

Blood Type Checking as an Effort to Improve Public Knowledge and Health

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Abstrak

Pengabdian ini dilaksanakan di Desa Kungkai, Kecamatan Bangko, Kabupaten Merangin Provinsi Jambi. Permasalahan yang dihadapi adalah banyaknya warga Desa Kungkai yang tidak mengetahui golongan darah mereka (Khususnya ibu-ibu). Banyak faktor yang menyebabkan hal tersebut diantaranya, karena kurangnya informasi tentang manfaat mengetahui golongan darah. Permasalahan ini membuat masyarakat di Desa Kungkai, kesulitan mencari pendonor darah ketika ada keluarga atau tetangga yang membutuhkan pertolongan tambahan darah. Selain itu terkadang warga juga di buat susah mengisi suatu formulir isian yang menghendaki informasi golongan darah. Adapun metode yang dilaksanakan dalam kegiatan pengabdian ini adalah berupa penyuluhan mengenai golongan darah, pentingnya mengetahui golongan darah, pentingnya donor darah bagi yang membutuhkan serta pengecekan langsung golongan darah. Metode tersebut terlaksana dengan mitra ibu-ibu yang berjumlah 20 orang. Setelah kegiatan pengabdian terlaksana diperoleh hasil (1) Mitra mendapatkan pengetahuan tentang jenis-jenis golongan darah, (2) Mitra mendapat pengetahuan pentingnya donor darah bagi yang membutuhkan (3) Mitra mengetahui manfaat mengetahui jenis golongan darahnya.

Keywords: Desa Kungkai, Golongan Darah.

Abstract

This community service was conducted in Kungkai Village, Bangko District, Merangin Regency, Jambi Province. The problem faced is that many residents of Kungkai Village do not know their blood type (especially mothers). Many factors cause this, including the lack of information about the benefits of knowing blood type. This problem makes it difficult for people in Kungkai Village to find blood donors when there are family or neighbors who need additional blood. In addition, sometimes residents find it difficult to fill out a form that requires blood type information. The methods implemented in this community service activity are in the form of counseling about blood types, the importance of knowing blood types, the importance of blood donation for those in need, and direct blood type checking. This method was implemented with 20 mother partners. After the community service activity was carried out, the results obtained were (1) Partners gained knowledge about blood types, (2) Partners gained knowledge about the importance of blood donation for those in need, and (3) Partners learned the benefits of knowing their blood type.

Keywords: Kungkai Village, Blood Type.

INTRODUCTION

Blood is a liquid connective tissue consisting of several components such as blood plasma and blood cells (erythrocytes, leukocytes, platelets), (Muidah I, A, 2022). Knowing blood type is an important aspect of the health sector that is often overlooked. Blood type plays a role in the blood transfusion process and has a significant impact on the health of individuals and populations.

Blood type is a classification of blood in the human body, especially based on the

presence of agglutinogens due to differences in the types of carbohydrates and proteins on the surface of the red blood cell membrane and the presence of agglutinins in blood plasma (Susilawati & Bachtiar, N., 2018). ABO blood types are divided into 4 types, namely blood types A, B, AB, and O. The ABO blood type classification is based on the presence of agglutinin A or B on the surface of red blood cells and agglutinin Anti-A or AntiB in blood plasma (Susilawati & Bachtiar, N., 2018). In Indonesia, there are still many people who do not know their blood type. Based on a survey, it is estimated that less than 30% of the population has official records of their blood type. This also happens in Kungkai Village, Bangko District, Merangin Regency, Jambi Province. In Kungkai Village, many residents (especially mothers) do not know their blood type. This phenomenon is a problem, especially in emergencies, where this knowledge is crucial. When an accident or medical condition requires a transfusion, a delay in knowing the blood type can be fatal.

Blood type compatibility is one of the important requirements to become a donor or recipient of blood transfusion (National Institute of Health, 2020). In addition, a lack of knowledge about blood types also has an impact on public understanding of the importance of blood donation, which is very much needed to ensure the availability of sufficient bloodstock in hospitals.

Given these conditions, the blood type checking program is very important as an effort to increase public health awareness. Through this service, it is hoped that the community can find out their blood type, and understand the importance of this knowledge in the context of overall health. Education about blood types, as well as the importance of blood donation, must be an integral part of public health programs.

With increasing health awareness, knowledge about blood type can be one of the determining factors in improving the quality of life of individuals and society. Through this activity, it is hoped that the community will appreciate information about blood type more and take proactive steps to maintain their health.

IMPLEMENTATION METHOD

The implementation method implemented to partners for Blood Type Checking as an Effort to Improve Public Knowledge and Health is through counseling methods and direct blood type checking. Among others: 1. Solutions for the lack of public knowledge about blood types, the importance of knowing blood types, and the benefits of blood donation for those in need are introduced through counseling about Blood Types 2. Solutions to make the public know their blood type, blood type checking is carried out.

RESULTS AND DISCUSSION

Activity Implementer

The implementation of this community service was carried out for one month starting from preparation, survey, and implementation of activities in the field (in Kungkai Village). The implementation of activities in Kungkai Village began with an introduction (education) regarding the types of blood types, the importance of blood transfusion for those in need, and to find out the blood type, a blood type check was carried out. The number of mothers who participated in this activity was 20 people. This community service activity consists of:

- a. Introduction (Counseling) regarding types of blood types, the importance of knowing blood types, and understanding the importance of blood donation for those in need.

Blood type is a special characteristic of an individual's blood due to differences in the types of carbohydrates and proteins on the surface of the red blood cell membrane. Blood type is determined by the amount of substances (later called antigens) contained in red blood cells (Fitri, 2007). Most genes in the population are present in more than two allele forms. Blood types A, B, and O in humans are examples of multiple alleles of a single gene. There are four possible phenotypes for this character: A person's blood type may be A, B, AB, or O. These letters indicate two carbohydrates, substance A and substance B, which may be found on the surface of red blood cells. A person's blood cells may have one substance (type A or B), both (type AB), or none at all (type O).

In general, there are 2 techniques used in blood grouping, namely using the ABO and Rhesus systems. According to Rahfeld & Withheld (2020), the grouping and characteristics of the ABO blood type system consist of:

- 1) Individuals with blood type A have A agglutinin on the surface of their red blood cell membranes and produce anti-B agglutinin in their blood serum. Therefore, people with blood type A-negative can only receive blood from people with blood type A-negative or O-negative.
- 2) Individuals with blood type B have B agglutinin on the surface of their red blood cell membranes and produce anti-A agglutinin in their blood serum. Therefore, people with B-negative blood can only receive blood from people with B-negative or O-negative blood.
- 3) Individuals with blood type AB have both A and B agglutinogens on the surface of their red blood cell membranes and do not produce agglutinins in their blood serum. Thus, people with AB-positive blood type can receive blood from people with any ABO blood type and are called universal recipients. However, people with AB-positive blood type cannot donate blood except to fellow AB-positives.
- 4) Individuals with blood type O have red blood cells without agglutinogens but produce anti-A and Anti-B agglutinins. Therefore, people with O-negative blood type can donate blood to people with any ABO blood type and are called universal donors. However, people with O-negative blood type can only receive blood from fellow O-negatives.

Some of the important reasons for knowing your blood type according to Amalia & Widuri (2020) are:

- 1) It is important in the blood transfusion process for several medical conditions such as massive blood loss due to trauma, surgery, shock, and the failure of red blood cell-forming organs. Incompatible blood types between recipient and donor can cause serious and even life-threatening immunological reactions;
- 2) Important in the organ transplant process. Blood type compatibility between the recipient and the organ donor is essential for a successful transplant. If the types are incompatible, the body may reject the transplanted organ;
- 3) Important in medical identification. In an emergency or when unable to communicate verbally, information about blood type can be a guide for doctors in providing.

Blood donation has many benefits for recipients, especially those who need blood transfusions for various medical conditions. Here are some of the main benefits:

1) Saving Lives

Blood donation is essential in emergencies or major surgeries, such as accidents, risky deliveries, or complex operations. Each donation can help save up to three lives.

- 2) **Supporting the Treatment of Serious Diseases**
People undergoing treatment for serious illnesses such as cancer, severe anemia, or other blood disorders often require regular blood transfusions. Blood donation ensures that blood is always available to those in need.
- 3) **Improving Patient Condition During Recovery**
Blood transfusions can help improve the condition of patients who are tired or weak due to lack of blood, thus speeding up recovery. For example, patients with anemia or those who have just undergone major surgery may feel more energetic after a transfusion.
- 4) **Improving Quality of Life**
For some patients with chronic conditions, blood transfusions can be part of regular care that improves their quality of life. With blood donations, these patients can continue their lives better and more comfortably.
- 5) **Supporting Safe Medical Procedures**
Certain surgeries and medical procedures require blood transfusions to maintain the patient's condition. Blood donation ensures that the blood supply is safe and sufficient for these needs.

The following are some conditions that require blood transfusion (blood donation):

- 1) **Serious Accident or Injury**
People who have had a traffic accident, fallen from a height, or had a serious injury often lose a large amount of blood. A blood transfusion is needed to replace the lost blood and prevent serious complications.
- 2) **Major Operation**
During major surgical procedures, such as heart surgery, organ transplants, or cancer surgery, a patient's body can lose significant amounts of blood. Blood transfusions help maintain blood pressure and reduce the risk of shock or organ failure.
- 3) **Severe Anemia Disease**
Patients suffering from severe anemia due to iron deficiency, vitamin B12 deficiency, or genetic problems such as thalassemia or sickle cell anemia require blood transfusions to increase the number of red blood cells and increase hemoglobin levels.
- 4) **Cancer and Its Treatment**
Some types of cancer, especially leukemia and lymphoma, and treatments such as chemotherapy, can damage blood cells and reduce their numbers. Blood transfusions are often needed to maintain blood levels in the patient's body during treatment.
- 5) **Blood Clotting Disorders**
Patients with conditions such as hemophilia or other blood clotting disorders may need transfusions to replace missing clotting factors. This helps prevent bleeding that is difficult to stop.
- 6) **Immune System Disorders**
Some disorders, such as certain autoimmune diseases, or conditions in which the body destroys red blood cells faster than they are made, can cause severe anemia. Blood transfusions are needed to maintain the patient's health.
- 7) **High-Risk Delivery**
In some cases of labor, the mother may experience heavy bleeding (postpartum hemorrhage). Blood transfusion is needed to replace lost blood and keep the mother stable.
- 8) **Bone Marrow Transplant**
Patients who undergo bone marrow transplants often require blood transfusions

because the procedure destroys their bone marrow, resulting in a temporary decrease in blood production.

9) Heart and Blood Vessel Disease

Some patients who have heart disease or other blood vessel disorders may require blood transfusions to improve oxygenation and reduce the heart's workload.

10) Rare Blood Disorders

Rare conditions such as Myelodysplastic Syndrome or bone marrow aplasia cause the marrow to fail to produce enough blood cells. Transfusions help to increase normal blood levels to reduce symptoms.

Blood transfusion (blood donation) in these cases is very important to maintain health, save lives, and support patient recovery.

b. Blood type check

The second stage of this community service activity is the process of examining or checking blood types. The stages of examining or checking blood (Oktari, A., & Silvia, ND, 2016), include:

1) Blood sampling

- a) Prepare the necessary tools and materials,
- b) Clean the fingertips with 25% alcohol cotton,
- c) The tip of the finger is pricked with a blood lancet to a depth sufficient for blood to come out and pressed for a few moments,
- d) The blood that comes out of the fingertip is then collected \pm 1 ml, and
- e) Place alcohol cotton on the scar.

2) Blood type examination

- a) Blood obtained from the blood sampling process is dripped in two places on the blood type test paper,
- b) Each location where the blood sample is located is dripped with anti-A serum and anti-B serum.
- c) The mixture of blood samples with both Anti-A and Anti-B serums is stirred, and
- d) Observe the results for a few moments (\pm 1 minute).

Blood Type Checking Activities are shown in photos 1 and 2



Figure 1. Blood Collection.



Figure 2. Blood Type Checking Tool.

Of the 20 mothers who underwent the check, the blood types obtained were as shown in Table 1:

Table 1 Blood Type Check Results

No	Name	Blood type
1	Zaenap	O
2	Ipah	B
3	Pipin	B
4	Kaysa	B
5	Beautiful	AB
6	Lily	A
7	Ramaina	AB
8	Elvis	O
9	Dalina	B
10	Ria	O
11	Rose	B
12	Pia Asturi	A
13	Nana Mustika	B
14	Kartini	A
15	Anita Yanti	A
16	Andini Fitria	A
17	Meri Yanti	B
18	Meri Yani	A
19	Helicopter Laila	O
20	Hawi Marmuda	B

Evaluation of Activity Implementation

In this community service, 2 types of activities were carried out, namely, 1) Counseling activities 2) Blood type checking activities. The activities went well and were attended by 100% of activity partners. Overall, community service activities in the form of counseling and blood type checking were carried out successfully. The parameters of this success can be measured by increasing the knowledge of Kungkai Village residents, especially mothers. Blood type checking facilitates Kungkai Village residents who do not yet know their blood type to check their blood type. Through this blood type checking, it is hoped that Kungkai Village residents, especially mothers, will know the blood type that is important in the blood transfusion process for several medical conditions such as large blood loss due to trauma, surgery, shock, and dysfunction of red blood cell-forming organs. So that treatment will be easier to overcome and life expectancy will increase for Kungkai Village residents who need blood with certain medical conditions.

CONCLUSION

The implementation of this blood type checking activity helps residents to be aware of their blood type while increasing their knowledge of blood type types, the benefits of knowing blood type and the importance of blood donation (blood transfusion) for those in need.

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