BR-13

NMRR NO: NMRR-18-1151-41210(IIR)

Intention to Donate Hematopoietic Stem Cells Among Blood Donors

Chuo Yew TING[a,b], Yew Fong LEE[c,d], Chien Joo LIM[e], Rachel Sing Kiat TING[f], Mohammad Masrin MD ZAHRIN[g], Abu Sufian AHMAD[h], Jack Siew Yu WONG[i], Masita ARIP[j], Zubaidah ZAKARIA[j], Shahren AHMAD ZAIDI ADRUCE[k], Jessie Koh Sing TNAY[b], Yi Shen WONG[g]

[a] Pharmacy Practice and Development Division, Sarawak State Health Department. [b] Institute of Borneo Studies, Universiti Malalysia Sarawak. [c] Institute of Global Health, Faculty of Medicine, University of Geneva. [d] Ministry of Health, Malaysia. [e] Clinical Research & Innovation Office, Tan Tock Seng Hospital, Singapore. [f] Jeffrey Cheah School of Medicine and Health Sciences, Monash University, Malaysia. [g] Blood Transfusion Services and Blood Bank Department, Sarawak General Hospital. [h] Blood Transfusion Services and Blood Bank Unit, Sibu Hospital. [i] Hospital Miri. [j] Institute for Medical Research, Ministry of Health. [k] Faculty of Cognitive Sciences and Human Development, Universiti Malalysia Sarawak.

INTRODUCTION

This study investigated the level of and the influence of socio-demographic characteristics, knowledge, attitude, subjective norm and self-efficacy on the intention to donate hematopoietic stem cells (HSC) among blood donors.

METHODS

- Study design: Cross-sectional, 1st May – 31 Aug. 2019
- Total sample size: 569
- Sampling method: Probability proportional to size sampling method
- Study sites: Sarawak General Hospital, Sibu Hospital, Miri Hospital
- Instrument and validity:

Construct related to HSC donation	Cronbach's alpha
Knowledge (4 items; Binary answer)	0.59
Attitude (10 items; 7 points Likert-scale)	0.72
Subjective norms (3 items; 7 points Likert-scale)	0.72
Self-efficacy (3 items; 7 points Likert-scale)	0.82
Intention (6 items; 7 points Likert-scale)	0.96

- Data collection: Self-administered questionnaire
- Data analysis: SPSS V22

Hypothesis testing	Statistical test
Association between socio-demographic and intention to donate	Independent t test/ANOVA
Association between knowledge, attitude, subjective norms, self-efficacy, and intention to donate	Pearson's correlation
Regression for factors associated with intention to donate	Linear regression

RESULTS

Table 1: Socio-demographic and hematopoietic stem cell donation related characteristics of the respondents and their correlation with intention to donate hematopoietic stem cells (N = 569)

		N (%)	t/F; P value
Socio-demographic characteristics			
Age in years	Mean (SD) = 34.6 (9.97)		
	18 – 50	530 (93.1)	- 1.91;
	> 50	39 (6.9)	0.057[a]
Gender	Male	394 (69.2)	-1.18;
	Female	175 (30.8)	0.239[a]
Ethnicity	Malay	201 (35.3)	1.23;
	Iban	73 (12.8)	0.175[b]
	Bidayuh	36 (6.3)	
	Chinese	198 (34.8)	
	Indian	8 (1.4)	
	Others	53 (9.3)	
Educational level	No formal education	4 (0.7)	1.36;
	Primary school	15 (2.7)	0.087[b]
	Secondary school	259 (46.0)	
	Tertiary	285 (50.6)	
HSC donation related characteristics			
Registered with MSCR	Yes	26 (4.6)	0.14;
	No	525 (95.3)	0.890[a]
Past donation of HSC	Yes	7 (1.3)	-0.42;
	No	547 (98.7)	0.674[a]
Attended any promotion related to HSC donation	Yes	25 (4.5)	-0.77;
	No	535 (95.5)	0.444[a]

HSC: Hematopoietic stem cell; MSCR: Malaysian Stem Cell Registry; SD: Standard deviation; t/F value: t statistics value for independent t test, F statistics value for ANOVA test
[a] Independent t test
[b] ANOVA test

Table 2: Multiple linear regression for variables related to intention to donate hematopoietic stem cells (N = 520)

Outcome	Independent variables[a]	Multiple Linear Regression[b,c] Std. coeff.	95% CI	P value
Intention to donate HSC	Knowledge towards compulsory registration as HSC donor prior to donation	0.03	-0.15, 0.30	0.526
	Attitude about regulations of HSC donation	**0.21**	**0.13, 0.35**	**<0.001**
	Attitude about handling of HSC donation	0.09	-0.01, 0.22	0.067
	Attitude about the potential side effects of HSC donation	**0.14**	**0.02, 0.10**	**0.001**
	Subjective norms about HSC donation	**0.35**	**0.27, 0.42**	**<0.001**
	Self-efficacy on HSC donation	**0.15**	**0.09, 0.32**	**<0.001**
	Age of respondents	0.06	-0.002, 0.02	0.127
	Highest education level	**0.10**	**0.03, 0.44**	**0.026**
	Ethnicity	0.05	-0.02, 0.11	0.185

[a]Variables with p value less than 0.200 in univariate analysis were included into the multivariate model using enter method.
[b] Multicollinearity was checked and not found (variance inflation factor < 3); normality of residuals was checked (using histogram and normal P-P plot of regression standardized residual) and found fulfilled.
[c] R square equals to 0.279 (standard error = 1.20)); intercept (95%CI) equals to -1.677 (-3.04, -0.31)

DISCUSSION/CONCLUSION

Overall, 87.1% reported a positive intention to donate HSC. Concerns about the regulations of HSC donation, potential side effects of HSC donation must be addressed while promoting HSC donation. Improving subjective norms and self-efficacy about HSC donate may enhance their intention to donate. The findings are useful for the development of strategies for donor recruitment in the region.