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ORIGINAL ARTICLE

Awareness, Attitude and Practice Towards Blood Donation Among Undergraduate Students

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Abstract

National Blood Center (PDN) has faced shortage crisis when COVID-19 pandemic outbreak, which led the Ministry of Health (MOH) urgently call for public to donate their blood in order to help increasing the amount of blood at PDN. Kedah specifically faced the worst situation which the blood supply can only last for less than four days. According to KKMNOW statistics, only 12.0% of all the blood donors in Malaysia are students in the past year. Therefore, this study aimed to assess the awareness, attitude and knowledge of blood donation among undergraduate students. A questionnaire survey was conducted which involved 268 undergraduate students. Descriptive statistics, frequency distribution table and Spearman rank-order correlation coefficient were adopted to analysis the collected data. Based on their responses, majority of the respondents have adequate knowledge and positive attitude towards blood donating. 60.4% of the respondents have donating history. The main reasons the respondents do not participate in donating blood are 'Due to fear or pain' and 'Never thought about donating blood'. This study also found that both attitude and practice have a positive relationship with the awareness of blood donating**.**

Keywords: Awareness, Attitude, Practice, Blood Donation

Introduction

Blood donation is a voluntary process that has the potential to save lives. There is various blood donation type in Malaysia which are whole blood donation and apheresis donation. Malaysia required as many as 2,000 units of blood per day for more than 1,000 patients (Kwan, 2021). Therefore, a large number of blood donor are needed to donate their blood every day to ensure the amount of blood required by hospital is sufficient. Hence, Ministry of Health (MOH) aimed to have at least 5% of Malaysia population who eligible to donate blood to become a blood donor (Dottie, 2021). Even though the percentage of blood donor in Malaysia increased, but only 2.5% of Malaysia population are donors (Homage Malaysia, 2022).

Global blood banks were facing a shortage crisis as the world faced the COVID-19 pandemic outbreak. This similar situation also happened in Malaysia. Due to the pandemic outbreaking, the government had implemented Movement Control Order (MCO) or known as 'lockdown' to control the spread of COVID-19. This was the main reason for the sharp drop in blood collection nationwide as well as the force cancellation of all planned of blood donation campaigns. Until the endemic phase, the blood bank still facing this problem.

MOH keeps inviting public to donate blood to help National Blood Centre (PDN). This is to make sure that PDN is always has enough blood supply available, particularly in times of need. Moreover, Deputy Minister Datuk Dr Noor Azmi Ghazali said that only 2.2% of all Malaysians are blood donors and awareness campaigns need to be hold constantly because blood transfusions are not just used in emergencies (Astro Awani, 2020).

On 24th March 2022, MOH again urgently call for public to donate blood as PDN facing a critical shortage of type O blood and the inventory at PDN was depleted due to high demand (New Straits Times, 2022). This situation shows that the blood bank in Malaysia is having insufficient supply of blood, thus more blood donor is needed to increase the inventory in blood bank which hopefully can always remain adequate. The website of PND showed that the blood stocks of type B and type O negative blood at the center were still at the low level on 28th April 2022.

COVID-19 pandemic had resulted in less blood donation campaign compared with before the attack of the pandemic, which led to a shortage in blood bank. Kedah's blood supply faced the worst shortage with the blood center stockpiles barely having enough to last fewer than four days (BERNAMA, 2021). According to the statistics of KKMNOW, the percentage of Malaysia aged 17-65 in each state that has donated at least once in the past year was only 1-3.4%, only Wilayah Persekutuan Kuala Lumpur has higher percentage which is 10.5%. Among all the blood donor in Malaysia in past one year, only 12.0% of them are students (Ministry of Health & Department of Statistics Malaysia, n.d.). Therefore, the aim of this study is to examine undergraduate students' awareness, attitude and practice toward blood donation.

Since the outbreak of COVID-19 pandemic in Malaysia, an increase in cases had led to a sharp drop in blood donations across the country and the blood banks also faced shortage crisis. This was because all the blood donation drives forced to be cancelled due to the epidemic, and the public and donors were also concerned about their own safety during blood donation process (QI Group, 2022). The Health Ministry urgently called public for donating blood as the blood bank was at the low level. This literature review studies university undergraduate students' awareness, attitude and practice towards blood donation.

In the study by Salimah *et al.* (2018), they had carried out a cross-sectional study with 210 health science undergraduate students at public university in west Malaysia and the data were collected using questionnaire. They measured the level of awareness and attitude of respondents. The result showed that less than half of the respondents which only 46.2% had sufficient knowledge of blood donation while around 57.1% of respondents had positive attitude towards blood donation. Mohamad Anuar *et al.* (2020) work on a cross-sectional survey to Universiti Kebangsaan Malaysia's undergraduate students of Faculty of Health Sciences (FSK) which involved 274 students from nine different programmes. The questionnaire consists of 10 questions about knowledge of blood donation and 6 questions about attitude of blood donation. The result obtained from this study shows that majority of the respondents have adequate knowledge (99.6%) and positive attitude towards blood donation (95.3%). Furthermore, this study also showed that gender and study programmes have no significant difference with the level of knowledge and attitude.

Alsalmi *et al.* (2018) discovered a significant correlation between knowledge level and blood donation practices. Their study involved 598 health professional students from 40 universities in Saudi. Data was collected through a questionnaire which consists of 40 questions with three sections (demographic; knowledge and attitude of blood donation; practice and role of universities). The findings show that knowledge level was significantly correlated with practice of

blood donation, therefore, the respondents who have adequate knowledge would be more likely to have history of donating blood. On the other hand, the study that conducted among health campus undergraduate students in Universiti Sains Malaysia found that majority of the undergraduate students had sufficient knowledge and positive attitude towards blood donation, but the percentage of practice towards blood donation was low with only 40.4% of the respondents had donated blood. The low percentage of blood donation practice maybe due to lack of opportunity for donating (Zainal Abidin *et al.,* 2021).

Materials and Methods

Primary data were collected and analyzed in this study. The instrument used to conduct this study is questionnaire. The questionnaire was distributed to the undergraduate students through online platform such as Telegram, WhatsApp, and Facebook with the Google Form link.

In this study, the sample size was calculated using Cochran formula:

$$n = \frac{z \times \frac{p(1-p)}{e^2}}{1 + (\frac{z^2 \times p(1-p)}{e^2 N})} \tag{1}$$

With the margin error, $e = 5\%$ and confident interval = 95%, proportion, $p = 0.5$ which indicate that 50% of undergraduate students are a blood donor and the total number of undergraduate students, $N = 22932$, the sample size calculated as follow:

$$n = \frac{1.6449 \times \frac{0.5(1-0.5)}{0.05^2}}{1 + (\frac{1.6449^2 \times 0.5(1-0.5)}{0.05^2(22932)})}$$
$$n = 267.4144 \approx \mathbf{268} \tag{2}$$

After calculation, the sample size needed to be collected is 268 samples. The sample was selected using convenience sampling method.

A structured questionnaire was used as instrument in this study. The questionnaire was created using Google Form and consist of four sections which are (i) demographic, (ii) awareness of blood donation, (iii) respondents' attitude towards blood donation and (iv) practice of blood donation. The questionnaire consists of close-ended questions such as multiple choice and rating scale questions (from strongly disagree to strongly agree).

As for the data analysis, descriptive statistics was adopted to analyze respondents' demographic, knowledge and practice of blood donation such as percentages, frequencies and means. The frequency distribution table was used to arrange the collected data to demographic characteristics which namely as gender, race, type of blood, current semester and college of program enrolled. Moreover, the frequency distribution table with percentage also used to measure the awareness, attitude and practice of respondents towards blood donation. The relationship between level of awareness, attitude and practice among undergraduate students towards blood donation was analyzed by using Spearman rank-order correlation coefficient.

Results and Discussion

Demographic Characteristics

A total of 268 undergraduate students included in this study, which consists of 112 male (41.8%) and 156 females (58.2%). Most of the respondents are Malay (43.7%), followed by Chinese (33.2%) and Indian (23.1%). The respondents are currently studying in semester 1 (18.7%), semester 2 (1.1%), semester 3 (24.6%), semester 5 (32.1%), semester 6 (0.7%) and semester 7 (22.8%). The highest number of participants are from College of Business (COB). Most of the respondents knew their blood type and only 15 (5.6%) out of 268 respondents do not know their blood type.

Practice of blood donation

A total of 162 out of 268 respondents (60.4%) have history of donate blood, of them, 96 respondents (59.3%) had donated more than 2 times. Most of them were feel positive and did not feel discomfort after donating blood. Among 106 respondents who does not have donate history, the reasons for not donating blood, 52 (49.1%) of them had choose 'due to fear or pain' and 'Never thought about donating blood'. Apart from the options given, the respondents also give the other reasons are 'low BMI', 'blood sugar low' and 'underweight'.

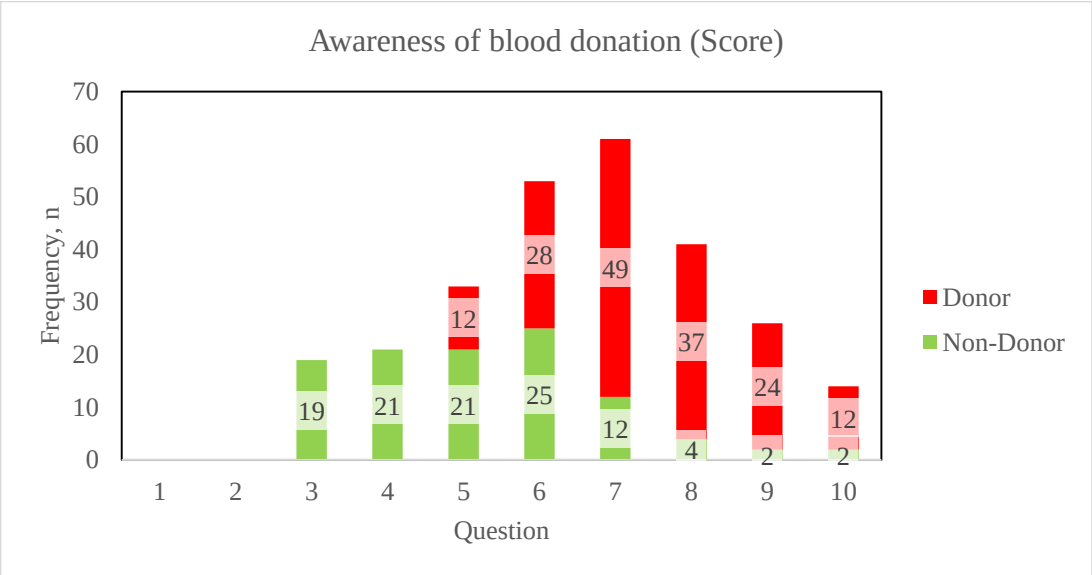
Awareness towards blood donation

According to the Table 1, the awareness level among donors was higher than the non-donors. The accuracy among donors is more than half in most of the questions except for Question 7 which only 25.31% of them answered it correctly. While for the non-donors, only 3 out of 10 questions have high accuracy. Overall, most of the respondents gave wrong answer for Question 7 which only 66 out of 268 (24.63%) respondents answered it correctly.

Table 1. Awareness on blood donation among respondents (n=268)

	Response	Donor				Non-Donor			
		Correct answer		Incorrect answer		Correct answer		Incorrect answer	
		n	(%)	*n*	(%)	*n*	(%)	*n*	(%)
1	Amount of blood drawn for each donation	151	93.21	11	6.79	35	33.02	71	66.98
2	Age range for blood donation	118	72.84	44	27.16	49	46.23	57	53.77
3	Minimum weight of donor	154	95.06	8	4.94	82	77.36	24	22.64
4	What is the duration of a donation process?	143	88.27	19	11.73	45	42.45	61	57.55
5	How many times can an individual donate in a year?	160	98.77	2	1.23	89	83.96	17	16.04
6	Can pregnant woman donate blood?	160	98.77	2	1.23	103	97.17	3	2.83
7	Can a woman donate blood during her period?	41	25.31	121	74.69	25	23.58	81	76.42
8	How many lives can be saved by a single blood donation?	88	54.32	74	45.68	30	28.30	76	71.70
9	Universal donors are	90	55.56	72	44.44	41	38.68	65	61.32
10	Universal recipients are	98	60.49	64	39.51	51	48.11	55	51.89

From Figure 1, most of the respondents have adequate knowledge about blood donation. Among donors, most of them have adequate knowledge about the blood donation and only 12 of the donors have poor knowledge and the highest number of donors got 7 marks in this section. While for the non-donors, more than half of them got score below than 6 marks which means that they have poor knowledge towards blood donation.



Score: 1 – 5 (Poor Knowledge); 6 – 10 (Adequate Knowledge)

Figure 1. Bar chart of awareness level towards blood donation among donors and non-donors

Awareness towards blood donation

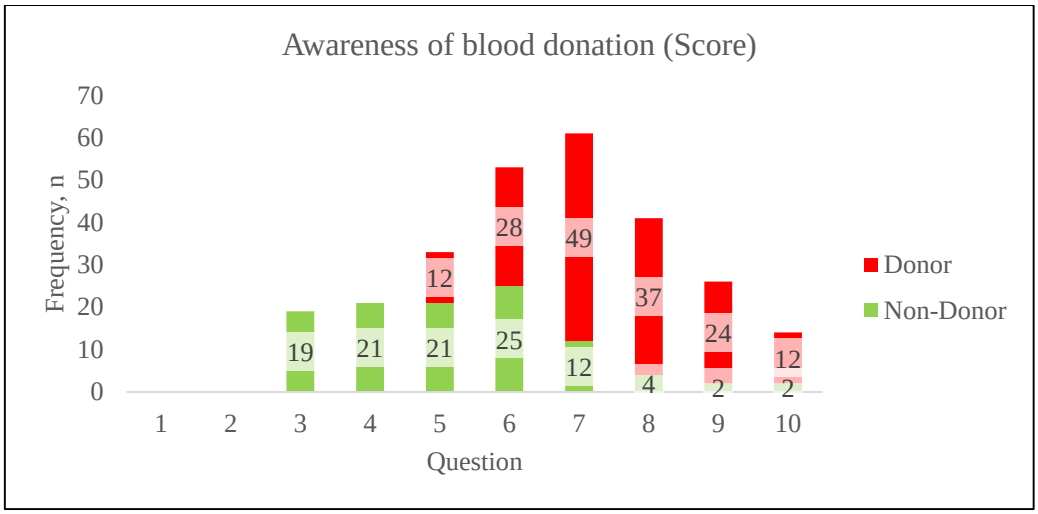
Table 2 shows that the awareness level among donors was higher than non-donors. The accuracy among donors is more than half in most of the questions except for Question 7, only 25.31% of them answered it correctly. While for the non-donors, only 3 out of 10 questions have high accuracy. Generally, most of the respondents gave wrong answer for Question 7 which only 66 out of 268 (24.63%) respondents answered it correctly.

Table 2. Awareness on blood donation among respondents (N=268)

	Response	Donor				Non-Donor			
		Correct answer		Incorrect answer		Correct answer		Incorrect answer	
		n	(%)	*n*	(%)	*n*	(%)	*n*	(%)
1	Amount of blood drawn for each donation	151	93.21	11	6.79	35	33.02	71	66.98
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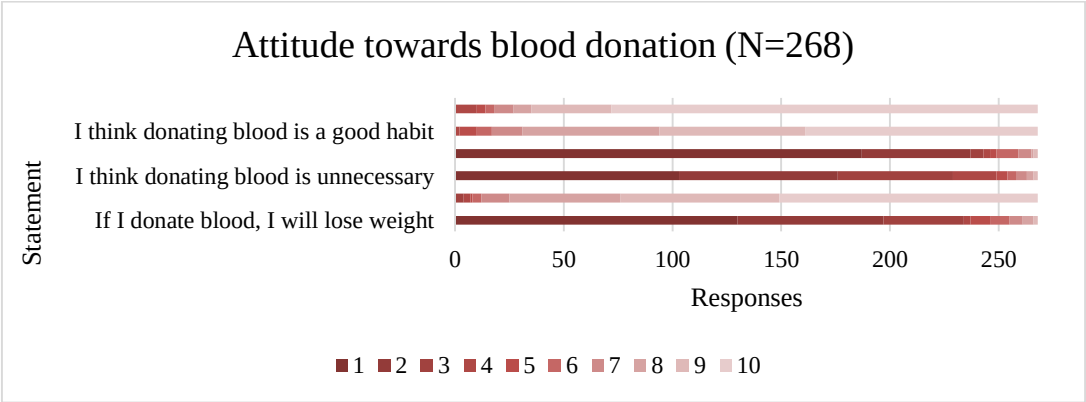


Score: 1 – 5 (Poor Knowledge); 6 – 10 (Adequate Knowledge)

Figure 2. Bar chart of awareness level towards blood donation among donors and non-donors

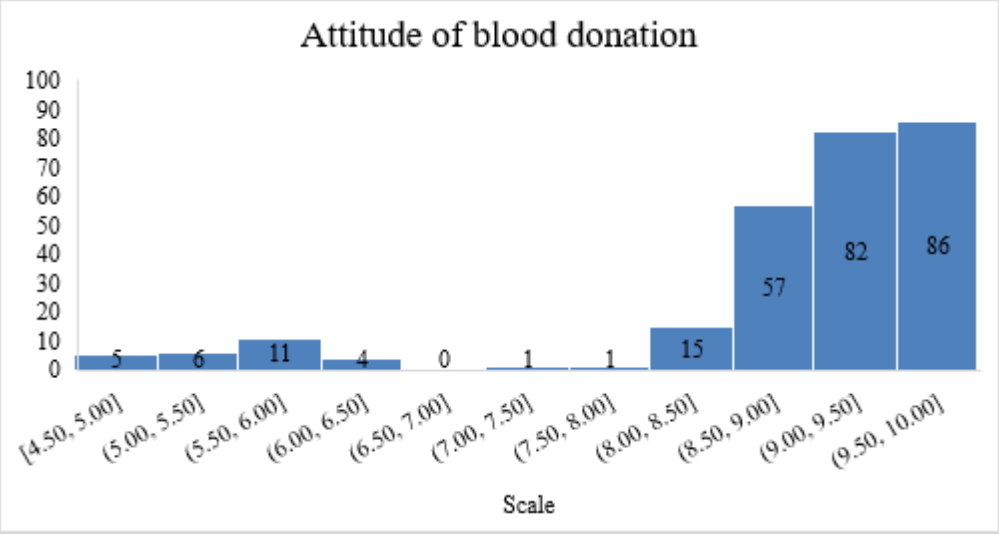
Attitude towards blood donation

According to Figure 4, most of the respondents have positive attitude towards blood donation and only 22 respondents have negative attitude towards blood donation, among them 18 respondents are non-donors and 4 are donors. More than half of the respondents gave their answer with scale above 9 which means that they have a very positive attitude towards donating blood.



Scale 1 – 10: Strongly Disagree – Strongly Agree

Figure 3. Distribution of respondents' attitude towards blood donation



Scale: 1 – 6 (Negative Attitude); 6.01 – 10 (Positive Attitude)

Figure 4. Histogram of attitude towards blood donation among respondents

Table 3. Level of attitude among donors and non-donors

Attitude	Non-donor	Donor
Positive	88	158
Negative	18	4

Relationship between awareness, attitude and practice towards blood donation

Based on the in Figure 5, there is a moderate positive relationship between awareness level and practice towards blood donation (r_s=.602, p<.001). If a respondent who is having adequate knowledge, he/she will donate blood. There is a weak positive relationship between awareness level and attitude (r_s=.318, p<.001) and also between attitude and practice towards blood donation (r_s=.268, p<.001). This finding shows that even if the respondents have high awareness (adequate knowledge) it does not mean that they will have positive attitude towards blood donation. On the other hand, if the respondents have positive attitude, it does not represent that they had donated blood.

Correlations

			Awareness	Attitude	Practice
Spearman's rho	Awareness	Correlation Coefficient	1.000	.318**	.602**
		Sig. (2-tailed)	.	.000	.000
		N	268	268	268
	Attitude	Correlation Coefficient	.318**	1.000	.258**
		Sig. (2-tailed)	.000	.	.000
		N	268	268	268
	Practice	Correlation Coefficient	.602**	.258**	1.000
		Sig. (2-tailed)	.000	.000	.
		N	268	268	268

**. Correlation is significant at the 0.01 level (2-tailed).

Figure 5. Spearman rank-order correlation coefficient between awareness, attitude and practice of respondents towards blood donation

Conclusion

As the conclusion, majority of the respondents have adequate knowledge and positive attitude towards blood donating. Approximately 60.4% of them has donating history. The main reasons why the respondents do not participate in blood donation are because they are fear and afraid of the pain. Some of them said that they never thought about donating their blood. Hence, both attitude and practice have positive relationship with the awareness of blood donating.

In the future, blood donation campaigns organizer who wants to hold blood collection activities in university, will have some ideas on how to approach more undergraduate students to practice blood donation. The organizer may share more information regarding blood donation to undergraduate students in order to increase their awareness and also to increase the number of students practices blood donation. Finally, this preliminary study is a good source of information which provides some preliminary ideas for researchers who want to conduct similar research in their university, workplace or community.

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