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Factors Influencing Motivation on Blood Donation of Nursing Students

Yoon Jung Kim#

Department of Nursing, Changshin University, 262 Paryong-ro, MasanHoiwon-gu, Changwon-si, Korea

A B S T R A C T

The purpose of this study is to analyze the relation and differences among the factors that influence the motivation on blood donation of nursing students. This study is a descriptive research study to investigate the related variables that influence the motivation on blood donation of nursing students, and the data was conducted from October 1 to 30, 2017, extracting 110 students from the department of nursing in G province. The collected data were analyzed using the SPSS / WIN 21.0 program. As a result of analyzing the correlation between variables, the more positively the attitude towards the blood donation was, the higher the motivation for blood donation was. The variables related to the motivation on blood donation in nursing students were found to be attitudes of blood donation. Based on these results, the support of health providers is necessary to have a positive attitude of blood donation. In addition, since the relationship with the related variables has been clarified, it is considered to be used to develop educational programs that encourage and recommend blood donation.

Key words: blood donation, attitude, motivation

Background

Blood is a type of fluid that flows through blood vessels such as arteries, veins, and capillaries in the body, which takes up about 7-8% of the body's weight, supplies oxygen and nutrients to various organs, also delivers antibodies or cells to fight infection, and when bleeding occurs, it coagulates blood to prevent bleeding (The Korean Society of Hematology, 2018). Blood transfusion refers to a treatment that receives blood from another person when blood loss is drastically reduced due to bleeding or when there is a risk of life due to lack of blood cell components due to a disease bleeding (The Korean Society of Hematology, 2018).

In modern times, the chances of massive accidents and numerous diseases are increasing, and when blood is needed, blood can't be manufactured artificially and blood can only be relied on, so blood donation is very important. According to the 2019 Korea Red Cross Blood Management Headquarters statistics, the total blood donation rate in Korea was 2,613,901 cases, which is 4.3% compared to the blood donor population, and the fact that 20-29 years of age and college students make up the largest proportion of all blood donors shows that college students' blood donation is influential (Korean Red Cross Blood Services, 2019). However, it is predicted that only 44.5% of the blood transfusion needs can be supplied by 2030 due to the decrease in blood donors due to the decrease in the young population such as students and

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soldiers, that leads to a major challenge on to encourage blood donation (Park, *et. al*., 2006).

In previous studies, positive recognition, attitudes, and motivations for blood donation were factors that influence blood donation behavior, and among them, the donor's motivation was found to have a significant effect on the donation intention (Woo & Park, 2017). Motivation for blood donation can be divided into altruism, self-satisfaction, profit seeking and pure blood donation (Lee, 2013). Altruism refers to acting for the benefit of others without expecting external reward, and it has been found in the studies of high school students, higher altruistic scores showed higher blood donation behavior (Kim & Shin, 2010). The blood donation layer of our country is mainly in our 10s and 20s, so the shortage of blood donors due to the aging society is expected to cause serious problems.

The most influential factor in blood donation behavior is donation motive, thus, exploring the interrelationship between variables by identifying variables that influence the motivation for blood donation for nursing college students who will become nurses will be meaningful in developing educational programs to urge and encourage blood donation behavior.

Purpose

The purpose of this study was to analyze the associations and differences among the factors that influence the motivation of blood donation in nursing students. The specific purpose is as follows.

1. Examine the difference between the experience of blood donation, knowledge of blood donation, attitude of blood donation, and motivation on blood donation according to the general characteristics of nursing students.
2. Examine the difference of knowledge, attitude, and motivation on blood donation according to the experience of blood donation of nursing students.
3. Identify the correlations between motivation, knowledge, and attitude of blood donation of nursing students.

Methods

Research Design

This study is a descriptive research to investigate the related variables that influence the motivation on blood donation among nursing students.

Subjects

The subjects of this study were extracted from 120 nursing students at a university in G province. Using the G * power 3.1.9.2 program, a minimum sample size of 82 was calculated using 80% power, .05 significance level, and .30 effect size, data were collected from 120 people considering the dropout rate, and a total of 110 people, except 10 with insufficient answers, met the criteria for data analysis. The subjects of this study excluded 2nd grades who are in clinical practice. This is because it is not easy to collect data. In addition, the undergraduate program begin in 2018, and data was collected for 1st and 3rd grade students.

Research Tools

The Knowledge of Blood Donation

For the knowledge of blood donation, the tool developed by Sung (2006) was revised and supplemented by Kong (2014). It consists of a total of 14 questions, and the higher the score, the higher the level of knowledge about blood donation.

Attitudes of Blood Donation

The attitude of blood donation was based on the one developed by Han (2004) and modified by Kong (2014). Consisting 22 questions, higher scores on a 4-point rating scale from 1'most unlikely' to 4 'most likely' indicate a positive attitude toward blood donation. The reliability at the time of tool development was Cronbach's α = .88 and the reliability of this study was Cronbach's α = .87.

Motivation on Blood Donation

The motivation on blood donation was a tool developed by Lee (2013). It consists of 15 questions, and the higher the score on the 7-point rating scale from 1 point at 'most unlikely' to 7 points at 'most likely', the higher the motivation for blood donation. The tools were divided into four sub-factors, the reliability of the tools (Cronbach's α) was .76 for altruism, .84 for self-satisfaction, .75 for profit seeking, and .79 for pure blood donation, and in a study by Woo & Park (2017) that examined the degree of motivation for blood donation with the whole questions showed .86, .92 for

this study, that showed .89 for altruism, .90 for self-satisfaction, .81 for profit seeking, and .89 for pure blood donation which are the subfactors.

Data Collecting Method and Procedure

The study was conducted for 4 weeks from October 1, 2017, and the investigator explained the purpose of the survey directly to the subjects, promised anonymity and confidentiality, and received written consent to participate in the study. The total number of questionnaires distributed was 120, but 114 were collected which showed a 95.0% recovery rate, and out of those collected, 110 questionnaires were used for the final data analysis, except those with incomplete responses. About 10 to 15 minutes were required to complete the questionnaire.

Ethical Consideration

The data collected was promised not to be used for any purpose other than the study and indicated that it could be refused at any time if not want to participate during the study. It has been explained that all personal information will be anonymized during the analysis, and the collected data will be stored in password-protected cabinets that can be organized and viewed only by researchers.

Data Analysis Method

The collected data were analyzed using the SPSS / WIN 21.0 program according to the research purpose, and the specific analysis method is as follows.

1) The general characteristics (population sociological characteristics, blood donation characteristics) of nursing students were analyzed by real numbers and percentages.
2) The experience of blood donation according to general characteristics of nursing students was analyzed by x^2-test, and the difference between knowledge, attitude and motivation on blood donation was analyzed by t-test and ANOVA.
3) The knowledge, attitude and motivation on blood donation according to the experience of blood donation of nursing students were analyzed by t-test.
4) The correlation between knowledge, attitude and motivation on blood donation in nursing students was analyzed by Pearson's correlation.

Results

Experience of Blood Donation According to the General Characteristics of the Subjects

Experience of blood donation according to demographic characteristics

According to demographic characteristics of nursing students, there was a statistically significant difference in sex (x^2 =6.69, p=.010) and grade (x^2 =3.96, p=.047). Blood donation rate was higher in male (94.7%) among sex and 3rd grades (83.9%) (<Table 1>).

<Table 1> Experiences of blood donation according to demographic characteristics (N=110)

Characteristics	Categories	Total N (%)	Mean (SD)	Blood donation (n=77)	Non-blood donation (n=33)	$x2$	p
				N (%)	N (%)		
Sex	Men	19(17.3)		18(23.4)	1(3.0)	6.69	.010
	Women	91(82.7)		59(76.6)	32(97.0)		
Age	Below 19	49(44.5)	23.3(7.53)	32(41.6)	17(51.5)	1.71	.426
	20~29	47(42.7)		36(46.8)	11(33.3)		
	Above 30	14(12.7)		9(11.7)	5(15.2)		
Religion	Yes	43(39.1)		33(42.9)	10(30.3)	1.53	.153
	No	67(60.9)		44(57.1)	23(69.7)		
Grade	1	79(71.8)		51(66.2)	28(84.8)	3.96	.047
	3	31(28.2)		26(33.8)	5(15.2)		
Perceived health status	Good	54(49.1)		39(50.6)	15(45.5)	0.25	.881
	Average	50(45.5)		34(44.2)	16(48.5)		
	Sick	6(5.5)		4(5.2)	2(6.0)		

<Table 2> Experience of blood donation according to blood donation characteristics of nursing students (N=110)

Characteristics		N (%)	Blood donation (n=77)	Non-blood donation (n=33)	x^2	p
			N (%)	N (%)		
Experience of blood donation	Yes	77(70.0)				
	No	33(30.0)				
Experience of encouraged against blood donation	Yes	43(39.1)	21(27.3)	5(15.2)	1.88	.170
	No	67(60.9)	56(72.7)	28(84.8)		
Future plan for blood donation	Yes	83(75.5)	74(96.1)	3(9.1)	66.08	<.001
	No	5(4.5)	3(3.9)	2(6.1)		
	Do not know	22(20.0)	-	22(66.7)		
Thinking about compensation after blood donation	Suitable.	54(49.1)				
	Rewards are not right.	1(0.9)				
	A big reward is needed.	6(5.5)				
	I want you to turn it into an effective return.	12(10.9)				
	I am not interested in compensation.	36(32.7)				
	Others	1(0.9)				

Experience of blood donation according to blood donation related characteristics

As the blood donation-related characteristics of the subjects, 70% (77 people) of the subjects have experience, and 30% (33 people) had no experience in blood donation, and 39.1% (43 people) had been advised against the blood donation.

Answers according to the question whether you are willing to donate blood in the future were as follows, 75.5% (83 people) indicating, 'I am willing to donate blood', then came 20.0% (22 people) as 'not sure', and 4.5% (5 people) at last, which shows more than two-thirds of students have positive thoughts on blood donation.

As the recognition of the rewards given after donating blood showed a result of 49.1% (54 people) as 'appropriate', 32.7% (36 people) as 'not interested', 10.9% (12 people) as 'wishing for an efficient return', 5.5% (6 people) as 'need a big reward', and 0.9% (1 person) 'reward is not right'. There was a statistically significant difference in the blood donation plan (x^2 = 66.08, p<.001) according to the blood donation experience of nursing students, and blood donation rate showed a high result in 'willingness to donate blood (89.2%)' (<Table 2>).

Differences in Knowledge, Attitude, and Motivation on Blood Donation According to the General Characteristics

The difference in attitude toward blood donation according to the general characteristics of the subjects was significantly different according to the blood donation plan (F=7.10, p=.001), and 'the willingness to donate blood' had a positive attitude towards donating blood more than 'uncertain' and 'never willing to donate blood' (<Table 3>).

The difference in motivation on blood donation according to the general characteristics of the subjects showed a statistically significant difference according to grade (F=4.34, p=.040), subjective health status (F=3.40, p =.037), blood donation plan (F=7.44, p = .001). In a case of considering oneself as healthy than to think as 'average health condition' and 'unhealthy', 'the willingness to donate blood' showed a higher result in motivation on blood donation than 'uncertain' and 'never willing to donate blood' (<Table 3>).

Differences in Knowledge, Attitude, and Motivation Level of Blood Donation According to Subject's Blood Donation Experience

According to the analysis of the knowledge, attitudes and motivations on blood donation according to the blood donation experience of subjects, knowledge (F=8.98, p=.003), attitude (F=7.99, p=.006) and motivation (F=11.24, p=.001) of those with blood donating experience were shown statistically significantly higher than those who don't. Looking at the levels of motivation, altruism, self-satisfaction type, profit seeking type, and pure blood donation type which is a subgroup of motive according to blood donation experience, the degree of blood donation experience showed a significantly higher result in the altruism type (F = 12.18, p = .001), self-satisfaction

<Table 3> Knowledge, attitude, and motivation on blood donation according to general characteristics (N=110)

Characteristics	Categories	n	Knowledge					Attitude					Motivation				
			M	SD	t or F	*p*	Sheffe	M	SD	t or F	*p*	Sheffe	M	SD	t or F	*p*	Sheffe
Sex	Men	19	11.2	1.61	1.08	.057		66.3	8.53	.97	.328		67.0	15.30	.34	.562	
	Women	91	10.7	1.91				64.3	7.60				64.6	16.27			
Age	Below 19	49	10.3	1.66	2.94	.057		63.1	7.21	1.90	.154		63.2	13.60	.97	.384	
	20~29	47	11.2	2.09				65.7	8.56				67.5	17.95			
	Above 30	14	11.0	1.41				66.6	6.02				63.2	17.39			
Religion	Yes	43	11.3	1.71	1.53	.199											
	No	67	10.4	1.90													
Grade	1	79	10.8	1.79	.002	.965		63.8	7.48	3.44	.066		63.1	15.41	4.34	.040	
	3	31	10.7	2.07				66.8	8.15				70.1	16.84			
Perceived health status	Good[a]	54	10.7	1.80	.32	.725		66.3	8.17	2.62	.077		68.9	17.69	3.40	.037	a>b>c
	Average[b]	50	10.8	1.85				63.3	7.01				61.8	13.94			
	Sick[c]	6	11.3	2.73				61.3	7.97				57.5	8.19			
Experience of encouraged against blood donation	Yes	43	11.2	1.76	1.57	.213		64.8	7.86	.01	.920		67.3	17.17	.70	.406	
	No	67	10.6	1.89				64.6	7.78				64.3	15.70			
Future plan for blood donation	Yes[a]	83	10.9	1.83	1.67	.193		66.1	7.32	7.10	.001	a>c>b	68.2	15.29	7.44	.001	a>b>c
	No[b]	5	9.6	3.36				56.4	5.03				56.4	19.82			
	don't know[c]	22	10.4	1.50				61.2	7.87				55.0	13.74			

<Table 4> Difference of knowledge, attitude, and motivation according to experience of blood donation (N=110)

Variables	Total (n=110)	Donor (n=77)	Non-donor (n=33)	t or F	*p*
	M±SD	M±SD	M±SD		
Knowledge	10.8±1.86	11.1±1.90	1.0±1.53	8.98	.003
Attitude	64.7±7.76	66.0±7.50	61.6±7.56	7.99	.006
Motivation	65.0±16.06	68.3±15.74	57.5±14.42	11.24	.001
Altruism	18.9±5.02	19.9±4.82	16.4±4.68	12.18	.001
Self-satisfaction	17.2±5.80	18.2±5.73	14.9±5.38	7.87	.006
Profit seeking-type	10.5±3.94	10.6±4.21	10.4±3.28	.05	.830
Pure blood donation	18.5±5.32	19.6±5.20	15.8±4.67	12.92	<.001

type (F = 7.87, p = .006), and pure blood donation type (F = 12.92, p<.001) as an exception of the profit seeker type (<Table 4>).

Correlations between Motives, Knowledge, and Attitude of the Subjects Toward Blood Donation

The results of correlation analysis between the main variables of this study are shown in Table 5. Nursing students' motivation on blood donation was positively correlated with the attitude of blood donation (r = .74, p<.001) (<Table 5>).

<Table 5> Correlation among motivation on blood donation, knowledge and attitude (N=110)

	Knowledge	Attitude
Attitude	.12(.214)	
Motivation	-.01(.942)	.74(<.001)

Discussion

The purpose of this study was to investigate the factors that influence the motivation on blood donation among nursing students.

As a result of analyzing the correlation of variables, the motivation for blood donation was positively correlated with the attitude of

blood donation. Woo & Park (2017) examined the donation intention and the predictive factors of blood donation on nursing college students, as a result, the motivation for blood donation was positively correlated with the attitude toward blood donation, and the result showed that the motivation for blood donation had a significant effect on blood donation intention.

In a study of health care workers, there was a significant positive correlation between attitudes of blood donation and altruism, and the blood donation group showed significantly higher attitude of blood donation and blood donation intention than the nonblood donation group (Kong, 2014). In other words, the higher altruism is, the more positive the attitude of blood donation is, the more positive the attitude of blood donation, the higher the motivation on blood donation, and considering that the motivation on blood donation is a variable affecting blood donation intention, it can be seen that the attitude of blood donation on the premise of altruism is an important variable for the motivation for blood donation. Support from the others, including health professionals, is important as an essential condition for a person to begin or sustain an action (Deci & Ryan, 1985, 2000).

In the study of health behavior continuity, the relationship between subjects and health professionals who induce voluntary and active participation has resulted in sustaining health behavior and improving health outcomes (Zoffmann & Lauritzen, 2006). In addition, as the support of the health professional was sufficient, the health behaviors such as healthy eating and regular exercise could be observed autonomously (Lee & Park, 2012). These findings suggest that the role of health care providers in the education and transfusion of blood donation plays a large role in developing and sustaining a blood donation plan. Even if there is a future plan for blood donation, if fear of blood donation, but appropriate support is provided, such as open minds, communication, and confidence in the relevant medical practitioners, it will be able to contribute to continuing the plan and transforming it into action.

Motivation is a direct factor that causes action, and is largely divided into intrinsic and extrinsic motives (Deci & Ryan, 1985, 2000). Intrinsic motivation reflects one's willingness to select and solve tasks on their own, and extrinsic motivation is forcibly performed due to external pressure, compensation, etc (Deci & Ryan, 1985, 2000). Unlike extrinsic motivations, intrinsic motivations are energies that allows continuous actions (Deci & Ryan, 2000), in which if there is sufficient intrinsic motivation to voluntarily participate in and control the behavior according to the value and interest of one's own behavior, blood donation behavior can continue with a positive mind.

Conclusion

Nursing students' motivation on blood donation was positively correlated with their attitude of blood donation. The variables related to the motivation on blood donation in nursing college students were plan for blood donation.

As the factors affecting the motivation on blood donation of nursing students have been identified, subjects planning on blood donation should be encouraged to promote for an intrinsic motivation, and in order to have a positive attitude of blood donation, education programs should be developed for the support and use of health professionals.

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Yoon Jung Kim (jung_24@naver.com)

She received M.S. in Nursing from Inje University in 2011 and Ph.D. in Nursing from Inje University in 2017. She is an assistant Professor of Nursing at Changshin University. Her main research area is mental health, trauma, crisis, safety, behavior, with the most recent thesis named “Developing a Prediction Model for Post-traumatic Stress in Firefighters (2020).”, “Factors Influencing Self-Care Behaviors of Renal Dialysis Patients (2019).”