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Analysis of Participation of Aceh Government Employees Who Have Become Donors at UDD PMI Banda Aceh City

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Abstract— Introduction*: The Indonesian Red Cross (PMI) is responsible for finding ways to meet the need for blood in the surrounding area. One of the strategies undertaken is to provide the widest possible information regarding blood donation to the public and provide education or invitations so that people want to donate blood.* ***Objective****: This study aims to determine the factors related to the participation of Aceh Government Employees in donating blood at UDD PMI Banda Aceh City which is associated with the Health Belief Model.* ***Methodology****: This type of research is an analytic approach with a cross-sectional study method. This research was conducted in December 2022 at UDD PMI Banda Aceh City. The total sample in this study is 250 quotas, with details involving 5 SKPA and taking a sample of 50 samples per 1 SKPA. This study used a questionnaire consisting of several question items which were distributed to donors who had donated blood at UDD PMI Banda Aceh City according to the variables to be studied.* ***Results****: Research shows that value*count*= 4.947 > t table = 1.97the highest was obtained in variable X5 (gesture) thus it can be concluded that the factor that most influenced the willingness to donate blood at UDD PMI Banda Aceh City was a gesture with a value-value* 0.021≤0.05. ***Conclusion****: A positive stimulus is expected to be owned because it will direct Aceh Government employees to participate in the blood donation movement. Recommendation: It is hoped that the Aceh government will be more productive in campaigning for the importance of donating blood both to the community and within the government itself.*

Keywords— *Participation, Blood Donation, Health Belief Model*

I. INTRODUCTION

The need for blood in the world is increasing where 1 in 7 patients admitted to the hospital requires a blood transfusion. This need is to meet the immediate need to save human life immediately either for surgery or other medical rescue actions. On the other hand, there is often an imbalance between the need for blood and the stock of blood available. For example, every two seconds the population of the United States needs blood (Hope, 2016). Based on WHO data, currently, the world only has 62 countries where 100 percent of blood comes from voluntary donors, while other countries still depend on family/substitute donors or paid donors (WHO, 2020).

Likewise in Indonesia, according to WHO, the need for blood increases every year. The need for blood in Indonesia is currently around 5.1 million blood bags, while the available blood is around 4.1 million blood bags. This means that the available stock of blood bags is not sufficient. For this reason, it is necessary to increase the available bloodstock. To meet the needs of blood stocks from each region, good cooperation is needed from all health workers, the government, and the local community (Astuti, 2019).

The high need for blood in Indonesia is one of the causes of the high morbidity rate due to accidents requiring surgery, blood formation disorders such as hemophilia, thalassemia, and malignancy, and even the category of disaster-prone countries which occasionally require emergency blood transfusions. From the facts above, it becomes a challenge how to realize the availability of sufficient blood stock both in the Blood Transfusion Unit (UTD PMI) and the Hospital Blood Bank (BDRS) (UTD DKI, 2018).

Realizing the availability of sufficient blood is certainly not easy. Many important factors must be fulfilled to maintain the availability of sustainable blood. Among these factors is determined by the availability of facilities, advice, and infrastructure that can ensure the availability of adequate, safe, and quality blood. Blood services are the responsibility of the central government and local governments whose implementation is carried out by the Blood Transfusion Unit (UTD) and BDRS (Rokom, 2019).

Besides that, one of the indicators of a country's public health degree is the Maternal Mortality Rate (MMR). Preventing maternal death also requires the availability of sufficient and immediate blood. MMR is the ratio of maternal deaths during pregnancy, childbirth, and the puerperium and also includes ways of managing and caring for them which are assessed every 100,000 live births. AKI can be caused by bleeding that is not treated immediately either during pregnancy, labor, or after delivery. When compared to other Asian countries, Indonesia's MMR rate is still relatively high. Based on data and information from the Ministry of Health in 2019, the maternal mortality rate in the 1991-2015 period was recorded at 305 out of 100,000 live births (Kemenkes, 2020).

In meeting the challenge of the need for sufficient and immediate blood, the Indonesian Red Cross has a mandate as

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the front guard in fulfilling the availability of blood for the people in this country. This is based on Government Regulation number 07 of 2011 concerning blood services which stipulates that the Indonesian Red Cross is an organization that receives a direct mandate from the Government of the Republic of Indonesia regarding the implementation of blood donation activities through the Blood Transfusion Unit. Forms of public health services and is a very valuable form of help to fellow human beings (PP, 2011).

The Indonesian Red Cross (PMI) is responsible for finding ways to meet the need for blood in the surrounding area. One of the strategies undertaken is to provide the widest possible information regarding blood donation to the public and provide education or invitations so that people want to donate blood. For example, what has been done by the Blood Donor Unit (UDD) of PMI Banda Aceh City is to socialize about the benefits of blood donation either through social media such as Facebook and Instagram or provide counseling directly to certain groups of people.

For the Aceh region itself, the need for blood transfusions every day is still dominantly high while the availability of blood at UDD PMI Banda Aceh City is still very lacking so it does not meet the needs of blood every day. To overcome this gap, UDD PMI Banda Aceh City is currently working with several government agencies by picking up the ball to overcome the shortage of blood supplies (UUD PMI Banda Aceh, 2022). On the other hand, the need for blood from the people in Banda Aceh and its surroundings is increasing.

From data in recent years at UDD PMI Banda Aceh City, there has been an increase in demand for blood bags every year. In 2017 the total donations collected were 25,281 blood bags, while requests for blood reached 36,096 blood bags. In 2018, 24,920 blood bags were collected, while the request for blood was 39,082 blood bags. In 2019 the total donation was 26,641 bags of blood, while requests were 38,905 bags of blood.

Since 2020, the Government of Aceh has instructed all Heads of the Aceh Work Unit (SKPA) to motivate ASN and contract workers to donate blood at their respective institutions, to meet the blood needs at PMI Banda Aceh City. Aceh government leaders provide a routine schedule for each Aceh Government agency in turn to carry out blood donation activities at their respective agencies for each SKPA in the work area of Aceh Province (Ifdal, 2020).

A total of 48 SKPAs with a total of 46,424 employees, both ASN and non-ASN. The Aceh Privileges and Welfare Bureau has also compiled schedules for each SKPA to donate blood at UDD PMI Banda Aceh City. The purpose of preparing this schedule is to avoid donor overload on the same day so that each SKPA can donate in an orderly and directed manner.

In addition, based on the PMI UDD database for Banda Aceh City, a summary report on the activities of mobile units at ASN Government of Aceh for January and February 2022 with the following details: in January donors with new donor status produced 1,098 blood bags, while donors with those with regular donor status pocketed 1,081 blood bags, the total donation in January 2022 was 2,179 blood bags. In February, donors with the status of new donors produced 253 blood bags, donors with the status of regular donors pocketed 800 blood bags, and the total donation in February was 1,053 blood bags.

One of the important factors faced by donors is the donor's knowledge and attitude toward blood donation behavior. This begins with the public's knowledge of the ins and outs of blood donation, starting from the requirements to the effects of blood donation for both donors and recipients. Awareness of donating blood is also a sign that can trigger donor interest (Wardati & Hadi, 2019).

Several things must be considered before donating blood, such as current illness, ensuring that the body is fit and in good shape, maintaining blood quality before donating blood, avoiding consumption of fatty foods, and trying to have a sufficient intake of protein, vitamin C, and iron. In addition, drink plenty of water, it is advisable not to do strenuous physical activity or exercise, and not consume alcohol for at least 1 day before blood donation.

Blood donation has relatively good benefits for health if done routinely, namely: Can detect serious diseases, in practice, before blood donation, it is mandatory to check the condition of the blood which is also able to detect serious diseases such as HIV, syphilis, hepatitis B, hepatitis C, to malaria. For this reason, by carrying out routine blood tests, these various diseases can be detected as early as possible.

Reducing the risk of heart and blood vessel disease, regular blood donation is known to reduce blood viscosity, which is one of the causes of heart disease. Helping to lose weight, for people who are currently focusing on losing weight, regular blood donation can be one of the ways to take it. The reason blood donors can lose weight is that the average adult can burn 650 calories when donating 450 ml of blood.

As for the side effects that some donors may have, such as dizziness or lightheadedness, this is because after donating blood, the volume of blood in the body decreases, resulting in a temporary decrease in blood pressure; Bleeding in the injection area. If the blood does not clot quickly, side effects such as bleeding in the area where the needle was inserted can occur; Bruising and pain may occur when the tissue under the skin continues to bleed slightly after the donation; and Weakness or fatigue. This becomes an obstacle that can interfere with blood donors, such as fear of needles and blood, fear of side effects that can interfere with activities, and materialistic tendencies.

Based on the description above, the authors are interested in researching "Analysis of the Participation of Aceh Government Employees in Donating Blood at the PMI Blood Donor Unit in Banda Aceh City". This study uses the theory of participation and the theory of the Health Believe Model, because of that this research is still very limited and requires further review. The Health Belief Model (HBM) is a widely used research tool for human health behavior, highlighting established beliefs and proposing behavior modification interventions.

As such, its use in blood donor research can provide important information about blood donor beliefs and attitudes (Ferguson E.1996: Lu JE. 2010.: Masser et all,2011.)

From the results of this study, researchers were able to dig deeper into knowledge about the participation of Aceh Government Employees which would also have an impact as input for the UDD management of Banda Aceh City in making better decisions going forward.

II. METHOD

This type of research is an analytic approach with a cross-sectional study method. This research was conducted to find out what factors influenced the willingness of the people of Banda Aceh City, especially Aceh Government Employees, to donate blood at UDD PMI Banda Aceh City.

A. Location and Time of Research

This research was conducted in December 2022 at UDD PMI Banda Aceh City.

The sampling in this study used a quota sampling technique, bearing in mind that not all populations have the desired criteria. The total sample in this study was 250 quotas, with details involving 5 SKPAs and taking 50 samples from each SKPA.

III. RESEARCH RESULT

From table 1. The results of data processing from a perspective show that there were 133 male respondents (53.2%) and 117 female respondents (46.8%) thus there were more male respondents than female respondents at UDD PMI Banda Aceh City.

Based on age, it can be explained that the respondents aged between 20-29 years were 45 people (18%), and the respondents aged between 30-39 years were 127 people (50.8%). Furthermore, there are 78 employees aged over 39 years (31.2%). Thus respondents with an age level of 30-39 years are very dominant.

TABLE 1. Characteristics of Respondents

Characteristics		Frequency (n)	Percentage (%)
Gender	Man	133	53,2
	Woman	117	46,8
	Total	250	100
Age	20-29 Year	45	18,0
	30-39 Year	127	50,8
	>39	78	31,2
	Total	250	100
Job Status	Civil Servant	191	76,4
	Contract	59	23,6
	Total	250	100
Education			
	High School	46	18,4
	Bachelor	145	58,0
	Master	36	14,4
	Doctor	23	9,2
	Total	250	100

In accordance with employment status, most of the respondents were civil servants, namely 191 employees (76.4%) and the remaining 59 people (23.6%) with contract status. So the majority of respondents are civil servants. The results of data collection showed that there were 23 respondents (9.2%) at PMI UDD in Banda Aceh City, with the last education level being SMA. with Diploma education level (DIII) totaling 37 people (14.8%); Undergraduate (S1) consists of 145 people (58%); Respondents with postgraduate educational background were 28 people (11.2%); and there were 17 respondents with doctoral educational background (6.8%). So the majority of respondents are with undergraduate education background.

Phase I Testing

There are three criteria in the use of data analysis techniques with SmartPLS to assess the outer model, namely convergent validity, discriminant validity, and composite reliability. The results of processing the testing data in phase I will be followed by convergent validity analysis for all constructs in this study shown in Figure 1.

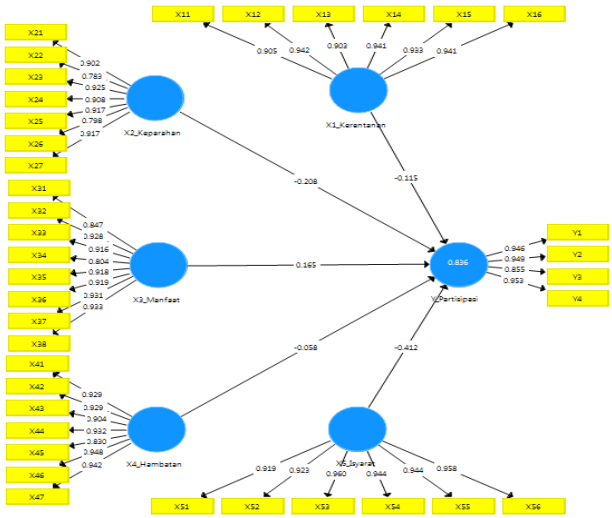

Figure 1

Analysis of Convergent Validity Run 1

The convergent validity assessment is based on the correlation between the item score/component score estimated by the PLS software. The convergent/validity assessment is based on the correlation between the item score/component estimated by the PLS software. Tests were carried out twice, the initial research stage of developing a measurement scale of a loading value of 0.5 to 0.6 was considered sufficient. In this study, a loading factor limit of 0.50 will be used. The results of the first convergent validity test can be seen in the following table

TABLE 2. Outer Loadings (Measurement Model)

No.	Statement	Variable	Loading Factor
1.	X1.1	vulnerability (X1)	0.905
2.	X1.2		0.942
3.	X1.3		0.903
4.	X1.4		0.941
5.	X1.5		0.933
6.	X1.6		0.941
7.	X2.1	Severity (X2)	0.902
8.	X2.2		0.783
9.	X2.3		0.925
10.	X2.4		0.908
11.	X2.5		0.917
12.	X2.6		0.798

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13.	X2.7		0.917
14.	X3.1	Benefit (X3)	0.847
15.	X3.2		0.928
16.	X3.3		0.916
17.	X3.4		0.804
18.	X3.5		0.918
19.	X3.6		0.919
20.	X3.7		0.931
21.	X3.8		0.933
22.	X4.1	Obstacle (X4)	0.929
23.	X4.2		0.929
24.	X4.3		0.904
25.	X4.4		0.932
26.	X4.5		0.830
27.	X4.6		0.948
28.	X4.7		0.942
29.	X5.1	Cue (X5)	0.919
30.	X5.2		0.923
31.	X5.3		0.960
32.	X5.4		0.944
33.	X5.5		0.944
34.	X5.6		0.958
35.	Y1.1	Participation (Y)	0.946
36.	Y1.2		0.949
37.	Y1.3		0.855
38.	Y1.4		0.953

Source: Data processing with PLS, 2023

The results of processing using SmartPLS can be seen in Table 2. The value of the outer model or the correlation between the construct and the variables meets convergent validity because it has a loading factor value > 0.50. In conclusion, the constructs for all variables can be used to test hypotheses.

Phase II testing

In phase II testing, the Composite Reliability and Average Variance Extracted (AVE) values will be analyzed. The construct is said to have high reliability if the value is 0.70 and the AVE is above 0.50. Table 4.4 will present the Composite Reliability and AVE values for all variables.

TABLE 3. Composite Reliabilityand Average Variance Extracted

Variable	Composite reliability	Average Variance Extracted
X1_Vulnerability	0.974	0.860
X2_Severity	0.960	0.775
X3_Benefits	0.972	0.811
X4_Obstacles	0.974	0.841
X5_Cue	0.979	0.886
Y_Participation	0.960	0.859

Source: Data processing with PLS, 2023

Based on Table 4. it can be concluded that all constructs meet the criteria of reliability, this is indicated by the value of composite reliability > 0.70 and AVE > 0.50 as the criteria recommended by Fornell and Lacker in (Ghozali, 2016).

Structural Model Testing (Inner) Model

The structural model or inner model is evaluated by looking at the percentage of variance explained, namely by looking at R2 for the dependent construct using the Stone-Geisser Q Square test and also looking at the structural path coefficients. Estimation stability was tested with t-statistics through the bootstrapping procedure.

The results of the PLSR-Squares represent the total variance of the constructs described by the model. The following presents the results of calculating the R-Squares value:

TABLE 4. R-Square value

No	Variable	R-Squares
1	Participation	0.836

Source: Data processing with Smart PLS, 2023

Based on Table 4. it can be seen that the R-square value for the blood donor participation variable is 0.836. These results indicate that the variables of susceptibility, severity, benefits, barriers, and cues can affect the blood donor participation variable by 83.6% and the remaining 16.4% is influenced by other factors.

Hypothesis test

After all the assumptions can be fulfilled, then hypothesis testing will be carried out as proposed in the previous chapter. Testing the 5 hypotheses of this study was carried out based on the significant value of a causality relationship from the SmartPLS processing results as shown in the following table.

TABLE 5. Inner Model Result

Construct	Original Sample	Sample Means	T-Statistics	Values
vulnerability→Participation	0,605	0,601	3,937	0,001
Severity→Participation	0,737	0,735	5,612	0,000
Benefit→Participation	0,802	0,801	3,873	0,005
Obstacle→Participation	0,210	0,217	1,562	0,067
Cue→Participation	0,891	0,890	6,709	0,000

Source: Data processing with PLS, 2022

IV. DISCUSSION

The Effect of Signs on the Participation of Aceh Government Employees as Blood Donors at UDD PMI Banda Aceh City

The results showed that there was a Positive and significant effect of cues on the participation of Aceh Government employees at UDD PMI Banda Aceh City, thus cues could be a factor driving the participation of Aceh Government employees at UDD PMI Banda Aceh City (p value 0.021≤0.05).

*Cues to action*is a necessary stimulus to trigger the decision-making process to accept the recommended health action. These cues can come from external or internal. Such as advice from other people, seeing family members who are sick, information from articles or mass media (Nurchasanah, 2020). The connection with blood donation is how the stimulus a person feels before deciding to donate blood.

The most dominant factors influencing the Participation of Aceh Government Employees as Blood Donors at UDD PMI Banda Aceh City

The results showed that the highest tcount value was obtained in variable X5 (signal). Thus it can be concluded that the factor that most influenced the willingness to donate blood at UDD PMI Banda Aceh City was gesture.

In the context of blood donation, community participation is vital for voluntary blood donation. This is to ensure that everyone who needs a transfusion has access to available and safe blood, all countries require free voluntary blood donors who give blood on a regular basis. (WHO, 2022). In this case, a blood donor program needs to be carried out to build an effective strategy to encourage broad and active community participation. This is critical in meeting the need for blood transfusions in peacetime as well as in times of emergency or disaster, when there is a spike in demand for blood or when the normal operation of blood services is affected (Kruse, SP, Nguyenet al., 2022).

The signal to act is closely related to the creation of public encouragement to donate blood for the common good, not only to maintain the donor's stamina but also for patients who urgently need blood transfusions. Cues to action is a stimulus needed to trigger the decision-making process to accept the recommended health action. These cues can come from external or internal. Such as advice from other people, seeing family members who are sick, information from articles or mass media (Nurchasanah, 2020).

V. Research Code of Ethics

Health research ethics committee syiah kuala university medical faculty in an effort to protect the human rights and well-being of research subjects, has carefully reviewed the research protocol entitled " *Analysis Of Participation Of Aceh Government Employees Who Have Become Donors At UDD PMI Banda Aceh City*" with protocol number *1171012P with no. Approval Number: 004/EA/FK/2023* on behalf of Syarifah Nurakmal and declared ethically feasible according to 7 (seven) 2011 WHO Standards and referring to the 2016 CIOMS guidelines.

VI. Conclusion

Based on the results of the study in this study regarding the participation of Aceh Government employees who donated blood at UDD PMI Banda Aceh City, several conclusions can be drawn as follows:

1. There is a positive and significant effect on cues on the participation of Aceh Government employees who donate blood at UDD PMI Banda Aceh City. This indicates that gestures can be a driving factor for the participation of Aceh Government employees who donate blood at UDD PMI Banda Aceh City.
2. The factor that most influenced the willingness of Aceh Government employees to donate blood at UDD PMI Banda Aceh City was the signal to act (t count = 4.947> t table = 1.97).

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