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KNOWLEDGE OF BLOOD DONATION OF MEDICAL STUDENTS IN 2023: A CROSS-SECTIONAL STUDY IN HO CHI MINH CITY

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ABSTRACT

Background: Blood and blood products are a unique and precious national resource for its sole source from voluntary donation. Knowledge of blood donation has a great influence on people's motivation. As the pioneering force in enhancing the healthcare practice, students of medicine should be able to improve the knowledge of blood donation for donors and encourage them to participate in this beneficial activity.

Objective: This study aimed at surveying the knowledge of blood donation of medical students in Ho Chi Minh City in 2023.

Method: A cross-sectional study on 780 health students was conducted in February 2023.

Results: The blood donation knowledge questionnaire recorded 75% of the questions, with a correct answer rate of over 60%. Most of surveyed medical students have knowledge of required blood tests for donation (n=764; 97.9%) and the maximum age of blood donors (n=711; 91.2%). The Chi-square/Fisher test shows that there is a relationship between gender (p = 0.057), levels (p = 0.007), and religions (p = 0.035) and students' knowledge of blood donation.

Conclusion: Student health has adequate knowledge of blood donation, but there is still knowledge gap that can negatively affect students' motivation to practice blood donation.

Keywords: Knowledge, blood donation, healthcare, student, Ho Chi Minh City.

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1. INTRODUCTION

Blood donation is an essential activity to promptly provide and reserve blood for emergency situations, because it cannot be produced but can only be received from donors [1]. According to World Health Organization (WHO) in 2018, the blood donation rate in high-income countries is 16.4 times higher than in higher-middle income countries, 6.6 times higher than lower-middle income countries and 5.0 times in low-income countries [2]. In 2022, Vietnam's blood donation rate reached nearly 1.5% of the population, lower than the WHO target of 3-5% of the population participating in blood donation, so it is necessary to reinforce in blood donation campaign programs and encourage people to acquire knowledge of blood donation [2].

However, misconceptions about blood donation prevent people from voluntary participation [4]. Research by Baig et al (2013) shows that the most common misconceptions about blood donation are that it is fatal (28%), the donor can be infected with HIV or hepatitis B and C (26%), and donors may be physically compromised (24%) [5]. The voluntary blood donation is negatively affected by a lack of knowledge, which emphasizes the importance of education and dissemination to the community [6].

Therefore, improving blood donation knowledge is a good strategy to increase the number of people participating in voluntary and recurrent blood donation, and contributing to ensuring safety in blood transfusion [6]. Health students are trained to understand the importance of blood donation, practice blood donation more often and can play a role in promoting healthy communities to participate in blood donation [7]. Therefore, the study was conducted with the goal of surveying the knowledge of health students participating in blood donation in Ho Chi Minh City.

2. SUBJECTS AND RESEARCH METHODS

Study design and Study location, time of implementation

Cross-sectional study using convenience sampling was conducted in February 2023 at health universities in Ho Chi Minh City with the minimum sample size calculated according to the formula of the World Health Organization is 423 (95% confidence level, 5% absolute error, 50% percentage of students with good knowledge, 10% error) [8]. In fact, the study surveyed 780 health students who met the sampling criteria. The formula for calculating sample size is as follows [8].

Materials and data analyze

The questionnaire was built based on research conducted by Miriane Lucindo Zucoloto in Brazil (2018) [3] and includes two parts: 10 questions about participant information and 24 knowledge questions about blood donation with Cronbach's alpha of 0.955. Collected data is classified and processed using Microsoft Excel 2019 software. Knowledge about blood donation is assessed through 24 questions, each question has 1 point, in which knowledge scores below 14 points are considered bad or negative and vice versa [3]. Chi-square/Fisher's test was used in the study to examine the relationship between knowledge about blood donation and characteristics of students participating in the study. In the study, p value < 0.05 was considered statistically significant.

Research Ethics

The study was conducted under the permission of the Faculty of Medicine - National University of Ho Chi Minh City and approved by the Ethics Committee in Biomedical Research of the Faculty of Medicine - National University of Ho Chi Minh City Minh (No. 01/ QD-IRBVN01.107 of the Ethics Council in Biomedical Research of the Faculty of Medicine - Ho Chi Minh City National University). This research was conducted with the informed consent of all participants. Research participants have the right to stop submitting requests at any time during their participation in the study. Participants' personal information is kept confidential.

3. RESULTS

Table 1. Basic information of students participated in survey arcording to knowledge (N=780)

Varies	Bad knowledge (n = 130)	Good knowledge (n = 650)	Total (N = 780)	p-value *
Age				0,387
18-19	26 (20,0)	103 (15,8)	129 (16,5)	
20-21	40 (30,8)	232 (35,7)	272(34,9)	
≥ 22	64 (49,2)	315 (48,5)	379 (48,6)	
Gender				0,057
Male	56 (43,1)	315 (48,5)	371 (47,6)	
Female	71 (54,6)	332 (51,0)	403 (51,6)	
Others	3 (2,3)	3 (0,5)	6 (0,8)	
Living Place				0,421
Urban	95 (73,1)	452 (69,5)	547 (70,1)	
Rural	35 (26,9)	198 (30,5)	233 (29,9)	
Major				0,152
General medicine	59 (45,4)	314 (48,3)	373 (47,8)	
Pharmacology	55 (42,3)	216 (33,2)	271 (34,8)	
Oral maxillofacial	13 (10,0)	91 (14,0)	104 (13,3)	
Others	3 (2,3)	29 (4,5)	32 (4,1)	
Grade				0,007*
First	20 (15,4)	104 (16,0)	124 (15,9)	
Second	18 (13,8)	104 (16,0)	122 (15,6)	
Third	16 (12,3)	101 (15,5)	117 (15,0)	
Fourth	39 (30,1)	134 (20,6)	173 (22,2)	
Fifth	28 (21,5)	96 (14,8)	124 (15,9)	
Sixth	9 (6,9)	111 (17,1)	120 (15,4)	
Religion				0,035*
No religion	82 (63,1)	397 (61,1)	479 (61,4)	
Buddishm	30 (23,1)	206 (31,7)	236 (30,3)	
Catholic	11 (8,5)	31 (4,8)	42 (5,4)	
Others	7 (5,3)	16 (2,4)	23 (2,9)	

Varies	Bad knowledge (n = 130)	Good knowledge (n = 650)	Total (N = 780)	p-value *
Income (Million- VNĐ)				0,462
No income/Depend	101 (77,7)	517 (79,5)	618 (79,2)	
0 - < 1	12 (9,2)	68 (10,5)	80 (10,3)	
1 - < 3	8 (6,2)	31 (4,8)	39 (5,0)	
3 - < 5	6 (4,6)	14 (2,2)	20 (2,6)	
5 - < 7	-	7 (1,0)	7 (0,9)	
≥ 7	3 (2,3)	13 (2,0)	16 (2,0)	
Family member need blood transfusions				0,241
Yes	28 (21,5)	172 (26,5)	200 (25,6)	
No	102 (78,5)	478 (73,5)	580 (74,4)	
Total	**130 (16,7)**	**650 (83,3)**	**780 (100,0)**	

[a]: Traditional medicine, Nurse, …
[b]: Protestantism, Hoa hao Buddishm
(*) Chi-Square/Fisher's exact test.

Table 1 describes data about the characteristics of 780 health students participating in the study, the majority of students aged 18 to 21 years old, the proportion of female students is higher than male students. (51.6% and 47.6%) and 70.8% of students participated in blood donation. There is a statistically significant relationship between the grade and religion with students' knowledge about blood donation (p<0.005).

Table 2. The characteristics of knowdelge of health students participated in surver (N = 780)

TT	Question	Response	Frequency	Percentage
1	Do you know your type of blood?	**Yes**	**676**	**86,7**
		No	104	13,3
2	Is all donated blood tested in order to verify if it has any disease that can be transmitted to others?	**Yes**	**764**	**97,9**
		No	16	2,1
3	In Vietnam, in order to be able to donate blood, what is the minimum weight that a person needs to have? (kg)	40 - 45	40	5,1
		42 - 45	**252**	**32,3**
		42 - 50	418	53,6
		No idea	70	9
4	Does donating blood make you lose or gain weight?	Weigh gain	90	11,5
		Weigh lose	12	1,5
		Neither	**606**	**77,7**
		No idea	72	9,2

TT	Question	Response	Frequency	Percentage
5	Does donating blood thicken or thin the blood?	Thin	28	3,6
		Thicken	22	2,8
		Neither	**655**	**84**
		No idea	75	9,6
6	Time for your blood donation (minute)	**20 - <40**	**552**	**70,8**
		40 - <60	86	11
		≥ 60	13	1,7
		No idea	129	16,5
7	The minimum donating volume (mL)	100 - 200	11	1,4
		250 - 400	172	22,1
		450 - 500	**516**	**66,2**
		550 - 1000	13	1,7
		No idea	68	8,7
8	Can under 16-years-old individuals donate blood?	Yes	39	5
		No	**685**	**87,8**
		No idea	56	7,2
9	Can pregnant women donate blood?	Yes	91	11,7
		No	**621**	**79,6**
		No idea	68	8,7
10	Can a person who has diabetes or high blood pressure donate blood?	Yes	85	10,9
		No	**639**	**81,9**
		No idea	56	7,2
11	Can a person who has or has had any type of cancer donate blood?	Yes	51	6,5
		No	**667**	**85,5**
		No idea	62	7,9
12	Can women who are menstruating donate blood?	**Yes**	**426**	**54,6**
		No	312	40
		No idea	42	5,4
13	Is there a maximum age for blood donation?	**Yes**	**711**	**91,2**
		No	49	6,3
		No idea	20	2,6
14	Can women who are breastfeeding donate blood?	Yes	369	47,3
		No	**320**	**41**
		No idea	91	11,7

TT	Question	Response	Frequency	Percentage
15	Is the blood from only one donor enough for one person who needs blood?	**Yes**	**372**	**47,7**
		No	348	44,6
		No idea	60	7,7
16	When people need to receive blood, do they have to pay?	Yes	293	37,6
		No	**426**	**54,6**
		No idea	61	7,8
17	Does donated blood have to be used within 24 h after donation, otherwise it is not good anymore?	Yes	81	10,4
		No	**640**	**82,1**
		No idea	59	7,6
18	Can a person acquire a disease by donating blood?	Yes	272	34,9
		No	**463**	**59,4**
		No idea	45	5,8
19	If the blood donor is male, can he donate every 2 months, and can women donate every 3 months?	**Yes**	**469**	**60,1**
		No	244	31,3
		No idea	67	8,6
20	In Vietnam, is it allowed by law to pay a person to donate blood	**Yes**	**600**	**76,9**
		No	112	14,4
		No idea	68	8,7
21	When someone donates blood, does the amount of blood in the human body return to what it was before within 24–48 h	**Yes**	**530**	**67,9**
		No	164	21
		No idea	86	11
22	Can someone with fever donate blood?	Yes	80	10,3
		No	**634**	**81,3**
		No idea	66	8,5
23	In order to donate blood, should the donor be fasting?	Yes	73	9,4
		No	**654**	**83,8**
		No idea	53	6,8
24	Can smokers donate blood?	**Yes**	**560**	**71,8**
		No	144	18,5
		No idea	76	9,7

Table 2 presents the characteristics of knowledge about blood donation of health students. 75% of the questions had a rate of students choosing the correct answer. The majority of students know the need to identify infectious diseases from donated blood (n = 764; 97.9%), students have good knowledge about age limits for blood donation (n = 711; 91, 2%).

4. DISCUSSIONS

Research shows that 71.3% of students have ever donated blood with more than 50% having participated in blood donation once. The learning environment has created conditions for students to more easily access blood donation activities and acquire a lot of medical knowledge (83.3% of students have good knowledge), contributing to explaining the high rate on blood donation. The majority of students know the need for blood tests after donation (97.9%), age limits (91.2%), and their blood type (86.7%), similar to the study conducted by Zucoloto and colleagues (2018) in Brazil [3]. When asked about the minimum weight and financial support, although there are physical, policy and legal differences, research shows that students have poor knowledge about the minimum weight to participate in blood donation, with a low rate of 32.3%, this result is similar to the study in Brazil (2018) with a rate of 49.8%; and financial support for blood donation at 76.9% and 92% respectively [6].

Regarding knowledge about the ability of women to donate blood during menstruation, breastfeeding women, the importance of a blood donor, or blood donations can cause infectious diseases, there is a high rate of incorrect knowledge among students. The similar results in lack of knowledge were also recorded in the study Zucoloto and colleagues (2018) in Brazil with a rate of right answers below 60%. There is only one difference that knowledge about donor-borne infectious diseases in people receiving primary health care in Brazil is better, but Zucoloto's (2020) study on health students showed higher false knowledge responses [5], [2]. Although the overall knowledge of this study is quite good, there are still shortcomings proving that health students have easier access to knowledge about health education, but it does not mean that they also have sufficient knowledge about blood donation.

The study recorded the proportion of female students with good knowledge was higher than that of male students (51% and 48.5%), the difference was not statistically significant. The research results of Javaeed and et al (2020) argued that women have high levels of knowledge and have meaningful relationships [7] or that male students have higher knowledge scores than women's score [9]. The difference may be because women are more altruistic than men and some questions about women are not men's strengths. However, men are more likely to donate blood than women. Because they are not delayed by blood donation conditions, they can easily practice and understand blood donation.

The relationships found in this study are similar to the study of Mahfouz, et al. (2021) in Saudi Arabia [9]. The level of knowledge is quite similar to the study in Saudi Arabia where there was good but incomplete knowledge about blood donation [9], [5]. However, research by Abdallah and colleagues (2021) in Qatar suggests that there is no significant relationship between knowledge and blood donation status, meaning the level of knowledge does not affect the decision to donate blood [10]. Therefore, this research needs to be expanded to learn about the factors that promote or prevent students' decision in blood donation. Because of the urgency of blood banks, it is necessary to improve the limitations that are affecting the increase in donating blood source.

5. CONCLUSIONS

Health students in Ho Chi Minh City are the key force, needing to take the lead in participating and supporting voluntary blood donation programs. However, many students still have a lot of shortcomings in updating information related to blood donation. Therefore, it is necessary to have more activities, training programs and advocacy to raise students' awareness of blood donation.

REFERENCES

[1] WH Organization, (2010, 21 06). Towards 100% voluntary blood donation: a global framework for action. Available: https://www.who.int/publications/i/item/9789241599696

[2] World Health Organization, Blood safety and availability, 2019.

[3] ML Zucoloto and Edson Zangiacomi Martinez, Blood Donation Knowledge Questionnaire (BDKQ-Brazil): analysis of items and application

in primary healthcare users, Hematol transfus cell ther, vol. 40, pp. 368–376, 2018.

[4] W Syed, A Alsadoun, AS Bashatah et al., Assessment of the knowledge beliefs and associated factors among Saudi adults towards blood donation in Saudi Arabia, Hematology, vol. 27, pp. 412-419, 2022.

[5] M Baig, H Habib, AH Haji et al., Knowledge, misconceptions and motivations towards blood donation among university students in KSA, Pak J Med Sci, vol. 29, pp. 1295-9, 2013.

[6] ML Zucoloto, CC Bueno-Silva, Livia Borges Ribeiro-Pizzo, Knowledge, attitude and practice of blood donation and the role of religious beliefs among health sciences undergraduate students, Transfus Apher Sci, vol. 59, p. 102822, 2020.

[7] A Javaeed, R Kousar, A Farooq et al., Knowledge, Attitude, and Practice of Blood Donation Among Undergraduate Medical Students in Azad Kashmir, Cureus, vol. 12, p. 7733, 2020.

[8] J Charan, T Biswas, How to Calculate Sample Size for Different Study Designs in Medical Research?, Indian Journal of Psychological Medicine, vol. 35, pp. 357–370, 2013.

[9] MS Mahfouz, M Ryani, NAS Hamzi et al., Blood donation among university students: practices, motivations, and barriers in Saudi Arabia, Avicenna J Med, vol. 11, pp. 70-76, Apr-Jun 2021.

[10] AM Abdallah, AA Ibrahim, M Koç, Knowledge Level, Motivators and Barriers of Blood Donation among Students at Qatar University, Healthcare (Basel), vol. 9, Jul 22 2021.