(87.1)	0.005
Confidence on vaccine effectiveness								
	Disagree	335(52.8)	98(51.9)	59(50)	100(57.1)	45(62.5)	33(41.3)	0.067
	Agree	1594(91.0)	381(92)	200(86.2)	714(95.3)	140(86.4)	159(81.5)	<0.001
Confidence on healthcare provider								
	Disagree	179(46.6)	48(43.2)	27(39.1)	63(57.3)	22(56.4)	19(34.5)	0.019
	Agree	1750(87.4)	431(87.6)	232(82.6)	751(92.3)	163(83.6)	173(78.6)	<0.001
Confidence on CDCs & hospitals								
	Disagree	143(44.0)	42(41.2)	22(37.9)	51(55.4)	14(46.7)	14(32.6)	0.076
	Agree	1786(86.7)	437(87.2)	237(81.2)	763(91.7)	171(83.8)	178(76.7)	<0.001
Confidence on vaccine manufacturers								
	Disagree	211(46.6)	56(44.4)	35(42.7)	77(56.2)	22(47.8)	21(33.9)	0.042
	Agree	1718(88.9)	423(88.7)	224(83.6)	737(93.6)	163(86.7)	171(80.3)	<0.001
Confidence on the government								
	Disagree	145(41.7)	44(41.5)	20(34.5)	60(52.2)	10(40.0)	11(25.0)	0.021
	Agree	1784(87.5)	435(87.5)	239(81.8)	754(93.2)	175(83.7)	181(78.4)	<0.001

Note: CDC, employees belong to public health; Tech, employees belong to medical technician; Admin, employees belong to administrative management.

Table S7.Supplemental Table Logistic regression on willingness among **Doctors**

Characteristics	Willingness among Doctors		
	OR	95%CI	P
Gender			
Male	Ref.		0.035
Female	0.56	0.33-0.96	
Age group, years			
below 30	Ref.		0.977
30 to 39	0.91	0.48-1.74	0.777
40 to 49	0.93	0.45-1.92	0.841
50 or above	0.82	0.33-2.03	0.665
Education			
High school or below	Ref.		0.263
Bachelor's degree	0.17	0.02-1.50	0.109
Master's or above	0.18	0.02-1.80	0.145
Residence			
Urban	Ref.		0.195
Rural	1.58	0.79-3.15	
Confidence			
Importance of vaccination	2.69	1.50-4.83	0.001
Vaccine safety	6.45	3.39-12.26	<0.001
Vaccine effectiveness	1.57	0.80-3.07	0.186
Confidence in professionals	1.10	0.50-2.42	0.814
Confidence in government	2.42	1.15-5.08	0.020

Table S8.Supplemental Table Logistic regression on willingness among Nurses

Characteristics		Willingness among Nurse		
		OR	95%CI	P
Gender				
	Male	Ref.		0.059
	Female	0.29	0.08-1.05	
Age group, years				
	below 30	Ref.		0185
	30 to 39	0.44	0.21-0.93	0.031
	40 to 49	0.50	0.19-1.28	0.147
	50 or above	0.59	0.16-2.19	0.431
Residence				
	Urban	Ref.		0.390
	Rural	1.32	0.70-2.50	
Confidence				
	Importance of vaccination	0.74	0.32-1.70	0.471
	Vaccine safety	9.52	4.17-21.76	<0.001
	Vaccine effectiveness	1.34	0.58-3.05	0.493
	Confidence in professionals	1.19	0.42-3.34	0.740
	Confidence in government	2.87	1.03-8.04	0.045

Table S9.Supplemental Table Logistic regression on willingness among **Public health employees**

Characteristics	Willingness among Public health employees		
	OR	95%CI	P
Gender			
Male	Ref.		0.026
Female	0.56	0.34-0.93	
Age group, years			
below 30	Ref.		0.060
30 to 39	0.80	0.41-1.57	0.516
40 to 49	0.97	0.48-1.99	0.942
50 or above	0.39	0.18-0.85	0.018
Education			
High school or below	Ref.		0.205
Bachelor's degree	0.96	0.34-2.74	0.938
Master's or above	0.58	0.18-1.84	0.352
Residence			
Urban	Ref.		0.972
Rural	0.99	0.51-1.91	
Confidence			
Importance of vaccination	2.33	1.22-4.48	0.011
Vaccine safety	2.21	1.17-4.15	0.014
Vaccine effectiveness	5.84	3.08-11.11	<0.001
Confidence in professionals	0.33	0.12-0.91	0.031
Confidence in government	3.72	1.46-9.50	0.006

Table S10.Supplemental Table Logistic regression on willingness among **Medical technicians**

Characteristics	Willingness among Medical technicians		
	OR	95%CI	P
Gender			
Male	Ref.		
Female	0.95	0.43-2.13	0.905
Age group, years			
below 30	Ref.		0.316
30 to 39	0.45	0.17-1.14	0.092
40 to 49	0.43	0.15-1.30	0.136
50 or above	0.42	0.10-1.69	0.223
Education			
High school or below	Ref.		0.149
Bachelor's degree	0.19	0.02-2.04	0.170
Master's or above	0.11	0.01-1.29	0.078
Residence			
Urban	Ref.		
Rural	0.66	0.25-1.74	0.400
Confidence			
Importance of vaccination	4.25	1.64-10.98	0.003
Vaccine safety	4.25	1.64-11.02	0.003
Vaccine effectiveness	0.66	0.24-1.86	0.434
Confidence in professionals	1.85	0.46-7.50	0.390
Confidence in government	1.10	0.26-4.61	0.898

Table S11.Supplemental Table Logistic regression on willingness among **Administrators**

Characteristics	Willingness among Administrators		
	OR	95%CI	P
Gender			
Male	Ref.		
Female	0.59	0.29-1.18	0.905
Age group, years			
below 30	Ref.		0.378
30 to 39	0.68	0.30-1.53	0.349
40 to 49	1.06	0.41-2.77	0.901
50 or above	0.44	0.14-1.35	0.150
Education			
High school or below	Ref.		0.024
Bachelor's degree	0.24	0.06-0.92	0.037
Master's or above	0.13	0.03-0.57	0.017
Residence			
Urban	Ref.		
Rural	0.81	0.33-1.96	0.639
Confidence			
Importance of vaccination	2.28	1.02-5.09	0.044
Vaccine safety	5.89	2.57-13.51	<0.001
Vaccine effectiveness	1.02	0.41-2.55	0.970
Confidence in professionals	0.89	0.28-2.79	0.841
Confidence in government	4.14	1.29-13.28	0.017

Table S12.Supplemental Table Logistic regression on willingness among **total sample**

Characteristics	Willingness among Total sample		
	OR	95%CI	P
Gender			
Male	Ref.		<0.001
Female	0.53	0.40-0.69	
Age group, years			
below 30	Ref.		0.020
30 to 39	0.67	0.49-0.92	0.012
40 to 49	0.85	0.59-1.22	0.371
50 or above	0.57	0.37-0.87	0.566
Education			
High school or below	Ref.		0.128
Bachelor's degree	0.82	0.48-1.42	0.479
Master's or above	0.62	0.34-1.13	0.119
Residence			
Urban	Ref.		.386
Rural	1.15	0.84-1.57	
Confidence			
Importance of vaccination	2.07	1.52-2.81	<0.001
Vaccine safety	4.94	3.60-6.78	<0.001
Vaccine effectiveness	1.88	1.35-2.61	<0.001
Confidence in professionals	0.92	0.60-1.42	0.701
Confidence in government	2.18	1.45-3.28	<0.001