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### FACTORS RELATED TO THE INTENTION ON VOLUNTARY BLOOD DONATION IN BLOOD DONOR SERVICE (UDD) INDONESIAN RED CROSS (PMI) YOGYAKARTA

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#### ABSTRACT

**Background:** Blood transfusion is a valuable aid to handle patients with severe anemia, inherited blood disorders, severe injury, surgery, liver disease, and reduce maternal mortality. In Indonesia, about 500,000 pregnant women die each year, 28% of them due to loss of blood. Theory of planned behavior Ajzen is used to study the intention to donate blood on a regular voluntary blood donors.

**Objective:** to know the relationship between attitude, subjective norm and PBC with intention to donate blood regularly in blood donor service (UDD) Indonesian Red Cross (PMI) Yogyakarta

**Method:** This is an observational Study with cross sectional design. The Sample uses a systematic random sampling method with 276 respondents. The Measuring instruments are a questionnaire to take explanatory test and test-try questionnaire. Analysis of data used a product moment correlation and multiple linear regression.

**Results:** Respondents had positive attitude, subjective norm and PBC to the intention. Significant relationship with intention on attitude variables ( $r$ -value = 0.330,  $p$  = 0.000), subjective norm ( $r$ -value = 0.341,  $p$  = 0.000), and PBC ( $r$ -value = 0.362,  $p$  = 0.000). The role of each variable based on regression coefficients obtained by the equation to donate blood regularly =  $7.682 + 0.175$  attitude +  $0.215$  subjective norms +  $0.191$  PBC. Adjusted R Square value of 0.20 indicates a 20% change of intention is influenced by attitude, subjective norm and PBC.

**Conclusion:** There is a significant relationship between attitude, subjective norm and PBC with intention to donate blood regularly. Subjective norm has the largest positive effect (0.215) to the intention compared with PBC (0.191) and attitudes (0.175).

**Keywords:** blood donor, theory of planned behavior, attitudes, subjective norms, perceived behavior control (PBC), intention.

## INTRODUCTION

Blood transfusion is a valuable aid to handle patients with severe anemia, congenital blood disorder, severe injury, operative surgery and liver disease or other diseases which patient's body unable to produce blood or blood components as appropriate. In developing countries, blood transfusion is also necessary to handle emergencies childbirth and children malnutrition which leads to severe anemia (1). One of the causes of maternal death is complications of pregnancy that causes bleeding. In Indonesia, 500,000 pregnant women die every year, 28% of them due to loss of blood (2).

The population in the PMI Yogyakarta area is 462 752 people (3). Blood needs according Hollan (4) is 2% of the population of a region, which is 13 883 units of blood every year. Blood needs UDD PMI Yogyakarta approximately 36,000 units of blood per year and is only able to meet about 50% of the demand for each month of hospital patients. The total number of blood donors period in 2012 was 15,000 donors with 79% voluntary blood donations. Melbourne Declaration proclaimed the achievement of 100% voluntary blood donation in every country in the world by 2020 (5). Only 60% of voluntary donors who donate blood on a regular basis. WHO states that regular donors are the ones who donate blood 2 to 3 times a year and continue to contribute at least once a year (6).

Theory of planned behavior (TPB) is one theory linking attitudes and behavior which is a refinement of the theory of reasoned action, besides attitude and subjective norm, perceived behavior control adds TPB (7). In this case the researchers linking between attitude, subjective norm, PBC and intention to donate blood on a regular basis.

## METHODS

This type of research is an observational study with a cross-sectional study design. This design is used to identify the relationship between the dependent variable, namely the factor attitude, subjective norm, perceived behavioral control over the independent variables, namely the intention to donate blood regularly in voluntary blood donations. Samples were voluntary blood donations in UDD PMI Yogyakarta drawn using systematic random sampling method as much as 276 people.

Intention to donate blood on a regular basis is an interest or a desire to show the behavior of voluntary blood donations donate blood on a regular basis, at least 2 (two) times in one (1) year, measured by the total score of the questionnaire answers intentions.

Attitude is owned by the feeling aspect of blood donors who are determined directly by the belief held to conduct voluntary blood donations to donate blood regularly. How to measure: multiplying the total score with the total score of the evaluation of the confidence of each respondent.

Subjective norm is the strength of the influence of the views of people around the behavior of voluntary blood donations donate blood regularly measured by multiplying the number of referent normative beliefs scores with the total score of each respondent motivation.

PBC is a belief about whether or not the opportunity is available and required resources. This belief can be derived from the experience of the behavior in question, either having experienced themselves or others experienced (actual experience). PBC is measured by multiplying the amount of behavioral control belief scores with the total score of each respondent controls the power factor.

Measuring instruments used in this study was a questionnaire. The stage of manufacture in accordance with the instructions Ajzen is by way of doing explanatory or belief elicitation test procedure (BEP) to obtain indicators of attitudinal variables voluntary blood donations to donate blood regularly, subjective norms, and perceived behavioral control (8). The trial was conducted at 30 questionnaire respondents who were in the UDD Bantul and tested for validity and reliability.

Data analysis was performed using univariate analysis with a descriptive interpretation, bivariate analysis with statistical test product moment correlation and multivariate analysis of multiple linear regression model. Degree of confidence uses 95% and  $\alpha = 0.05$ .

## **RESULTS**

### **Description Characteristics of Respondents**

Characteristics of the 276 respondents indicated that the respondents are dominated by men (85.9%). Most respondents age is the age group 17-30 years (52.9%). The majority level of donor education is High School Graduate (46.7%). For the type of job is quite evenly, which the most are private employees (33.7%). Marital status of donors nearly equally between those who are married to not married. Household income per month in the dominance of less than 1 million (40.9%). The frequency of blood donors who have done the most respondents was 2-10 times (58%) (Fig. 1)

### **Attitude measurements**

The average score empirical attitude (2,921) is greater than the average score of the hypothetical attitude (2197). This shows that attitudes to donate blood on a regular basis is positive. The survey results revealed that the confidence of respondents in the donated blood will not think of any awards, but rather because he wanted to help others. The evaluation results obtained when the respondent not to donate blood reward boast, but a sense of excitement when donating blood.

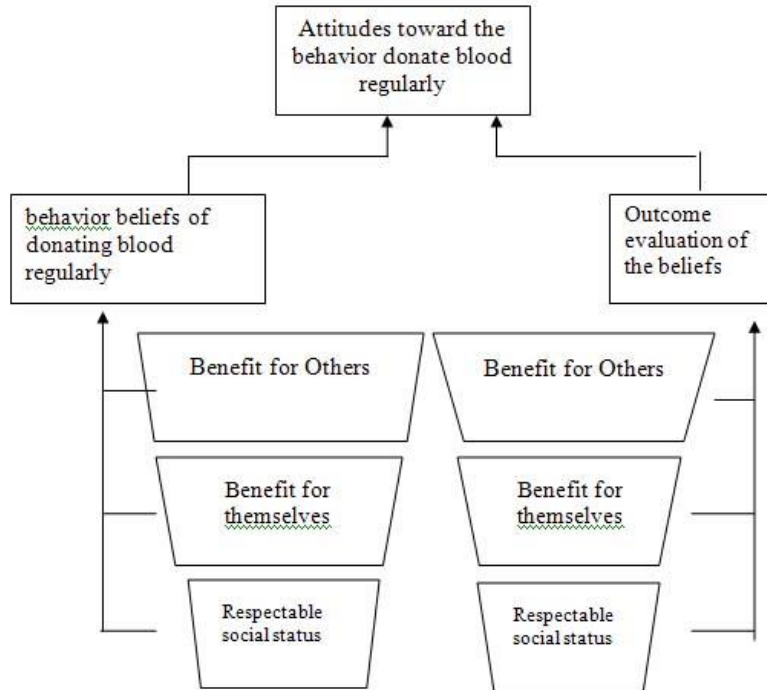


Fig. 1 Pattern of of Attitude toward the behaviour to donate blood regularly

### Subjective Norms Measurement

The average score empirical subjective norm (1.704), greater than the average score of the hypothetical subjective norm (1.573). this indicates that the subjective norm to donate blood on a regular basis is positive. The result of survey revealed that the respondents belief if the Red Cross worker will be more involved in the recall to donate blood on a regular basis of the role of a mother is probably less involved in encouraging respondents to donate blood regularly. In terms of donating blood on a regular basis, respondents are more motivated to follow the advice of the Red Cross worker of the close friends.

Fig. 2 Pattern of subjective norm to donate blood regularly

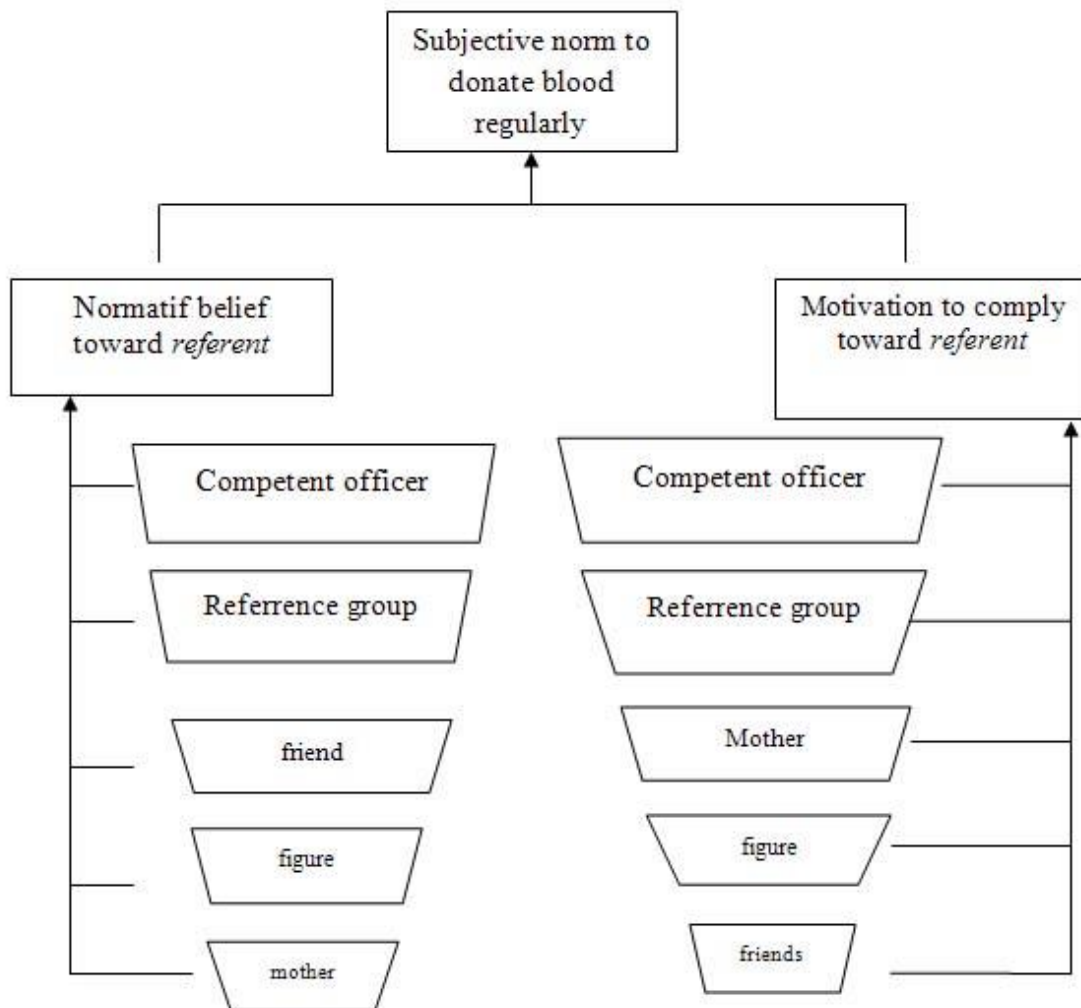


Fig. 2 Pattern of subjective norm to donate blood regularly

**Table 1. Characteristic of Respondent**

Num	Characteristics	Total	percentage (%)
1.	Sex	Male	237
		Female	39
	Total	276	100
2	Age Group	17 – 30 year	146
		31 – 40 year	72
		41 – 50 year	44
		51 – 60 year	14
	Total	276	100
3.	Level of education	Not educated	3
		Not Graduated from Elementary School	1
		Completed Elementary School	4
		Completed Junior High School	11
		Completed High School	129
		Dipl./Academy	24
		S1/S2/S3	101
		Other	3
	Total	276	100
4.	Main Job	Official	24
		Private Employees	93
		Entrepreneurs	50
		Farmer	0
		Housewife	2
		Labour	14
		Student	77
		Retired	1
		Other	15
	Total	276	100
5.	Marital Status	Not Married	132
		Married	139
		Widower / Widow	5
	Total	276	100
6.	Household Income /month	< Rp. 1 Million	113
		Rp. 1 Million – Rp. 2 Million	76
		> 2 Million	84
	Total	276	100
7.	Frequensi of Blood Donation	< 2 Times	55
		2 - 10 Times	160
		11 – 20 Times	26
		21 – 50 Times	23
		>50 Times	12
	Total	276	100

## Perceived Behavior Control (PBC) Measurement

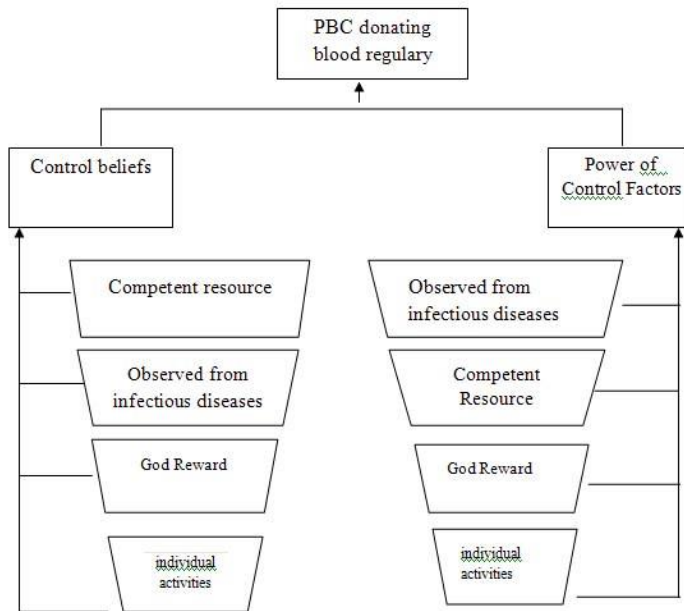


Fig.3 Pattern of PBC Donating blood regularly

The average score empirical PBC (1.234), Larger than average score hypothetical PBC (1.053). This shows that PBC donate blood on a regular basis is positive. The result of survey revealed that respondents who support the control beliefs to donate blood on a regular basis is the existence of a competent person in the field, while the distance between home and the UDD is not a barrier to donate blood regularly. Perception that donating blood will be monitored on a regular basis that there is a very strong influence of infectious diseases for the respondent to donate blood regularly. While the distance is less strong influence for respondents to donate blood regularly

## Intention Measurement

Average of intention to donate blood on a regular basis at 4.01 indicates the possibility of respondents will be able to donate blood on a regular basis.

## Statistical Analysis

The results of the statistical test “*product moment correlation*” with the degree of confidence of 95% and  $\alpha = 0.05$  indicates that a significant relationship with the intention attitude (r-value = 0.330,  $p = 0.000$ ), subjective norm and intention relationship was significant (r-value = 0.341,  $p = 0.000$ ) and a significant relationship with the intention PBC (r-value = 0.362,  $p = 0.000$ ). Value of the three variables r-value indicates a fairly close relationship. Adjusted R Square value of 0.20 indicates a 20% change of intention is influenced by attitude, subjective norm and PBC.

### **The role of each variables (Attitude, subjective norm and PBC) in Influencing Intention to Donate Blood regularly**

Based on multiple linear regression, regression coefficients obtained from each variable in the equation can be made intentions to donate blood regularly =  $7.682 + 0.175 \text{ attitude} + 0.215 \text{ Subjective Norms} + 0.191 \text{ PBC}$ . Determinant coefficient value (adjusted  $R^2$ ) = 0.200 or 20.0% means that only a change in the independent variable (intention to donate blood on a regular basis) caused by the dependent variable (attitude, subjective norm and PBC) together.

## **DISCUSSION**

### **Characteristics of Research Subjects**

Based on sex, people who donate blood is dominated by males (85.9%), this was due to the donor's criteria as a minimum weight of 45 kg and even 50 kg for 350 cc of blood collection, blood hemoglobin level of at least 12.5 g% blood pressure between 110/60 and - 160/90 mmHg can rarely be met by women. According to Ferguson (2004) there are differences between the donor's personality and behavior of men and women. For male donors associated with consciousness while in the female donor related emotional stability that shows women are more focused on the emotional aspects of donating blood.

Largest donor age group aged 17 to 30 years (52.9%) which is the age of adolescence and young adulthood. Age was significantly correlated to the intention (9). Age has a positive impact on the intention to recruit new donors, in which a young age has contributed 0.23 with  $p < 0.01$ , but not significant for old age with  $p = 0.83$ . So the responsibility of recruitment intentions affect only younger donors and not for older donors. According to Ferguson & Bibby (2002) that in the domain of personality that is associated with the intention to donate blood on a regular basis for many years was also associated with the donor experience (10).

The main job of donors, almost evenly and in line with the results of the research that the job only contributes 0.06 to the intention to donate blood regularly (9).

About frequency of blood donation majority of respondents (58%) had donated blood as much as 2-10 times. According to Ferguson & Bibby (2002) past experience related to a blood donor to donate blood affects the frequency that is reflected by the strength of the habit of blood donation behavior(10).

### **The relationship between attitude and intention to donate blood regularly in voluntary blood donations.**

Attitude has a significant relationship to the intention to donate blood regularly. The theory of *Health Belief Model* states that a person's willingness to change behavior is influenced by a belief in the perceived benefits of individuals or communities, vulnerability or believe that they are at risk, perceived seriousness and perceived barriers such as physical difficulties, social



difficulties, material and time (11). According Munandar (2008) Blood donors make a positive thinking person. This positive thinking will build one's attitude and makes people think positive (12). The results of the study Renate et al. (2006) the reason they do not want to donate blood is a lack of information about blood donation, the importance of blood donation, fear of infection and the results of the test are not eligible (13). While the psychological barriers raised by respondents was fear of blood test results, lack of information and the possibility of infection before donor during the donor. Factors that influence the formation of attitudes is a personal experience, culture, others are considered important, the mass media, institutions or educational institutions and religious institutions, as well as emotional factors within the individual (14). Attitude variable contribution in increasing the intention to donate blood on a regular basis for most small contribution 0.175 compared with the other independent variables, possible causes associated with the factors that influence the formation of attitudes, such as experience of donating blood is still slightly, based on the results of the study showed the majority of respondents are 2 - 10 times to donate blood.

### **The relationship between subjective norm and intention to donate blood on a regular basis.**

Subjective norm has a significant relationship to the intention to donate blood regularly. Previous research by Masser et al. states that the subjective norm were significant predictors (15). This study is also in line with research conducted by Merraw and Lena in which the regression coefficient on the subjective norm 0.30 at a significance level of  $<0.01$  and Giles et al. where the attitude and subjective norm contributed 8% ( $p < 0.05$ ) for intention to donate blood (16, 17).

Subjective norms are influenced by those closest references, family, friends, and motivation as well as the possibility to follow the reference. Expectations and motivations can be delivered in the form of an invitation to donate blood on a regular basis through religious lectures, community meetings or through the mass media and electronic. In addition, according to Renate et al., friends, teachers, workers at blood banks will encourage others to donate blood (13).

In this study, subjective norm variables contributed most to the intention to donate blood on a regular basis compared to other variables. Consumer behavior is influenced by the reference group, ie individuals or groups of individuals for whom the person interacts and has a direct or indirect influence on the person's behavior (18). Person's behavior is influenced by others as a model to be emulated in the circumstances experienced by the individual. A models can come from family members, peers, teachers or health professionals and each model has a specific effect on behavior (19).

The results of this study support previous studies in which subjective norms significantly related to the intention of the people who are not donors and new donors to donate blood for the first time ( $p\text{-value} < 0.001$ ) (20).

### **The relationship between Perceived Behavior Control (PBC) and intention to donate blood on a regular basis**

PBC has a significant relationship to the intention of doing regular blood donors. The reason for the community to blood donor is because it would make people pay more attention to their health. Someone who will donate blood and thereafter will always pay attention to the development of their own health (12).

This research is in line with the study in which the PBC significantly related to the intention of the person who is not a blood donor and new blood donors donate blood for the first time ( $p\text{-value} < 0.001$ ) (20).

## **The role of each variable (Attitude, Subjective Norm and PBC) in influencing the intention to donate blood on a regular basis**

Determinant coefficient (adjusted  $R^2$ ) = 0.200 or means only 20% change in the independent variable (intention to donate blood on a regular basis) caused by the dependent variable (attitude, subjective norm and PBC) together. Concern in the blood donated is more influenced by psychological factors, sociodemographic, organizational, and other factors that affect the public's willingness to donate blood (15). Meanwhile, according to the SF O'Brien et al. a better understanding of blood donors has been noted to be an important key in the behavior donate blood (21). According to Shaz et al. racial and ethnic diversity is also a factor in the recruitment of blood donors (22).

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