

## Knowledge, Attitude and Practice of Nursing and Computer Science Students on Blood Donation. A Comparison study

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**Abstract:** Saving lives could be a noble act and donating blood is one way to do it. People can save up to three lives by donating blood because a pint of blood actually can be separated into three components which are red blood cells, platelets and plasma. In order to increase blood supply and to maintain adequate stock of blood, voluntary and regular blood donors are needed to meet the increasing demand. The donation from young adults like university students is more preferable because they are a healthy group with a low risk of transmitting disease and more knowledgeable than the other groups. Considering the significance of university students in blood donation practice, the aim of the study was to assess university students' knowledge, attitude and practice on blood donation among nursing and computational sciences students. **Methods/Materials:** A descriptive cross-sectional study was conducted on 295 students from nursing and computational science programs. A well-structured questionnaire was used as research instruments which is adapted from Amatya (2012) with the author's permission and internal reliability was Cronbach's alpha >0.7. Data was analyzed by using SPSS version 20 and then measured the association between variables using the Chi-square test. **Result:** There was 93.6% response rate and 98% of the respondents had high knowledge and 96.6% had a positive attitude about blood donation. Among 35.6% respondents who had donated before; six were regular donors. More male respondents practiced blood donation compared to female which was 50% and 30.6% respectively. There was a significant association between year of study with blood donation attitude among respondents in IIUM (p value = 0.037). There was a significant association between year of study and practice of blood donation (p value = 0.011). There was a significant association between gender and practice (p value = 0.002). Meanwhile, gender had no association between knowledge and attitude towards blood donation. Most respondents donated for moral satisfaction and humanity while the commonest reason for not donating was restraint factors: medically unfit, time constraint, and no permission from parents. **Conclusion:** Organizing more blood donation campaigns and participation of students in the occasion will increase blood donation practice. The study findings can be a baseline evidence for health care professionals and may contribute to develop an educational platform on blood donation globally.

**Keywords:** Blood Donation, Knowledge Attitude and Practice, University Students,

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### I. Introduction

Saving lives could be a noble act and donating blood is one way as people can save up to three lives by donating blood.<sup>4</sup> Generally, all countries need increasing number of voluntary blood donors in order to meet 2020 goal which aim for reliable supply of safe blood.<sup>15</sup> The need for blood is tremendous not only in United States, which blood transfusion is needed in every two seconds<sup>6</sup>, but also in Malaysia: about 2000 pints of blood products are needed by 925 patients nationwide in a day for blood transfusion due to illness yet this amount does not include for emergency and rare blood type cases.<sup>11</sup> In 2012 the statistics provided by the National Blood Centre Malaysia (PDN) indicate that only three percent of the Malaysian population donated blood in the past two years, which was still below five percent of the international average.<sup>9,10</sup> In order to increase blood supply and to maintain adequate stock of blood, voluntary and regular blood donors are needed to meet the increasing demand. An estimated 38% of reported voluntary blood donations are contributed by people aged younger than 25 years old, hence, in order to achieve hundred percent voluntary, unpaid blood donors, WHO encourage all countries in the world to focus on young generation.<sup>15</sup> University students are more preferable because they are a healthy group with low risk of transmitting disease and more knowledgeable than the other groups.<sup>7</sup> If university students regardless of their field of education have positively supported and participate in blood donation, improvement in blood donors could be attainable. Health science students like nursing students are those who are expected to convey the information regarding the needs for safe blood donation to the general populations, however strategies and promotion should not only focus on the descendants of health line. Though there are

several studies involved different faculty, a comparative study not yet done on health science and non-health science group in Malaysia. Hence this study was done with the sought to give better clarification and thus can help in expanding the information, especially about donating blood on a regular basis. Considering the significance of undergraduate students in blood donation practice, therefore, this study was carried out with the aim to understand and compare the knowledge, attitude and practice about blood donation among students in health and non-health programs.

## II. Materials And Methods

A cross-sectional descriptive study was conducted among nursing and computer science undergraduate students of International Islamic University Malaysia, at Kuantan campus, Pahang. The sample size was calculated as 315. Universal sampling method was used in all first, second and third year students who enrolled in nursing and computer sciences program during semester 1, 2016/2017. A pre tested and well developed questionnaire adapted from Amatya (2012) consisting of four parts was used as in this study<sup>5</sup>. A pilot test was done to pretest the questionnaire and after few items deleted, a good internal consistency Cronbach's alpha of more than 0.7 was obtained. The questionnaire covered in the respondents' demographic data, knowledge, attitude and practice on blood donation. Ethical approval was obtained from the Kulliyah of Nursing Post Graduate Research Committee (KNPGRC) and IIUM Research Ethics Committee (IREC). After explaining the purpose of the study, getting the informed consent from the respondents, and then questionnaires were distributed and collected back after completion. The set of answered questionnaire was put in an envelope and sealed, and the information was kept anonymous. SPSS version 20 was used for data management and P value <0.05 was set as statistically significant.

## III. Results

The response rate of 93.6%, it means the total respondents were 295 respondents. Among 295 respondents, 76 males (25.8%) and 219 females (74.2%). The majority of the students were in the age group of 21-23 years, with a mean age of 22.07. Of the two selected programs, there were 150 students from kulliyah of nursing (50.8%) and 145 from computational science (49.2%). The respondents were studied from three years of study which year one students consist of 116 (39.3%), year two 66 students (22.4%) and year three students were 113 (38.3%). The demographic data were shown in Table 1.

**Table 1:** Demographic Data of Respondents

N=295	Variables	Frequency (n)	Percentage (%)
Age	<21	4	1.4
	21-23	279	94.5
	>23	12	4.1
	<b>Mean</b>	<b>22.07</b>	<b>SD</b>
			1.138
Gender	Male	76	25.8
	Female	219	74.2
Program of study	Nursing	150	50.8
	Computational Science	145	49.2
Year of study	Year one	116	39.3
	Year two	66	22.4
	Year three	113	38.3

The result showed that the majority of the respondents had higher knowledge related to blood donation which are 289 (98%) while just 6 (2%) had a low level of knowledge on blood donation. It was shown in (Table 2).

**Table 2:** Respondents' Knowledge on Blood Donation

Level of knowledge	Frequency (n)	Percentage (%)
0-8 (Low)	6	2.0
9-18 (High)	289	98.0

Most of the respondents had a positive attitude towards blood donation (96.6%), and only 3.4% had a negative attitude on blood donation. It was shown in Table 3.

**Table 3:** Respondents' Attitude towards Blood Donation

Attitude	Frequency (n)	Percentage (%)
4-8 (Negative attitude)	10	3.4
9-12 (Positive attitude)	285	96.6

Out of 295 respondents, 190 (64.4%) had never donated blood in the past while 105 (35.6%) had a history of donating blood which 6 respondents are regular blood donors who donated at every three to four months. Among 105 blood donors, 49 (46.7%) respondents donated one or two times every year, 29 (27.6%) had donated blood occasionally, and 21 (20%) donated only at times of needs. The commonest reasons for donation among 105 blood donors are: moral satisfaction or humanity, followed by as an experience and being in a group of donors. One of respondents who had donated blood stated that the other reasons for donating are as *sadaqah* or charity and he want to know his blood type.

Overall, out of 105 blood donors, 80 (76.2%) had planned ahead for blood donation and 25 (23.8%) do not have a specific plan. The listed practices that should be done before blood donation that had been used for this study were: avoid physical activities for a day, do not take alcohol, do not smoke, do not take usual medications, take plenty of fluids ahead and others. Take breakfast and get enough sleep is the other thing to do before blood donation that was cited by respondents. The more things they do to prepare themselves indicate that the respondents know the best practice before performing blood donation.

The majority of the respondents who donated blood (105 out of 295) had never experienced any adverse effects while donating blood, which is 66 (62.9%) and another 39 (37.1%) of the respondents had a history of facing adverse effects. Among that, the most common post donation effects experienced by respondents is dizziness which is reported by 21 (53.8%) respondents. Less common adverse effects are bruises (17.9%), fainting (12.8%), marked weakness (7.6%), others (5.1%), and remarkable pain (2.5%). Other adverse effects that were mentioned by respondents are: anemia, sleepiness, numbness and tingling in extremities, feeling thirsty, and vomiting on the next day of donation. For the reason of not donating, the commonest were that respondents had restraint (being medically unfit, time commitment and parents do not allow donating blood). Fear of blood donation, no information given regarding blood donation and nobody has requested them to donate were also reasons for not donating among respondents. Few do not like the idea of removing blood while others mentioned that traumatized, practicing unhealthy lifestyle, anemia and thalassemia, do not have the courage yet, vein hard to find for venipuncture, and because of menstruation. The details showed in Table 4.

**Table 4: Respondents' Practice on Blood Donation**

Question		Frequency (N=295)	Percentage (%)
History of donating blood	Yes	105	35.6
	No	190	64.4
		<b>(n=105)</b>	<b>%</b>
How often you donate	Regularly at every 3-4 months	6	5.7
	1 or 2 times every year	49	46.7
	Occasionally	29	27.6
	Only at times of need	21	20.0
Reasons for donating	Moral satisfaction	79	75.2
	Blood needed by someone	0	0
	Being in donors' group	9	8.6
	As experience	16	15.2
	Others	1	1.0
Plan ahead for blood donation	Yes	80	76.2
	No	25	23.8
	(among 80 respond yes)	<b>(n=80)</b>	
	-Done 1-2 things	61	76.2
	-Done 3-5 things	19	23.8
		<b>(n=105)</b>	<b>%</b>
Experience of adverse effects	Yes	39	37.1
	No	66	62.9
		<b>(n=39)</b>	<b>%</b>
Type of adverse effect experienced by donors	-Remarkable pain	1	2.5
	-Fainting	5	12.8
	-Dizziness	21	53.8
	-Prolonged bleeding	0	0
	-Marked weakness	3	7.6
	-Bruises	7	17.9
	-Others	2	5.1
		<b>(n=105)</b>	<b>%</b>
Degree of adverse effects	Mild	71	67.6
	Moderate	25	23.8
	Severe	9	8.6
	Serious	0	0
		<b>(n=190)</b>	
Reasons for not donating blood (more than one respond)	Restraint	134	
	No information	14	
	Fear	82	
	Refuse	7	
	Others	16	

The result revealed that there was no statistically significant relationship between the program of study and knowledge, attitude, practice on blood donation (p value > 0.05). It was shown in Table 5.

**Table 5:** Comparison of Knowledge on Blood Donation among different program

Variable	n	Knowledge High (%)	Knowledge Low (%)	X <sup>2</sup> statistics (df)	P value
Nursing program	150	149 (99.3)	1 (0.7)		0.099
Computational science program	145	140 (96.6)	5 (3.4)		
		<b>Positive Attitude (%)</b>	<b>Negative Attitude (%)</b>		
Nursing program	150	144 (96.0)	6 (4.0)		0.396
Computational science program	145	141 (97.2)	4 (2.8)		
		<b>Donors (%)</b>	<b>Non-donors (%)</b>		
Nursing program	150	58 (38.7)	92 (61.3)	1.257 (1)	0.262
Computational science program	145	47 (32.4)	98 (67.6)		

In addition, for the relationship between the year of study with an attitude and practice of blood donation, the finding showed that the p value <0.05, hence there is a significant association between year of study with an attitude and practice of blood donation. The results revealed that there is a significant association between gender and practice as significant level is less than 0.05, which p value = 0.002. Meanwhile, gender had no association between knowledge and attitude towards blood donation. It showed in Table 6.

**Table 6:** Signification association between studied variables with p value

Variables		*p value
Gender	Practice	0.002
Year of study	Attitude	0.037
Year of study	Practice	0.011

#### IV. Discussion

Majority possessed good knowledgas university students lived in population of learning, directly or indirectly gaining knowledgeable information<sup>14</sup>. The surrounding of learning in campus is a very appropriate medium for youngsters expose to the new culture of blood donation and they can share with outside community for good practice. However, there was a study among Jordanian blood donors found that only 28% of participants scored their knowledge beyond the average level and this somehow can be because of misconceptions about blood donation among Jordanians and lack of educational programs in improving the population's knowledge<sup>1</sup>. Overall, positive attitude was observed, which is consistent with many studies across the world<sup>1</sup>. There is controversial that remunerated blood donation is the same quality as voluntary donation, as the study said that voluntary, non-remunerated blood donation remains the safest and most ethical means of securing the blood supply. In this study, incentives are not the reason for donating blood unlike some countries which practice payments increase donation volume. Less than half percent respondents had donated before<sup>13</sup> and they would agree mild dizziness was the most common side effects post-donation. While being medically unfit, time constraint, and did not get the permission from parents were also the reasons for not donating blood among respondents. Another study stated that the reason of not donating blood was because of less opportunity due to tight lecture schedule and inadequate knowledge<sup>14</sup>, and long distance from blood drives, transportation problem, fears, accompanied by lack of information<sup>3</sup>. The result was opposite to previous study, which there is no association between different streams and level of knowledge and attitude about blood donation<sup>12</sup>. The blood donation practice had the male propensity because of socially active and easily approached behavior<sup>5</sup> however, in most European countries' donor population had no gender differences<sup>8</sup>. There is no significant relationship between the year of study and knowledge but there is a relationship between year of study with blood donation attitude and practice among respondents. Not many studies compared year of study with blood donation and the result was not the same because they found that there was no difference between age groups, class year and place of residence regarding blood donation<sup>2</sup>.

#### V. Conclusion

Even though knowledge and attitude is good, there still lack of blood donation practice among university students. This study only collected data from selected populations because of time constraint. Future research should be done from different faculties and institutions exist in Malaysia in order to achieve quality of data. Correlations between respondents' demographic, barriers and misconception, and knowledge, attitude and practices regarding blood donation is needed. The correlations between practice and knowledge should be

needed and also relationship between donors and non-donors knowledge level should be addressed. This study may contribute to developing an educational platform on blood donation at international level as education and campaigns can be improved to encourage non- donors to donate blood in the future on a regular basis.

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