

Knowledge, Awareness, and Practice Towards Blood Donation Among UTHM Diploma Students

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Abstract

This study is conducted to compare the level of knowledge, attitude, and practice level of blood donation between male and female students in diploma programs in UTHM Pagoh. In this study, the significance difference of knowledge, attitude and practices of blood donation based on gender was also determined. Apart from that, the purpose of this study is to determine the relationship between knowledge, attitude, and practice level of blood donation among diploma students in UTHM. A cross-sectional survey was distributed to 200 diploma students in UTHM Pagoh which consists of seven courses: Diploma in Applied Science, Diploma in Chemical Engineering Technology, Diploma in Electrical Engineering, Diploma in Civil Engineering, Diploma in Mechanical Engineering, Diploma in Information Technology and Diploma in Animation Technology using a Google Form questionnaire. Data collected was analysed by using Statistical Package for Social Sciences (SPSS) version 27. The result shows that female students have more knowledge, attitude, and practice level of blood donation than male students. Based on gender, there were no significant difference in terms of knowledge, attitude and practices of blood donation among UTHM diploma students. Most of female and male of diploma students have a basic knowledge but poor attitude toward blood donation. Moreover, they might have a basic knowledge regarding blood donation but did not apply them in real life. They may have good attitude toward blood donation, but they do not practice the proper way of blood donation. Further research needs to be conducted to find effective ways to spread awareness about the blood donation. It can increase the level of knowledge, attitude, and practice (KAP) towards blood donation among diploma UTHM students.

1. Introduction

Internationally, blood donation contributes significantly to public health and humanitarian efforts. Blood donation is a voluntary act with the intent of helping others in need. Usually, it involves a straightforward and safe procedure. Donations can potentially save lives by providing crucial support to patients undergoing surgery, recovering from illness, or coping with medical emergencies. People from diverse backgrounds join in a shared commitment to improve health outcomes and support healthcare systems through blood donation. Apart from its immediate medical effects, blood donation fosters a sense of community and solidarity. Despite the simplicity of

this act of generosity, it illustrates the importance of collective responsibility and compassion, highlighting the profound effect a single person can have on the well-being of others.

There is a lack of enough, high-quality blood supplies in many nations to fulfil the growing demand [1]. In Malaysia, blood procurement relies mainly on voluntary non-remunerated donors [2]. In contrast to prior years, the Director General of Health Malaysia reported a 40% drop in blood collection in 2020. Between March 2020 and May 2020, a mere 67,135 blood bags were collected. Furthermore, there was a downward tendency in the bloodstock at the Malaysian whole blood bank, especially in this endemic period. Even though blood donation programmes have been widely arranged around the nation, limited participation has been noted because of inadequate knowledge and the fear of needles that have been set in their mind since kids. In order to get 100% voluntary unpaid blood donation, the WHO further demands that nations concentrate on youth [3], [4]. University students are a promising source of blood donations in the long term. Blood donation programmes may be optimised by considering the knowledge, attitude, and practice (KAP) of students, who make up a sizable portion of the prospective donor pool among a variety of demographic groups. Due to the issue, a lot of blood donation campaigns are held at universities facilities to attract those students to donate their blood. Besides give them some reward after donating their blood such as free food or free check – up card, this campaign can widen the awarenesses about the blood donation. These young individuals may become potential blood donors as well as motivators and role models for society if appropriate strategies are put in place to enhance understanding, attitudes, and practices towards blood donation [5].

Based on the information provided, this study aims to explore the knowledge, attitudes, and practice (KAP) related to blood donation among diploma students at Universiti Tun Hussein Onn Malaysia (UTHM). The objectives of this study are to compare the level of knowledge, attitude, and practice level of blood donation between gender among UTHM diploma students, to determine the significance difference of knowledge, attitude and practices of blood donation based on gender and to identify the relationship between knowledge, attitude, and practice level of blood donation among diploma students in UTHM.

2. Materials and Methods

2.1 Study Design and Participants

A cross – sectional study, web – based survey was carried out during third week of the semester to assess the knowledge, attitude, and practice towards blood donation among diploma students in UTHM. This questionnaire was distributed in UTHM Pagoh before the mid – semester break of semester 2, 2023/2024 informally through social media platforms such “WhatsApp” and “Telegram” to different groups of diploma students in UTHM Pagoh. Primary data was collected using a google form questionnaire from 200 respondents of Year 1 and Year 2 diploma students. This questionnaire covering four sections of questions.

2.2 Instruments

The set of questionnaires that used for collecting data consisted of four sections of questions. It was for gathering information about the respondents’ socio – demographic data which are age and gender, year of study, courses of study and the level of knowledge, attitude, and practice among the students. Three sections which are section A, section B, and section D using multiple choice grid meanwhile section C was using the Likert scale. In section A, there are four questions about the socio – demographic data. For section B and C, they contain six questions about the knowledge and attitude. Those parts are to find out how much the respondents know about the blood donation and to measure perception and impact of the blood donation. Section D which is using multiple choice grid contain four questions about the practice of blood donation in their life. Google Form responses were used to assess "Knowledge," "Attitude" and "Practice" towards blood donation among diploma students in UTHM by analysed the percentage option in SPSS software.

2.2.1 Google Forms Questionnaire

This questionnaire is a self-report tool that assesses the level of knowledge, attitude, and practice towards blood donation. To assess the stated objectives, the questions based on the KAP were divided into four sections: knowledge of blood donation, attitude towards blood donation, and practice of blood donation respectively. The correct answers that indicate the level of knowledge, attitude, and practice towards blood donation were set during the formation of the Google Forms questionnaire.

As for the knowledge and attitude towards blood donation questions, the students were asked to choose the answer based on their knowledge and opinion, and the correct answers that were set earlier indicates that the respondents have knowledge and attitude towards blood donation. The respondents were also asked about the practice of blood donation in their life.

2.3 Statistical Analysis

Data were entered manually and analysed statistically using SPSS Software Version 27. Tables were constructed to produce the percentage for demographics, knowledge, attitude and practice of blood donation to achieve the first objectives. In addition, the second objective was analysed using independent sample test meanwhile the third objective was using Pearson correlation.

3. Results and Discussion

The following are the results and discussion of knowledge, attitude, and practice towards blood donation among diploma UTHM students.

3.1 Results

Table 1 shows the respondents' demographic data used to compare the level of knowledge, attitude, and practice levels towards blood donation between male and female of diploma students in UTHM.

Table 1 Respondents' demographic data

		Count	Column N %
Gender	Male	76	38.0
	Female	124	62.0
Age	18-19 years old	49	24.5
	20-21 years old	133	66.5
	21-22 years old	18	9.0
Course	DAU	57	28.5
	DAK	17	8.5
	DAA	34	17.0
	DAM	39	19.5
	DAE	24	12.0
	DAG	11	5.5
	DAT	18	9.0
Year	1	85	42.5
	2	115	57.5

As shown in Table 1, the number of female diploma students is greater than male students. A total of 133 students which is equivalent to 66.5% from 20-21 years old have answered the questionnaire compared to 18-19 years old and 21-22 years old with only 49 students and 18 students, which corresponds to 24.5% and 9% respectively. From Table 1, most of the respondents are from the course Applied Science, known as DAU, which is 57 students with 28.5%. Moreover, most of the students who answered this survey from Year 2 with 57.5%.

Table 2 Knowledge level of blood donation based on gender

		Gender			
		Male		Female	
		Count	Column N %	Count	Column N %
K1. What is the duration of blood donation?	1 month	14	18.4	15	12.1
	2 months	23	30.3	21	16.9
	3 months	23	30.3	53	42.7
	4 months	16	21.1	35	28.2
K2. What is the minimum age for blood donation	17 years old	19	25.0	23	18.5
	18 years old	46	60.5	84	67.7
	19 years old	10	13.2	12	9.7

	20 years old	1	1.3	5	4.0
K3. What is the minimum weight for blood donation?	50 kg	30	39.5	91	73.4
	80 kg	23	30.3	6	4.8
	55 kg	20	26.3	27	21.
	97 kg	3	3.9	0	0.0
K4. What is the volume of blood donated in each donation?	375 mL	10	13.2	39	31.5
	400 mL	24	31.6	40	32.3
	450 mL	30	39.5	26	21.0
	500 mL	12	15.8	19	15.3
K5. Is it true that germs can be spread through infected blood?	Yes	66	86.8	112	90.3
	No	10	13.2	12	9.7
K6. What are the reasons for not donating blood?	Limited knowledge about blood donation	40	52.6	50	40.3
	Never thought about it	8	10.5	12	9.7
	Interested but did not get opportunity	13	17.1	25	20.2
	Afraid of needles	4	5.3	17	13.7
	Health reasons	10	13.2	19	15.3
	Other	1	1.3	1	0.8

Table 2 shows the answers for knowledge level of blood donation among diploma UTHM students. Six statements were given in the questionnaire for this part to assess the knowledge of blood donation. Each of the statements were required to choose one correct answer. For the first question (K1), only 35 female students and 16 male students with 28.2% and 21.1% respectively chose 4 months. For the second question (K2), majority of the students answered correctly which is 18 years old for the minimum age for blood donation with 67.7% of female students and 60.5% male students. For the minimum weight for blood donation (K3), 73.4% female students and 39.5% of male students have answered 50kg. This indicates that they are sensitive about the minimum age and weight for blood donation. The next question is the volume of blood donation in each donation which is 450mL (K4). Only 21% of female students and 39.5% of male students have answered correctly. Next, 90.3% of female students and 86.8% of male students have answered Yes whether germs can be spread through infected blood (K5). For the last question, 40.3% of female students and 52.6% of male students have limited knowledge about blood donation and a reason for not donating blood (K6).

Table 3 Attitude level of blood donation based on gender

		Gender			
		Male		Female	
		Count	Column N %	Count	Column N %
A1. Blood donation can save life	Strongly disagree	1	1.3	2	1.6
	Disagree	3	3.9	2	1.6
	Neutral	7	9.2	5	4.0
	Agree	15	19.7	16	12.9
	Strongly agree	50	65.8	99	79.8
A2. Donating blood is bad for the health	Strongly disagree	30	39.5	72	58.1

	Disagree	22	28.9	38	30.6
	Neutral	10	13.2	8	6.5
	Agree	7	9.2	5	4.0
	Strongly agree	7	9.2	1	0.8
A3. I will donate my blood to anyone.	Strongly disagree	1	1.3	3	2.4
	Disagree	4	5.3	8	6.5
	Neutral	19	25.0	27	21.8
	Agree	23	30.3	40	32.3
	Strongly agree	29	38.2	46	37.1
A4. I want to be a regular donor.	Strongly disagree	4	5.3	3	2.4
	Disagree	8	10.5	9	7.3
	Neutral	25	32.9	37	29.8
	Agree	22	28.9	34	27.4
	Strongly agree	17	22.4	41	33.1
A5. Donating blood is a moral responsibility	Strongly disagree	2	2.6	1	0.8
	Disagree	5	6.6	6	4.8
	Neutral	18	23.7	22	17.7
	Agree	29	38.2	43	34.7
	Strongly agree	22	28.9	52	41.9
A6. Blood donation is a charitable	Strongly disagree	4	5.3	3	2.4
	Disagree	5	6.6	4	3.2
	Neutral	18	23.7	14	11.3
	Agree	21	27.6	34	27.4
	Strongly agree	28	36.8	69	55.6

Table 3 shows the answers for attitude level of blood donation of female and male diploma students. Based on the first question regarding if blood donation can save life (A1), 99 female students and 50 male students strongly agree, with 79.8% of female students and 65.8% of male students. For second question (A2), 58.1% female students and 39.5% of male students have been strongly disagree that donating blood is bad for the health. The next question is 37.2% of female students and 38.2% of male students have been strongly agree to willingly donate their blood to anyone (A3). For fourth question (A4), 33.1% of female students and only 22.4% of male students have been strongly agree to be a regular donor. The next question is donating blood is a moral responsibility result (A5). This can be seen when 41.9% of female students and 22.4% of male students strongly agree with this statement. However, some of the students think that blood donation is a charitable (A6). This can be seen when 55.6% of female students and 36.8% of male students have been strongly agree that blood donation is charitable.

Table 4 Practice level of blood donation based on gender

		Gender			
		Male		Female	
		Count	Column N %	Count	Column N %
P1. Have you ever donated blood?	Yes	38	50.0	26	21.0
	No	38	50.0	98	79.0

P2. Did any organization encourage you to donate blood?	Yes	53	69.7	93	75.0
	No	23	30.3	31	25.0
P3. Did anybody other than an organization encourage you to donate blood?	Yes	46	60.5	84	67.7
	No	30	39.5	40	32.3
P4. Did any of your relatives ever receive blood from others?	Yes	36	47.4	41	33.1
	No	16	21.1	24	19.4
	Don't know	24	31.6	59	47.6

Table 4 shows the practices level of blood donation among diploma students in UTHM. Based on Table 4, 79% of female students and 50% of male students have answered Yes to the first statement which is have you ever donated blood (P1). For second statement (P2), 75% of female students and 69.7% of male students have answered Yes if any organization encourage them to donate blood. Moreover, the third statement is to determine whether did anybody other than an organization encourage them to donate blood (P4). Based on Table 4, 67.7% of female students and 60.5% of male students chose Yes. For the last statement (P5), only 33.1% of female students and 47.4% of male students have answered Yes if any of their relatives ever receive blood from others.

Table 5 Independent sample test of knowledge, attitude and practice of blood donation

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Knowl edge	Equal variances assumed	.067	.796	.238	198	.812	.01549	.06508	-.11285	.14383
	Equal variances not assumed			.232	146.167	.817	.01549	.06673	-.11639	.14737
Attitu de	Equal variances assumed	1.750	.187	-1.178	198	.240	-.10293	.08739	-.27526	.06940
	Equal variances not assumed			-1.111	130.611	.268	-.10293	.09262	-.28616	.08030
Practi ces	Equal variances assumed	5.747	.017	-2.053	198	.041	-.11715	.05705	-.22965	-.00464
	Equal variances not assumed			-1.978	140.151	.050	-.11715	.05923	-.23424	-.00005

Table 5 shows the significant difference in knowledge, attitude and practice level of blood donation between male and female diploma students in UTHM. For this table, the mean seen is from the equal variance not assumed because the sample size for this study is not same. As for mean knowledge, it shows that the p-value for knowledge section is 0.817 which is larger than 0.05, so there is no significant difference in level of knowledge by gender in UTHM. Next for mean attitude, p-value that found is 0.268 which is more than 0.05 prove there is also no

significant difference in level of attitude by gender among male and female students. Based on mean practice, p-value that mentioned were 0.050. This indicates that there is no significant difference exists in level of practice by gender among UTHM students because $p > 0.05$. It shows the statistical difference between the value.

Table 6 Correlation between knowledge, attitude, and practice level of blood donation

		Knowledge	Attitude	Practices
Knowledge	Pearson	1	.103	.032
	Correlation			
	Sig. (2-tailed)		.148	.654
	N	200	200	200
Attitude	Pearson	.103	1	-.113
	Correlation			
	Sig. (2-tailed)	.148		.111
	N	200	200	200
Practices	Pearson	.032	-.113	1
	Correlation			
	Sig. (2-tailed)	.654	.111	
	N	200	200	200

Table 6 shows that the correlation is not significant between knowledge and attitude level of blood donation with a p-value of 0.148 which larger than 0.05. The result same goes to knowledge and practice level of blood donation which is not significant with p-value of 0.654. For attitude and practice level of blood donation, the correlation is not significant with a p-value of 0.111.

To sum up, most of female and male diploma students have a basic knowledge but poor attitude toward blood donation. Moreover, they might have a basic knowledge regarding blood donation but did not apply them in real life. They may have good attitude toward blood donation, but they were not exposed the correct way to practice blood donation.

4. Conclusion

Increased demand for blood is a worldwide occurrence. In Malaysia, the values of selflessness and community are the foundation of Malaysian blood donation culture, and the country's people understand how important it is for them to provide a consistent and secure supply of blood to those in need [6]. The survey demonstrated that diploma students in UTHM Pagoh have high level of knowledge, attitude, and practice (KAP) towards blood donation. The finding also proved that there is a no significant difference in mean practices between male and female, indicating that they differ in practices but not in their knowledge or attitude. The non-significant correlations among mean knowledge, mean attitude, and mean practices suggest that they are not strongly interrelated. Further research needs to be conducted to find effective ways to spread awareness about the blood donation. It can increase the level of knowledge, attitude, and practice (KAP) towards blood donation among diploma UTHM students.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

The authors confirm contribution to the paper as follows: **study conception and design:** Anes Aleeya Zulaikha Mhd Sahrudin, Nurin Sofea Ismail, Adnin Afifi Nawi; **data collection:** Anes Aleeya Zulaikha Mhd Sahrudin, Nurin Sofea Ismail, Adnin Afifi Nawi; **analysis and interpretation of results:** Anes Aleeya Zulaikha Mhd Sahrudin, Nurin Sofea Ismail, Adnin Afifi Nawi; **draft manuscript preparation** Anes Aleeya Zulaikha Mhd Sahrudin, Nurin Sofea Ismail, Adnin Afifi Nawi. All authors reviewed the results and approved the final version of the manuscript.

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