

Construction of The Blood Group Database of Residents of Pangauban Village, Katapang District as An Effort to Increasing Community Alertness for Health Handling

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ABSTRACT

Database is a collection of files / tables / archives that are interconnected which are stored in electronic storage media. Database creation is the process of creating a design that will support the company's operations and goals. The use of databases in the medical field makes it possible to store data or perform and display data back quickly and easily. In the implementation of this activity, the method used in this community service is counseling and blood group examination using the slide method. A person's blood type is not just a personal identity, some people don't care about their blood type. Some don't even know what their own blood group is. Because we do a blood group check so that we know the blood group of each.o. Blood type is hereditary and very important to know because it is associated with blood transfusions, organ transplants, and hereditary diseases but there are still many peoples at Pangauban Village who do not know each blood type. The importance of knowing blood, it is necessary to have a blood type examination of peoples in Pangauban Village. The method used in this social dedication program are giving knowledge about blood type and doing blood examination of each peoples so blood type are obtained. Blood type examination was attended by 121 persons, 54 male and 67 female. Based on the results of the examination. The percentage of people who had blood type A was 29,7% or 36 persons, B blood type 26,4% or 32 persons, O blood type the lowest percentage 18,2% or 22 persons, in other side AB blood type was 25.7% or 31 persons

Keywords: Database Blood type, ABO

INTRODUCTION

One of the technologies that is currently developing rapidly is information/computer technology. Rapid progress can be seen both in terms of hardware, software, and the development of the quality of human resources (brainware). This is possible because computer technology is able to collaborate with many other fields of science.

The use of information technology today is very important, this can be seen from the application of information technology, especially in the application of electronic databases or databases that are not limited to trade or business, but also in various other fields such as education (e-Learning), social media (social networking), the banking sector (e-Banking) and also in the health sector. Various advantages are provided by information technology, especially in the application of databases, namely making the process

of data collection and dissemination of information faster and easier. The extraordinary advantages of Information Technology should be utilized by various parties to manage various institutional activities properly, planned and documented to the fullest.

With the various advantages offered by this technology, information technology, especially databases, is widely applied in various fields of human life, including in the field of community service to search community data, especially blood type, community service officers will search for community data in archives for storing community data so that it takes quite a long time. Because of this, blood group data collection in Pangauban Village, Katapang District, Bandung Regency is still lacking, because it is necessary to have a database that can help provide better community services. And based on observations of many people in Pangauban Village, Katapang District, Bandung Regency, especially Sector 7, they do not know their own blood type, therefore a blood type examination for sector 7 areas is needed.

Blood is a body fluid that is red in color and is contained in a closed circulatory system and is very important for human survival. Blood functions to enter oxygen and food materials throughout the body and take carbon dioxide and metabolism from the tissues. Knowing a person's blood type is very important to know for medical purposes, one of which is for transfusion (Anita, 2016). Blood type is very basic and important in human life, because it is hereditary (offspring) from parents. The term blood group refers to the entire blood group system which consists of antigens on red blood cells (Dian, 2020).

Blood group is a blood grouping system based on the type of antigen it has. Antigens can be carbohydrates and proteins (Nadia et al, 2010). The ABO blood group system was first discovered by Karl Landsteiner in 1900 by mixing the erythrocytes and blood serum of his staff. Landsteiner, from this experiment found 3 of the 4 types of blood groups in the ABO system, namely A, B, and O. The fourth blood group, namely AB was discovered in 1901 (Farhud et al, 2013).

One of the prevention efforts against the possibility of congenital disease, it is important to know the blood type. The most common blood grouping system is the ABO blood group system, which is divided into 4 groups, A, B, O, and AB. The division of blood groups is based on differences in agglutinogens (antigens) and agglutinins (antibodies) on the surface membrane of red blood cells. Rhesus is also very important to know because it can cause hemolysis, especially hemolytic disease in newborns which can cause death in infants. In addition, blood antigens play an important role in the success of organ transfusions and transplants, so ABO group compatibility between donor and recipient is desirable to avoid immune responses (Roman, Romero, Castro-Sánchez, & López-Martínez, 2018)

The term "database" has its origins in computer science. Although later the meaning was broader, including things outside the field of electronics, this article is about computer databases. Records similar to databases actually existed before the industrial revolution, namely in the form of ledgers, receipts and collections of business-related data.

The basic concept of a database is a collection of records, or chunks of knowledge. A database has a structured description of the types of facts stored in it: this description is called a schema. Schema describes the objects represented by a database, and the relationships between these objects. There are many ways to organize the schema, or model the structure of a database. These are known as database models or data models.

Pangauban Village is one of the main villages out of 7 villages in Ketapang District, Bandung, and based on the results of observations made in Pangauban Village, especially residents of RW03, it was found that there are still many residents who do not know their own blood type, therefore a blood type examination program is needed for Village residents. Pangauban ranging from children to adults to facilitate the health system, one of which is the blood donation process.

Blood donation is the process of taking some of the blood that we have donated and stored in a blood bank which can be used for blood transfusions at any time. Blood donation not only benefits people in need but also benefits the donor.

Based on the above, in this community service it is very necessary to carry out data collection, counseling, and blood type examination for residents in Pangauban Village, Ketapang District, Bandung Regency Sector 7, especially adults.

RESEARCH METHOD

Community service activities in the form of blood type examination which were carried out on November 13-14 2019 in Pangaubaan Village, Ketapang District, Bandung Regency, West Java. With the following steps:

1. Survey and Interview Stage

The survey stage was carried out on residents of Pangauban Village with the aim of knowing the total number of residents' data and the number of Pangauban Village residents who had not checked their blood type.

2. Preparation Stage

At this stage, the KKN Team coordinates the technical implementation of activities in the field. The service team also made preparations in the form of tools and materials used for blood type examination.

The tools and materials prepared for this community service activity are blood type cards, pen lancets, blood lancets, Anti A, B, AB, and D serum, cotton, alcohol, toothpicks, tissues, gloves and masks. At this stage coordination was also carried out with village officials to create a database using the Sublime Text and Xampp applications.

3. Implementation Stage

At this stage, the Community Service Team conducted socialization and briefing in advance to the residents of Pangauban Village before blood type examination was carried out. Furthermore, residents queued to take

blood samples according to the order. The way it works is that the finger is swabbed using a cotton swab that has been given alcohol and then pricked with a blood lancet. Furthermore, the blood that comes out first is cleaned using a tissue. The finger is pressed slightly so that the blood comes out and dripped on the blood type paper 4 times. Then each blood drop was given Anti-A, Anti-B, Anti-AB and anti-D reagents. Then a homogenization process was carried out using a toothpick to see if there was agglutination in each blood drop to find out the results of blood type and rhesus examination. After knowing the blood type of each citizen can save the blood type card.

4. Creating a Blood Type Database

After obtaining the results of the blood group examination, a blood group database is created with the following implementation:

- a. Database creation using Sublime Text and Xampp applications
- b. Input data on the results of blood type examination of citizens
- c. Install the Xampp application at the Pangauban Village office, then export the data.

RESULT AND DISCUSSION

1. Awareness of Blood Type Knowledge. Research states that regular blood donation activities can reduce the risk of heart attack by up to 1/3 times, especially in men. Some other benefits of routine blood donation based on several other studies are reducing oxidative stress in the body, reducing the incidence of insulin resistance, and increasing HDL (good cholesterol) levels. Before donating blood we must know our blood type. Therefore it is very important to know your own blood type.
2. Results of blood group mapping, blood group examination begins by taking an alcohol swab on the finger, then pricking it with a blood lancet. The first drop of blood is discarded, then the blood is dripped on blood type paper as much as 4 drops according to the circle on the paper. After that it was dripped with Anti A, B, AB and D reagents and homogenized. After about 30-60 seconds, the results of the examination can be known for blood type and rhesus. Photos of implementation activities can be seen in Figure 1.2. After carrying out blood group examinations on residents as a whole, the results of examination of various types of blood groups were obtained. Based on the blood group examination of the residents of Pangauban Village, it was found that there were all types of blood groups, namely A, B, AB and O.

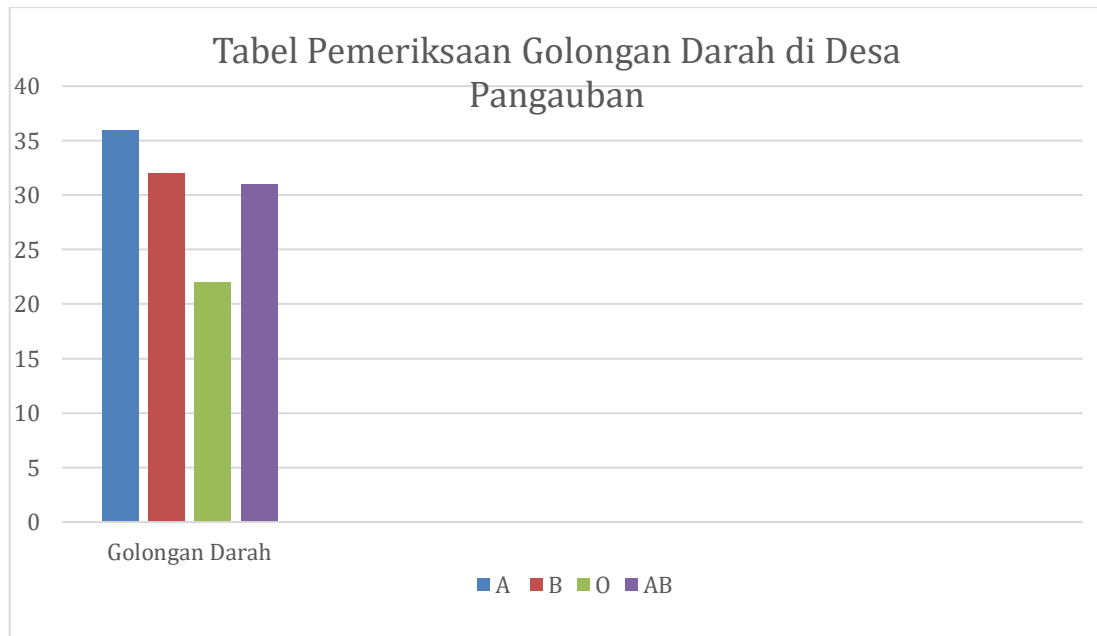
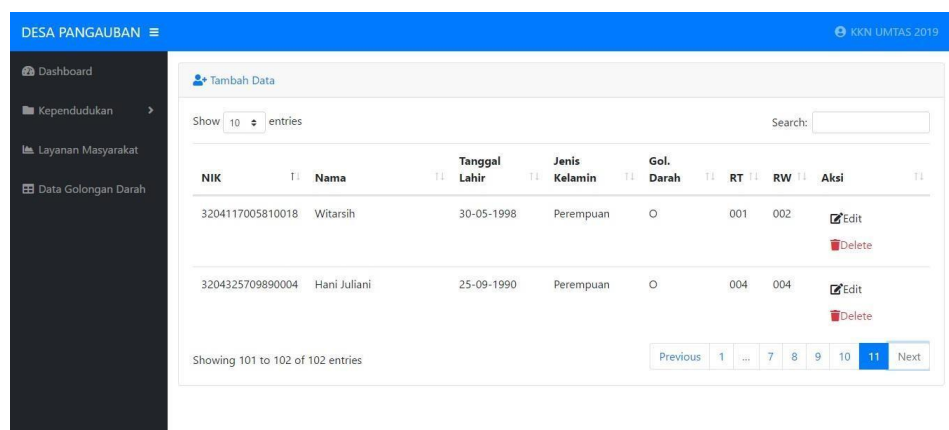


Figure 1 Blood group examination table

Based on the blood group examination results as presented in Figure 3, it can be seen that the percentage for blood group A is 29.7% or as many as 36 people, B is 26.4% or as many as 32 people and O is the lowest, namely 18.2%. or as many as 22 people, while the percentage for blood type AB is 25.7% or as many as 31 people. During the process of the activity, it was discovered that there were still many residents of Pangauban Village who were unfamiliar with blood type and many did not understand about blood type, the blood transfusion process and its relation to hereditary diseases in the family tree. The existence of this blood type examination helps residents better understand blood type and its relation to everyday life. And the data from the blood group examination results obtained have been entered into the blood group data collection system in Pangauban Village to make it easier for the residents' health system, one of which is the blood donation process.

3. Applications used in making the blood group database are as follows:

- a. Sublime Text is a commercial source code editor. It natively supports many programming languages and markup languages. Users can extend its functionality with plug-ins, usually created and maintained by the community under a free software license.
- b. XAMPP is free software, which supports many operating systems, is a compilation of several programs. Its function is as a stand-alone server, consisting of the Apache HTTP Server program, MySQL database, and a language translator written in the PHP and Perl programming languages.
- c. The benefits of creating a Pangauban Village blood group database that can be used for village administrative purposes and can be used to find the owner of the blood group needed when other residents need it for surgery, etc. And the display of the Pangauban Village blood group database can be seen in Figure 1.3.



The screenshot shows a web application interface for 'DESA PANGAUBAN'. On the left is a dark sidebar with navigation links: 'Dashboard', 'Kependudukan', 'Layanan Masyarakat', and 'Data Golongan Darah'. The main content area has a 'Tambah Data' button and a search bar. Below is a table with columns: NIK, Nama, Tanggal Lahir, Jenis Kelamin, Gol. Darah, RT, RW, and Aksi. Two entries are visible. The first entry has NIK 3204117005810018, Name Winarsih, birth date 30-05-1998, female, blood type O, RT 001, RW 002, and actions for Edit and Delete. The second entry has NIK 3204325709890004, Name Hani Juliani, birth date 25-09-1990, female, blood type O, RT 004, RW 004, and actions for Edit and Delete. At the bottom, it says 'Showing 101 to 102 of 102 entries' and has pagination controls for pages 1 through 11.

| NIK | Nama | Tanggal Lahir | Jenis Kelamin | Gol. Darah | RT | RW | Aksi |
|------------------|--------------|---------------|---------------|------------|-----|-----|----------------|
| 3204117005810018 | Winarsih | 30-05-1998 | Perempuan | O | 001 | 002 | Edit Delete |
| 3204325709890004 | Hani Juliani | 25-09-1990 | Perempuan | O | 004 | 004 | Edit Delete |

Figure 2. Display of the Pangauban Village Blood Type Database

4. The benefit of the program for the people in Pangauban Village is that the use of database technology or electronic data is currently very important for the Village administration or the Pangauban Village community itself. Information about blood group test results can be easily accessed by the public when they need blood type data at any time. The village and community only need to look for blood type data in the Xampp application storage archive at the Pangauban Village office. This can help the village to serve the community better.

CONCLUSION AND SUGGESTION

Based on community service activities for the residents of Pangauban Village, the aim of counseling and blood type examination activities in Pangauban Village is for the people of Pangauban Village to know their blood type and be aware of the importance of health. At the same time helping the village to create a database of community blood types for village administrative purposes. The results of mapping the percentage of blood groups from 121 people found that blood group A was 29.7% or as many as 36 people, B was 26.4% or as many as 32 people and O was the lowest, namely 18.2% or as many as 22 people, while the percentage for AB blood group is 25.7% or as many as 31 people. After checking the blood type, the residents still do not fully understand blood type, so there is a need for further socialization about blood type by village officials and in collaboration with local health workers.

Inputting electronic data or databases using the XAMPP Control Panel application can make it easier for village administrations to serve the community better, especially in collecting data on the blood group of the community when needed in the future.

Suggestion, the existing database is integrated or synchronized with the village information system

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