Description of Thrombopheresis Blood Donor at UDD PMI Yogyakarta City in 2021

[1]Almira Zhafirah, [2]Christina Roosarjani, [3]Betty Prasetyaswati, [4]Kunti Dewi Saraswati

[1,2,3,4]D3 Blood Bank Technology AKBARA Polytechnic Surakarta, Indonesia
Corresponding email: almirazha04@gmail.com

Abstract:
Thrombopheresis is donor apheresis to collect platelet blood components. One apheresis platelet donor bag is equivalent to 6-10 regular platelet donor bags. The study aims to determine the profile of thrombopheresis of blood donors at the Blood Donation Unit (BDU) of Indonesian Red Cross Yogyakarta City in 2021. This study uses a quantitative descriptive research design with a cross sectional approach. The population was all thrombopheresis blood donors at BDU of Indonesia Red Cross Yogyakarta City in 2021. The sample was 52 thrombopheresis. Data collection using secondary data processed using SPSS and Microsoft Excel. Univariate data analysis in the form of tables, diagrams and descriptions. Based on data there are 52 voluntary donors (100%). Based on gender, there are 43 males (82.7%) and 9 females (17.3%). Based on age there are 18-24 years old 3(5.8%), 25-44 years old 27 (51.9%), 45-64 years old 21 (40.4%) and 65 years old 1 (1.9%). Based on blood group, group A rhesus positive 7 (13.5%), group B rhesus positive 9 (17.3%), blood group O rhesus positive 36 (69.2%), blood group AB rhesus positive 0 (0%). Blood donation thrombopheresis were carried out mostly by voluntary donors, male, age 25-44 years old and blood group O Rhesus positive at Blood Donation Unit (BDU) of Indonesian Red Cross Yogyakarta city in 2021.

Keywords:
Thrombopheresis, platelets, blood donors

JEL: I10, I14, I18

INTRODUCTION

Blood donors are people who donate blood or its components to patients for the purpose of healing disease and restoring health (PP no. 7, 2011). Blood donors are a factor of blood availability. Of the 195 countries in the world, it was found that 119 countries did not have sufficient stock in blood banks to meet hospital needs. Based on the standards of the World Health Organization *(* WHO), the 119 countries lacked 102,359,632 units of blood. Some of those mentioned are countries in central, eastern and western Africa, then Asia Oceania, and southern Asia.

In 2016, out of 412 UTDs in Indonesia, 218 UTDs submitted their annual reports to the Ministry of Health. The blood donations generated from the 218 UTDs reached 3,252,077 bags of complete blood. Of these blood donations, 92% of donations were obtained from UTD PMI and 8% of donations were obtained from UTD Government/Regional Government (Infodatin, 2018)

The minimum amount of blood needed and blood production for each province obtained from 218 UTDs is only 5 provinces out of 34 provinces whose blood needs have been met, namely, DKI Jakarta, Yogyakarta, East Java, Bali and East Kalimantan. From 2016 data it was found that in Yogyakarta with a population of 3,720,912, the minimum need for blood where 2% of the population is 74,481 and blood production is 113,390 (Infodatin, 2018)

Apheresis donors are different from regular blood donors, apheresis blood donors only need certain blood components such as blood plasma, white blood cells, red blood cells and platelets. There are several types of apheresis donors, including thrombopheresis, which is an apheresis process to take platelets; (Maharani & Noviar, 2018).

Thrombopheresis is a donor apheresis to collect platelet blood components. Patients who need donor thrombopheresis are patients whose blood clotting system is disrupted due to frequent treatment with radiation, chemo therapy, or stem cell grafts, leukemia, cancer, blood disorders and dengue hemorrhagic fever (DHF). One bag of apheresis platelet donor is equivalent to 6 -10 regular platelet donor bags. An apheresis transfusion from a single donor is very good at reducing the risk of an immune system reaction during the transfusion process and also reducing the risk of bacterial infection because it only receives blood from a single donor whereas the conventional method comes from many donors (PMI DKI Jakarta, 2016).

METHODOLOGY

The method used in this study is a method that uses a quantitative descriptive research design with a *cross sectional approach*. The population used in this study was all thrombopheresis blood donors at UDD PMI Yogyakarta City in 2021 as many as 52 blood donors. The sampling technique in this study was *a total sampling* of 52 blood donors during 2021 at UDD PMI Yogyakarta City.

The variable in this study is a single variable. In this study, data collection techniques were used in the form of secondary data from the medical records of blood donor thrombopheresis UDD PMI Yogyakarta City in 2021. The instrument of this research was the notebook of blood donor thrombopheresis at UDD PMI Yogyakarta City in 2021. The data obtained from secondary data collection was then processed using statistics program. Data processing techniques in this study are: *data editing, data coding, data entry, data cleaning,* and *tabulating data.* The research data uses *univariate analysis* which is presented in the form of a frequency distribution table. This research was conducted at UDD PMI Yogyakarta City from December 2021 to July 2022.

RESULT & DISCUSSION

This research was carried out from secondary data samples taken from books records of apheresis blood donors at UDD PMI Yogyakarta City. The data is then grouped based on several categories including: type of blood donor, gender, age range, and blood type.

1. Presentation of Data by Category Type of blood donor
   Apheresis blood donors totaling 52 people were all voluntary blood donors. According to Anisya (2019), voluntary donors tend to be more responsive to calls to donate blood in emergencies, because they have shown concern for blood donations, and the risk of contracting infectious diseases through blood transfusions is lower because they are routinely examined every time they donate.

Table 1 Category of Blood Donor

Type of Donor	Frequency	Percentage (%)
Voluntary	52	100
Replacement	0	0
Total	52	100

(Source : Secondary data : Indonesian Red Cross Yogyakarta city in 2021

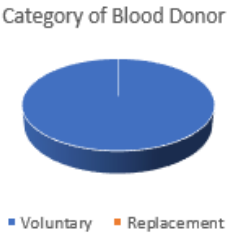

Figure 1. Category of Blood Donor

2. Presentation of Data Based on Gender Category
   The results of this study were male with a frequency of 43 and a percentage (82.7%), female with a frequency of 9 and a percentage (17.3%). The 2018 Primary Health Service stated that there were 72 male donors .5% and fewer women, namely as much as 27.5%. According to the Indonesian Ministry of Health in 2017, the number of male donors was

more than 75% of female donors, while the number of female donors was 25%. The number of female donors is less than male donors due to several factors, namely, female donors have more requirements to donate blood. Women who are menstruating, pregnant and breastfeeding are not allowed to donate blood (Alvira & Danarsih, 2016).

Table 2 Category of gender

Gender	Frequency	Percentage (%)
Male	43	82,7
Female	9	17,3
Total	52	100

(Source : Secondary data : Indonesian Red Cross Yogyakarta city in 2021

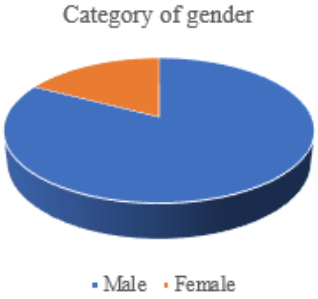

Figure 2. Category of Gender

3. Presentation of Data Based on Age Range Category

The results of this study were 17 years old with a frequency of 0 (0%), 18-24 years old with a frequency of 3 (5.8%), 25-44 years old with a frequency of 27 (51.9%), ages 45-64 years with a frequency of 21 (4 0.4%), age ≥ 65 years with a frequency of 1 (1.9%). Thrombopheresis blood donors are mostly at the age of 25-44 years with a frequency of 27 and a percentage (51.9%) followed by ages 45-64 years with a frequency of 21 and a percentage (40.4%), this is in line with the Indonesian Ministry of Health in 2017, according to the age group in Indonesia with the highest number of donors, namely at the age of 18-24 years, namely as many as 39%, then aged 25-44 years, namely as many as 30%. Then at the age of 45-59 years, namely 29%, and the least number of donors in the age category > 59 years, namely 2%. Variation in the number of donors based on age is influenced by several factors. Early adulthood has the highest number compared to other age ranges because adults are eligible to donate blood, while the blood donor requirement is 17 years old. At the age of 17-24 years, they donate blood, and older donors have donated blood repeatedly (Alvira & Danarsih, 2016) .

Table 3 Category of age group

Age Group	Frequency	Percentage (%)
17 years old	0	0
18 – 24 years old	3	5,8
25 – 44 years old	27	51,9
45 – 64 years old	21	40,4
≥ 65 years old	1	1,9
Total	52	100

(Source : Secondary data : Indonesian Red Cross Yogyakarta city in 2021

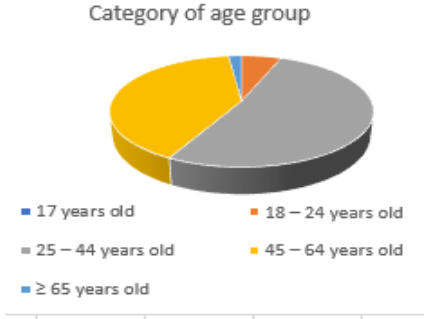

Figure 3. Category of Age Group

4. Presentation of data based on blood group
   The results showed that 7 people (13.5%) had positive blood type A Rhesus, 9 people (17.3%) had positive blood type B Rhesus, 36 people (69.2%) had positive blood type O Rhesus, blood type There is no positive AB Rhesus (0%). Thrombopheresis blood donors at UDD PMI Yogyakarta City are dominated by blood type O rhesus positive. In this study, in line with Abdullah Zainuddin et al's 2015 study, it was concluded that the most common blood type is O rhesus positive. The large number of donors with positive blood group Orhesus is because in Indonesia itself the majority of the population has blood type Orh positive, which reaches up to 40% of the population, then the population has blood group A positive rhesus and B rhesus positive which is divided respectively 20%, and the least is The population belongs to the positive AB rhesus group which only reaches 6.7% of the entire population.

Table 4 Category of Blood Type

Blood Type	**Frequency**	**Percentage (%)**
A Rh Positif	7	13,5
B Rh Positif	9	17,3
O Rh Positif	36	69,2
AB Rh Positif	0	0
Total	52	100

(Source : Secondary data : Indonesian Red Cross Yogyakarta city in 2021

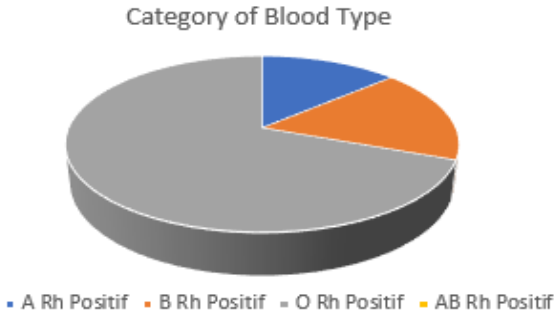

Figure 4. Category of Blood Type

CONCLUSION

Based on research what the researchers have done, it can be concluded that an overview of UDD PMI Yogyakarta City thrombopheresis blood donors in 2021 all thrombopheresis blood donors are voluntary donors where the donors are dominated by male sex. The widest range of thrombopheresis blood donors is in the age range of 25-44 years and the blood group that predominates in taking thrombopheresis is blood type O rhesus positive.

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