

## **Educational Outcomes and Perception Changes in Medical Students After Visiting a Blood Donation Center**

Junseo Lee, B.D.<sup>1,\*</sup>, Seryeong Kim, B.D.<sup>1,\*</sup>, Sun Young Jeong, M.D.<sup>2</sup>, Seug Yun Yoon, M.D.<sup>2</sup>, Namsu Lee, M.D., Ph.D.<sup>2</sup>, Jong-Ho Won, M.D., Ph.D.<sup>2</sup>, Jeong Won Shin, M.D., Ph.D.<sup>3</sup>, Soon Hyo Kwon, M.D., Ph.D.<sup>4</sup>, Min-Young Lee, M.D. Ph.D.<sup>2</sup>, and Kyoung Ha Kim, M.D. Ph.D.<sup>2</sup>

<sup>1</sup>Soonchunhyang University College of Medicine, Cheonan, Korea; <sup>2</sup>Division of Hematology and Oncology, Department of Internal Medicine, Soonchunhyang University Seoul Hospital, Soonchunhyang University College of Medicine, Seoul, Korea; <sup>3</sup>Department of Laboratory Medicine, Soonchunhyang University Seoul Hospital, Soonchunhyang University College of Medicine, Seoul, Korea; <sup>4</sup>Division of Nephrology, Department of Internal Medicine, Soonchunhyang University Seoul Hospital, Soonchunhyang University College of Medicine, Seoul, Korea

**Supplemental Data Table S1.** Characteristics of program participants (final-year medical students)

Characteristics	N (%)	
	Male (N = 122)	Female (N = 81)
Age, median (range)	27 yrs (23 – 34)	26 yrs (24 – 29)
Height (cm)		
151 – 170	25 (20.5)	72 (88.9)
> 170	97 (79.5)	9 (11.1)
Weight (kg)		
Low body weight (male < 50, female < 45)	0 (0)	7 (8.6)
Normal body weight	122 (100)	74 (91.4)
Subjective health status		
Good	89 (73.0)	39 (48.1)
Moderate	31 (25.4)	38 (46.9)
Poor	2 (1.6)	4 (5.0)
ABO blood type		
A	40 (32.8)	28 (34.6)
B	25 (20.5)	28 (34.6)
O	37 (30.3)	13 (16.0)
AB	20 (16.4)	12 (14.8)
Rh blood type		
Rh positive	119 (97.5)	81 (100)
Rh negative	3 (2.5)	0 (0)
Year of blood donation center visit		
2023	63 (51.6)	37 (45.7)
2022	38 (31.2)	27 (33.3)
2021	21 (17.2)	17 (20.0)
Number of blood donation experiences before visiting the blood donation center		
0	45 (36.9)	45 (55.6)
1	19 (15.6)	10 (12.3)
2	14 (11.5)	12 (14.8)
3	11 (9.0)	8 (9.9)
4	5 (4.1)	2 (2.5)
≥ 5	28 (22.9)	4 (4.9)

**Supplemental Data Table S2.** Reasons for blood donation deferral before participating in the Blood Donation Center Visiting Program\*

<b>Reasons</b>	<b>N (%)</b>
Lack of interest	37 (41.1)
Ineligible for blood donation	37 (41.1)
Lack of time or opportunity	31 (34.4)
Phobia of needles or blood	9 (10.0)
Fear of potential side effects	7 (7.8)

\*Multiple answers allowed (N=90).

**Supplemental Data Table S3.** Reasons for donating blood before participating in the Blood Donation Center Visiting Program\*

<b>Reasons</b>	<b>N (%)</b>
Aware of the importance of donating blood	51 (45.1)
Donate as a group (e.g., school, military)	40 (35.4)
Altruism and humanitarian interest	34 (30.1)
To receive a souvenir	33 (29.2)
Simple curiosity	21 (18.6)
Campaign or others' suggestion	10 (8.9)
To know one's blood test results	9 (8.0)
Regular blood donor (> 4 donations/yr)	9 (8.0)

\*Multiple answers allowed (N=113).

**Supplemental Data Table S4.** Feedback on the Blood Donation Center Visiting Program and opinions about methods to increase blood donation participation among the general population

<b>Feedback</b>	<b>N (%)</b>
<b>Advantages*</b>	
Having an opportunity to donate blood	129 (63.5)
Improvement in knowledge about blood donation	98 (48.3)
Increased awareness of the importance of blood donation	93 (45.8)
Promotion of altruism and humanitarian interest	91 (44.8)
Can receive a souvenir	58 (28.6)
<b>Methods to increase blood donation participation*</b>	
Increasing the number of rewards for blood donation (e.g., gift cards)	126 (62.1)
Increasing education on the importance of blood donation	98 (48.3)
Enhancing accessibility (e.g., blood donation buses)	78 (38.4)
Increasing advertisements (e.g., promotion campaigns) online/social media	58 (28.6)
Implementing in-house education programs at blood donation centers (covering the blood donation process, donated blood usage, and societal impact)	35 (17.2)
Add an additional item for the blood test	1 (0.5)
Extend the operating hours of the blood donation center	1 (0.5)

\*Multiple answers allowed (N=201).

### A. Demographic and Personal Information

1. Year of Birth \_\_\_\_\_
2. Gender  Female  Male
3. Height \_\_\_\_\_ cm
4. Weight (As of the time of the center visit) \_\_\_\_\_ kg
5. Subjective health status  Good  Moderate  Poor
6. ABO blood type  A  B  O  AB
7. Rh blood type  Rh+  Rh-
8. Year of blood donation center visit  2021  2022  2023

### B. About Blood Donation Experiences

1. How many times did you donated blood before visiting the center?  
 0  1  2  3  4  5 or more
- 1-1. If you chose 0, what is the reason for not donating blood? (Multiple answers allowed)  
 Ineligible for blood donation  
 Lack of time/opportunity  
 Fear of potential side effects (e.g. Blood-borne infections)  
 Needle/blood phobia  
 Religious reasons  
 Lack of interest  
 I chose “2-6” in question 1
- 1-2. If you chose 1 or more, what is the reason for donating blood? (Multiple answers allowed)  
 Regular blood donor (4 or more times/year)  
 Aware of the importance to donate blood  
 Donate as a group (e.g. school, military)  
 Altruism and humanitarian interest  
 To know one's blood test results  
 Simple curiosity  
 I chose “3” in question 1
2. Did you donated blood on the visit of blood donation center?  
 Yes  No
3. What types of blood did you donated?  
 Whole blood  Platelets  Plasma  Platelet-plasma

4. If you chose didn't donated blood on the visit of blood donation center, what was the reason?  
 Current medication  
 Underlying disease  
 Having visited a restricted area for blood donation  
 Low body weight  
 Not feeling well  
 Sleep Deprivation  
 Alcohol intake within the last 24 hours  
 COVID-19 related issues(positive, quarantine or close contact)  
 Other inadequate blood donation eligibility  
 Fear of potential side effects  
 Needle/blood phobia  
 Religious reasons  
 I “donated” blood on the visit of the center.

5. How many times did you donated blood after visiting the blood donation center as a part of a school curriculum?  
 0  
 1  
 2  
 3 or more  
 I'm a regular blood donor (4 or more times/year)
6. Do you have any future blood donation plans?  
 Yes  
 No

### C. About Awareness of Blood Donation

- 1-1. What score do you think best represents your knowledge level about blood donation before the visit of the center on a scale from 0 to 10?  
Completely unaware    1   2   3   4   5   6   7   8   9   10    Know very well  
                                  o   o   o   o   o   o   o   o   o   o
- 1-2. Do you think your knowledge on blood donation improved after the visit of the center?  
 There is no difference.  
 My knowledge had improved after the visit.
- 2-1. What score do you think best represents your perception of the importance of blood donation after the visit of the center on a scale from 0 to 10?  
Not important            1   2   3   4   5   6   7   8   9   10    Very  
at all                       o   o   o   o   o   o   o   o   o   o    important

- 2-2. Did you become more aware of the importance of blood donation after visiting the center?  
 There is no difference.  
 I became more aware of the importance of blood donation after the visit.
- 3-1. Did you have willingness to donate blood before visiting the center?  
 Yes  
 No
- 3-2. Did you have willingness to donate blood after visiting the center?  
 Yes  
 No

### D. Subjective Feedback on the Program and Opinions on Strategies to Increase Blood Donation Among People

1. What was the good point of this program? (Multiple answers allowed)  
 Having a chance to donate blood  
 Improvement in knowledge about blood donation  
 Increased awareness of the importance of blood donation  
 Can get souvenir  
 Promotion of altruism and humanitarian interest  
 Others: \_\_\_\_\_
2. What were the drawbacks of this program? (Multiple answers allowed)  
 The time burden of visiting the center during the elective week  
 The physical burden of visiting the center during the elective week  
 Adverse effects of blood donation such as vasovagal syncope  
 The need to enhance autonomy in blood donation participation  
 Did not learned much or gained any insights  
 Others: \_\_\_\_\_
3. What methods do you think are more necessary to increase blood donation participation among the general public? (Multiple answers allowed)  
 Increasing rewards for blood donation (e.g. gift card amounts)  
 Enhancing accessibility (e.g. blood donation buses)  
 Implementing in-house education programs at blood donation centers (covering the blood donation process, the usage of donated blood, and its impact on society)  
 Increasing advertisement (e.g. promotion campaigns, browser/social media)  
 Increasing education on the importance of blood donation  
 Others: \_\_\_\_\_

Supplemental Data Fig. S1. Survey on the Blood Donation Center Visiting Program