

*S.1 Detailed information of blood donation from January 1 to March 31, 2020,  
compared with the same time period in 2019*

	2019	2020	<i>P</i>
Number of blood donations	70056	59728	-
Number of blood donors	64379	55203	-
Gender*			
Male	40790 (63.4)	35667 (64.6)	<.001 <sup>§</sup>
Female	23589 (36.6)	19536 (35.4)	
Age*†	30.7 ± 10.1	33.7 ± 9.7	<.001 <sup>  </sup>
Donation frequency*†	4.5 ± 10.8	5.4 ± 11.9	<.001 <sup>  </sup>
Donation type*			
Whole blood	59191 (91.9)	51104 (92.6)	<.001 <sup>§</sup>
Platelet	5188 (8.1)	4099 (7.4)	
Donation form*			
Street whole blood donation	38843 (65.6)	27175 (53.2)	<.001 <sup>§</sup>
Group whole blood donation	20348 (34.4)	23929 (46.8)	
Non-hospital group	13069 (64.2)	14139 (59.1)	<.001 <sup>§</sup>
Hospital	7279 (35.8)	9790 (40.9)	
Total number of positive results‡	709 (1.01)	545 (0.91)	.068 <sup>§</sup>
HBsAg	417 (0.60)	158 (0.26)	<.001 <sup>§</sup>
Anti-HCV	54 (0.08)	17 (0.03)	<.001 <sup>§</sup>
Anti-HIV	9 (0.01)	6 (0.01)	.640 <sup>§</sup>
Anti-TP	138 (0.20)	95 (0.16)	.108 <sup>§</sup>
Nucleic acid tests of HBV, HCV, and HIV	60 (0.09)	121 (0.20)	<.001 <sup>§</sup>
Two items or above	31 (0.04)	148 (0.25)	<.001 <sup>§</sup>

Data presented as no. (%), unless otherwise stated.

\* The denominators of gender, donation type, and donation form were number of blood donors. Age and donation frequency were data of blood donors' last donation.

† Data presented as mean ± standard deviation.

‡ The denominators of positive results were number of blood donations.

§ Chi-square test *P*.

|| Independent-sample *t* test *P*.

*Note:* Only gender, age, and donation frequency were compared, because other personal information, such as educational level, marital status, or occupation, were not required before donation.

*S.2 Detailed information of whole blood donation from January 1 to March 31, 2020*

*compared with the same time period in 2019*

	2019			2020		
	SWBDs	GWBDs		SWBDs	GWBDs	
		Non-hospital	Hospital		Non-hospital	Hospital
Gender*						
Male	23692 (61.0)	9004 (68.9)	3283 (45.1)	10089 (65.7)	21204 (70.9)	4374 (43.9)
Female	15151 (39.0)	4065 (31.1)	3996 (54.9)	5256 (34.3)	8694 (29.1)	5586 (56.1)
Age**†	30.6 ± 9.6	30.5 ± 10.5	32.2 ± 9.3	33.9 ± 10.1	32.9 ± 9.2	33.9 ± 9.6
Donation frequency**†	2.8 ± 3.2	6.4 ± 14.4	3.6 ± 3.4	4.6 ± 5.3	3.5 ± 3.4	6.4 ± 15.5

Data presented as no. (%), unless otherwise stated.

\* The denominators of gender, donation type and donation form were number of blood donors. Age and donation frequency were data of blood donors' last donation.

† Data presented as mean ± standard deviation.

*S.3 Comparisons of first-time and repeat SWBDs who received the questionnaire by gender and age in the survey*

	First-time SWBDs	Repeat SWBDs	<i>P</i>
Gender			
Female	2083 (67.6)	3998 (66.2)	.172 <sup>†</sup>
Male	997 (32.4)	2039 (38.8)	
Age <sup>*</sup>	32.3 ± 9.2	36.4 ± 9.9	<.001 <sup>‡</sup>

Data presented as no. (%), unless otherwise stated.

\* Data presented as mean ± standard deviation.

† Chi-square test *P*.

‡ Independent-sample *t* test *P*.

*S.4 Summary and comparisons of first-time and repeat SWBDs who completed the questionnaire in the survey*

	First-time SWBDs	Repeat SWBDs	<i>P</i>
Gender			
Female	165 (56.7)	826 (61.9)	.023 <sup>†</sup>
Male	126 (43.3)	467 (36.1)	
Age*	30.6 ± 8.7	35.7 ± 9.7	<.001 <sup>‡</sup>
Occupation			
Fixed job	124 (42.6)	652 (50.4)	.590 <sup>†</sup>
Student	32 (11.0)	76 (5.9)	
Non-working	20 (6.8)	88 (6.8)	
Others	115 (39.5)	477 (36.9)	
Education level			
Junior high or below	51 (17.5)	132 (10.2)	<.001 <sup>†</sup>
Secondary school	77 (26.5)	254 (19.6)	
College	154 (52.9)	836 (64.7)	
Master or above	9 (3.1)	71 (5.5)	
Relational closeness			
No	124 (42.6)	582 (45.0)	.473 <sup>†</sup>
Yes	167 (57.4)	711 (55.0)	

Data presented as no. (%), unless otherwise stated.

\* Data presented as mean ± standard deviation.

<sup>†</sup> Chi-square test *P*.

<sup>‡</sup> Independent-sample *t* test *P*.

*S.5 Total variance explained for the factor analysis (initial) in the survey*

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.41	24.51	24.51	2.81	15.60	15.60
2	3.47	19.30	43.81	2.67	14.83	30.43
3	1.86	10.35	54.16	2.35	13.08	43.51
4	1.60	8.89	63.05	2.09	11.59	55.09

*S.6 Varimax rotated factor loadings for the factor analysis (initial) in the survey*

Item	Factor				Common factor variance	
	1	2	3	4	Initial	Extraction
Rated anxious	-0.19	0.76	-0.06	-0.35	0.64	0.74
Rated worried	-0.18	0.75	-0.04	-0.37	0.64	0.74
Rated fearful	-0.20	0.73	-0.07	-0.34	0.61	0.70
Get infected of COVID-19	-0.19	0.60	-0.13	-0.06	0.41	0.41
Impact of COVID-19	-0.09	0.43	-0.04	-0.14	0.23	0.22
Knowledge about policy	0.83	0.12	-0.38	0.04	0.75	0.85
Knowledge about procedure	0.81	0.17	-0.34	0.04	0.72	0.80
Knowledge about requirements	0.80	0.15	-0.32	0.05	0.70	0.77
How urgent	0.51	0.32	0.68	0.11	0.68	0.83
How important	0.52	0.25	0.65	0.10	0.65	0.76
How much lost	0.36	0.21	0.43	0.04	0.33	0.36
Blood shortage	0.38	0.14	0.35	0.04	0.28	0.29
Get infected at donation site	-0.37	0.53	-0.14	0.60	0.60	0.80
Ensure safety	-0.32	0.40	-0.16	0.40	0.55	0.63
Risk after donation	-0.34	0.12	-0.09	0.23	0.40	0.44
Get infected on the way	-0.30	0.53	-0.14	0.48	0.22	0.20
Impact of blood donation	0.44	-0.03	0.03	-0.07	0.24	0.20
Blood usage	0.44	0.03	0.08	-0.09	0.24	0.21

*S.7 Total variance explained for the factor analysis (final) in the survey*

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.72	28.60	28.60	2.51	19.34	19.34
2	3.02	23.25	51.85	2.40	18.43	37.77
3	1.76	13.54	65.39	1.97	15.13	52.91
4	1.48	11.38	76.77	1.94	14.91	67.81

*S.8 Varimax rotated factor loadings for the factor analysis (final) in the survey*

Item	Factor				Common factor variance	
	Concern	Perceived knowledge	Perception of blood need	Donation risk	Initial	Extraction
Rated anxious	0.85	-0.02	0.06	0.12	0.63	0.74
Rated worried	0.84	-0.02	0.04	0.15	0.63	0.73
Rated fearful	0.83	-0.03	0.02	0.15	0.61	0.71
Get infected of COVID-19	0.55	0.01	-0.03	0.33	0.38	0.41
Knowledge about policy	-0.04	0.91	0.11	-0.09	0.75	0.86
Knowledge about procedure	0.01	0.88	0.14	-0.06	0.72	0.79
Knowledge about requirements	-0.02	0.86	0.16	-0.07	0.70	0.76
How urgent	0.04	0.12	0.92	-0.02	0.66	0.86
How important	0.00	0.13	0.85	-0.06	0.64	0.74
How much lost	0.04	0.10	0.58	-0.04	0.32	0.35
Get infected at donation site	0.17	-0.09	-0.03	0.85	0.58	0.76
Ensure safety	0.21	-0.04	-0.01	0.79	0.55	0.67
Risk after donation	0.16	-0.07	-0.08	0.63	0.38	0.44

*S.9 Linear regression models of factors and SWBDs' characteristics in the survey*

Predictor	Concern	Perceived knowledge	Perception of blood need	Donation risk
	$\beta$	$\beta$	$\beta$	$\beta$
Constant	3.15**	3.52**	4.06**	2.48**
Gender				
Male	0.17*	-0.07	0.05	0.07
Female	Reference	Reference	Reference	Reference
Age	0.00	0.01*	0.00	-0.01**
Education level	-0.13**	0.04	0.05*	-0.01
Donation frequency	-0.01*	0.03**	0.00	0.00
Relational closeness				
Yes	-0.01	0.12*	0.10**	-0.04
No	Reference	Reference	Reference	Reference

\*  $P < .05$ , \*\*  $P < .01$

*S.10 Independent-sample t test results of the purpose of the latest blood donation  
between first-time and repeat SWBDs in the survey*

Purposes	First-time SWBDs	Repeat SWBDs	$t_{1582}$	$P$
Saving lives	2.54 ± 0.65	2.55 ± 0.70	-0.16	.877
Media appealing	1.98 ± 0.69	2.02 ± 0.72	-0.73	.469
Benefiting health	1.92 ± 0.67	2.04 ± 0.69	-2.70	.007
Message appealing	1.47 ± 0.60	1.86 ± 0.72	-8.68	<.001
Telephone call appealing	1.45 ± 0.58	1.63 ± 0.71	-4.64	<.001
Free blood test	1.43 ± 0.63	1.29 ± 0.55	3.43	<.001
Souvenir of blood donation	1.15 ± 0.41	1.23 ± 0.47	-2.91	.004

*S.11 Summary and comparisons of experienced SWBDs who completed the questionnaires in group 1 and 2 in the trial*

	Group 1	Group 2	<i>P</i>
Gender			
Female	300 (60.6)	304 (61.9)	.695 <sup>†</sup>
Male	195 (39.4)	187 (38.1)	
Age <sup>*</sup>	32.4 ± 9.7	32.0 ± 9.4	.580 <sup>‡</sup>
Donation frequency <sup>*</sup>	5.2 ± 5.3	4.7 ± 5.1	.231 <sup>‡</sup>
Occupation			
Fixed job	243 (49.1)	215 (43.8)	.087 <sup>†</sup>
Student	53 (10.7)	50 (10.2)	
Non-working	40 (8.1)	29 (5.9)	
Others	159 (32.1)	197 (40.1)	
Education level			
Junior high or below	56 (11.3)	67 (13.6)	.551 <sup>†</sup>
Secondary school	115 (23.2)	115 (23.4)	
College	303 (61.2)	294 (59.9)	
Master or above	21 (4.2)	15 (3.1)	
Relational closeness			
No	234 (47.3)	237 (48.3)	.754 <sup>†</sup>
Yes	261 (51.7)	254 (52.7)	

Data presented as no. (%), unless otherwise stated.

<sup>†</sup> Chi-square test *P*.

<sup>‡</sup> Independent-sample *t* test *P*.

\* Data presented as mean ± standard deviation.

*S.12 Factor loadings for the confirmatory factor analysis in the trial*

Item	Factor loading
Concern	
Rated anxious	0.84
Rated worried	0.83
Rated fearful	0.79
Get infected of COVID-19	0.60
Perceived knowledge	
Knowledge about policy	0.91
Knowledge about requirements	0.85
Knowledge about procedure	0.70
Perception of blood need	
How urgent	0.92
How important	0.87
How much lost	0.70
Donation risk	
Get infected at donation site	0.86
Ensure safety	0.79
Risk after donation	0.76

*S.13 Factor Intercorrelation in the trial*

Factor	1	2	3	4
1. Concern	(0.76)	0.01	0.21	0.31
2. Perceived knowledge		(0.83)	-0.16	-0.21
3 Perception of blood need			(0.84)	-0.16
4. Donation risk				(0.80)

*S.14 Collinearity diagnostics*

	Eigenvalue	Condition index	Proportion of variation										
			Constant	Frame	Gender	Age	Educational level	Donation frequency	Relational closeness	Concern	Perceived knowledge	Perception of blood need	Donation risk
1	9.13	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.52	4.17	0.00	0.01	0.00	0.00	0.00	0.67	0.03	0.00	0.00	0.00	0.00
3	0.49	4.33	0.00	0.68	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00
4	0.44	4.55	0.00	0.25	0.01	0.00	0.00	0.01	0.65	0.00	0.00	0.00	0.01
5	0.10	9.34	0.00	0.00	0.56	0.08	0.05	0.10	0.01	0.09	0.01	0.00	0.00
6	0.10	9.64	0.00	0.02	0.01	0.10	0.00	0.15	0.01	0.11	0.05	0.01	0.31
7	0.08	10.44	0.00	0.00	0.29	0.02	0.55	0.00	0.00	0.08	0.00	0.00	0.01
8	0.06	12.57	0.00	0.02	0.01	0.36	0.01	0.04	0.00	0.30	0.04	0.04	0.27
9	0.04	14.68	0.00	0.00	0.02	0.18	0.27	0.01	0.00	0.35	0.26	0.05	0.21
10	0.03	18.25	0.01	0.02	0.05	0.00	0.00	0.00	0.01	0.05	0.52	0.58	0.00
11	0.01	34.64	0.99	0.00	0.04	0.25	0.11	0.02	0.01	0.00	0.10	0.31	0.18

*S.15 Zero-order Pearson correlations between variables in the trial*

Factor	2	3	4	57	65	76
1. Donation intention	0.4*	0.03	-0.02	0.24*	0.20*	-0.25*
2. Group	1	0.01	0.01	0.01	0.16*	-0.13*
3. Relational closeness		1	0.00	0.03	0.04	-0.04
4. Concern			1	0.01	0.14*	0.31*
5. Perceived knowledge				1	0.21*	-0.21*
6. Perception of blood need					1	-0.16*
7. Donation risk						1

\*  $P < .001$

*S.16 Linear regression models of groups, blood need, and donation intention  
in the trial*

Independent variables	Dependent variables					
	Blood need		Donation intention		Donation intention	
	$\beta$	$P$	$\beta$	$P$	$\beta$	$P$
Group	0.19	<.001	0.32	<.001	0.27	<.001
Blood need					0.29	<.001
Adjusted R <sup>2</sup>	0.02		0.02		0.04	
F	F <sub>(1,984)</sub> = 22.15, $P < .001$		F <sub>(1,984)</sub> = 18.97, $P < .001$		F <sub>(2,983)</sub> = 21.64, $P < .001$	

*S.17 Linear regression models of groups, donation risk, and donation intention  
in the trial*

Independent variables	Dependent variables					
	Donation risk		Donation intention		Donation intention	
	$\beta$	$P$	$\beta$	$P$	$\beta$	$P$
Group	-0.21	<.001	0.32	<.001	0.25	.001
Donation risk					-0.33	<.001
Adjusted R <sup>2</sup>	0.02		0.02		0.07	
F	F <sub>(1,984)</sub> = 16.76, $P$ <.001		F <sub>(1,984)</sub> = 18.97, $P$ <.001		F <sub>(2,983)</sub> = 39.20, $P$ <.001	

*S.18 Logistic regression analyses of associations of groups, donor characteristics,  
and intervention status with re-donation among all SWBDs in the trial*

	OR (95% CI) 1 vs. 2 vs. 3	OR (95% CI) 1 vs. 2	OR (95% CI) 1 vs. 3	OR (95% CI) 2 vs. 3
Group				
Group 1	1.13 (0.87–1.47)	1.06 (0.84–1.35)	1.10 (0.84–1.44)	-
Group 2	1.07 (0.82–1.39)	Reference	-	1.10 (0.84–1.44)
Group 3	Reference	-	Reference	Reference
Gender				
Male	0.95 (0.77–1.18)	0.98 (0.76–1.25)	0.86 (0.66–1.11)	1.03 (0.79–1.35)
Female	Reference	Reference	Reference	Reference
Age	1.03 (1.02–1.04)*	1.03 (1.02–1.04)*	1.03 (1.02–1.04)*	1.03 (1.02–1.04)*
Donation history	1.08 (1.06–1.10)*	1.08 (1.06–1.11)*	1.07 (1.04–1.09)*	1.09 (1.06–1.12)*
Status of intervention <sup>†</sup>				
Completed	3.20 (2.56–4.52)*	3.38 (2.54–4.51)*	3.85 (2.61–5.68)*	3.02 (1.99–4.60)*
Non-completed	Reference	Reference	Reference	Reference

\*  $P < .001$ .

<sup>†</sup> Referred to those who completed the questionnaire

*S.19 Independent-sample t test results of the common factors between SWBDs  
in the survey and the trial*

Factors	Survey	Trial	$t_{2564}$	$P$
Concern	2.84 ± 0.94	3.04 ± 0.92	-5.31	<.001
Perceived knowledge	4.07 ± 0.84	3.85 ± 0.84	6.36	<.001
Perception of blood need	4.41 ± 0.64	4.13 ± 0.75	9.59	<.001
Donation risk	2.14 ± 0.76	2.60 ± 0.83	-14.03	<.001