

Technology Dissemination of Blood type Checking and Health Examination by the Thematic Community Service Program (KKN) of Alma Ata University in Hamlet of Kejambon Kidul

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ABSTRACT

Health examination is an examination that focuses more on primary and secondary prevention efforts, namely detecting various health factors as a whole that can cause certain diseases in the future. Health screening is important because it can help prevent degenerative diseases. Students in the community are required to be actively involved in developing community knowledge, one of which is in the health sector. Through the Community Service Program (KKN), students carry out blood type checks and free health checks for the community in the Kejambon Kidul hamlet. The method of implementing the activities is carried out with a direct approach which is divided into two stages, namely the preparation stage and the implementation stage. The results of the activity showed that the activity was attended by 68 people, consisting of 15 men and 53 women, with the distribution of blood type A; Rh+ as many as 18 people, B; Rh+ as many as 16 people, AB; Rh+ as many as 10 people, O; Rh+ as many as 22 people and 1 person with blood type O; Rh-. The results of the blood pressure examination showed that as many as 13 people had abnormal blood pressure, 12 people with hypertension and 1 person with hypotension.

KEYWORDS

Blood type;
Health Check;
Nutrition Counseling;
Kkn;
Community Service Program



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1. Introduction

The success of health development is highly dependent on healthy behavior and the ability of the community to choose and obtain quality health services. Therefore, one of the missions of the health sector is to encourage people's independence to live healthy lives. Efforts that can be made are to increase public awareness to carry out health checks [1]. Health examination is an examination that focuses more on primary and secondary prevention efforts, namely detecting various health factors as a whole that can cause certain diseases in the future [2]. The hope of carrying out a health check is to find out various risk factors by making changes, for example changing habits that harm the body and also helping with drugs [3]. Health checks are important because they can help prevent degenerative diseases [4]. Degenerative disease is a disease caused by a decrease in organ function. Degenerative diseases that are commonly experienced include hypertension, gout, diabetes mellitus, coronary heart disease, diabetes mellitus, gout, and so on. The incidence of degenerative diseases is increasing. This disease does not only occur in the elderly aged 50 years and over, but can also be experienced at the age of 30-40 years. Therefore, preventive

measures can be taken by conducting a health check [4]. According to the Ministry of Health, periodic health checks [5] that are commonly carried out include checking and checking blood pressure, checking cholesterol, blood sugar (diabetes), lung function, and checking Weight (BB) and Height (TB).

Public awareness to carry out routine health checks to prevent disease is still very lacking [6]. People will only come to health care facilities when they are sick, and tend not to visit health facilities when they are healthy. In addition, many people prefer to use traditional medicine instead of seeing a doctor. Not only that, even there are still many people who do not know their blood type. Whereas blood type is a hereditary thing inherited by parents which is a basic and important thing in human life. Its function as a means of transportation makes blood one of the most important components in the body. So knowing the blood type, can facilitate the process of health services in certain cases.

The role of health workers and health educators is needed in increasing public awareness, both through counseling, socialization and health checks. In accordance with the Tri Dharma of Higher Education, the participation of students in the community is required to critically be able to be more actively involved in national development efforts through the learning process, scientific development carried out with real work in the environment and student service in the field of public health. This contribution can be realized through the Real Work Lecture (KKN) which is an application of the Tri Dharma of Higher Education which is carried out through blood type checking and free health checks for the community in Kejambon Kidul hamlet.

2. Method

2.1. Preparation Phase (Community and Technical)

- Students hold deliberations with the hamlet head and other village officials as well as ask for permission to carry out activities.
- Looking for partners to cooperate as health workers who carry out blood type checks and health checks.
- Collecting information related to the number of residents who do not know their blood type.
- Looking for participants (community) by distributing coupons that are used as tickets to take part in blood type checking and health checks.
- Prepare tools and materials used in checking blood types and health checks.

2.2. Implementation Stage

The activity was carried out on Monday, April 12, 2021, which took place at Joglo Kejambon Kidul. The activity starts from 08.00-12.00 WIB. The course of activities is detailed as follows:

- Participants register by showing the activity coupon and filling in the attendance list provided.
- Participants will receive a paper containing their identity and an examination result column to be filled in by the examiner.
- The examination begins with Anthropometry, namely measurement of height and weight, followed by measuring blood pressure, then blood type examination, nutritional counseling and at the end, BPJS education is given to participants who do not have BPJS Health.

3. Results and Discussion

The activities of checking blood types and health checks in the Kejambon Kidul community were attended by 68 people, consisting of 15 men and 53 women. This activity aims to determine the blood type of the community which can later be used to collect data on family card renewal. In addition, it is hoped that this blood group data collection can help health services if at any time a blood donation is needed. The activity was carried out by dividing the community into several groups at different times to avoid large crowds. The distribution is based on each RT in Kejambon Kidul hamlet.

3.1. Blood Type Check

Blood type examination begins with an alcohol swab on the finger, then pricked with a blood lancet. The first drop of blood is discarded, then the blood is dripped on the blood group paper as much as 4 drops to adjust.

After checking the blood group, the results of the examination of the types of blood groups that vary are shown in Fig. 1. The Fig. 1 explains that based on checking the blood groups of the people of Kejambon Kidul hamlet, it was found that there are all types of blood groups, namely A, B, AB and O and there is rhesus positive (Rh+) and also rhesus negative (Rh-). In the picture presented above, it can be seen that there are 18 people who have blood type A; Rh+, 16 people with blood type B; Rh+, blood group AB; Rh+ as many as 10 people, blood type O; Rh + as many as 22 people while for blood type O with circles on 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 blood type and rhesus. Rh- only 1 person.

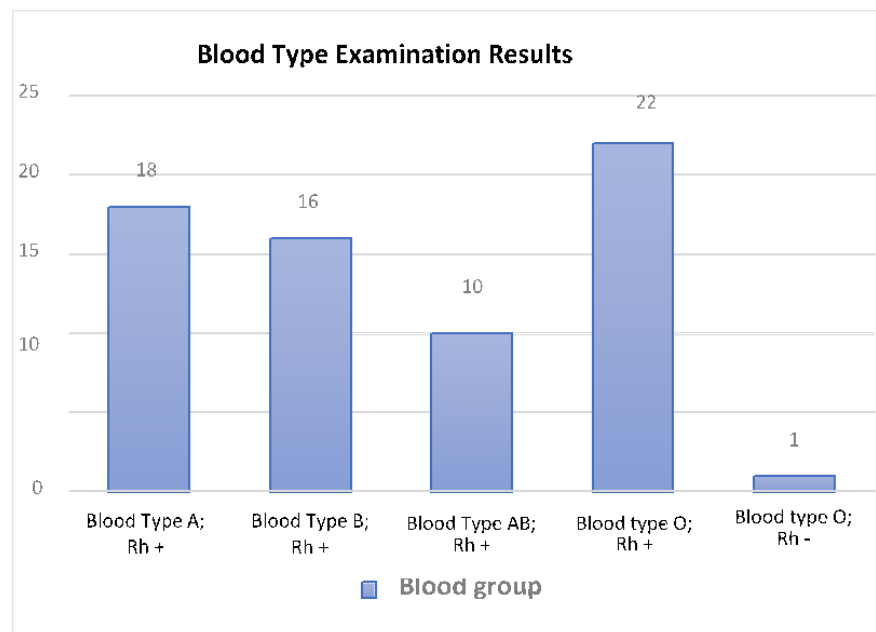


Fig. 1. Results of Blood Group Examination

Everyone's blood type is different because of the presence of antigens in the blood [7], [8]. The ABO blood group system, A, B antigens, or the absence of A or B antigens that are still present on red blood cells can determine the type of blood group of each person [9], [10]. Because the nature of blood type is strongly influenced by heredity, so that the genotype of parents is the biggest contributor in determining the presence of antigens in each person [11], [12]. Rhesus blood grouping is the second largest after the ABO system, but there are still differences, where in rhesus it is determined based on the presence of the D antigen, besides that, rhesus blood group is also immunogenic [13], [14].

Blood type is a distinctive characteristic of red blood cells which have different protein and carbohydrate content [15]. Blood type A will agglutinate or clot if anti-A reagent is added [16], [17]. Blood type B, will clot if added anti-B reagent. Type AB blood will clot when anti-AB reagent is added [18]. Type O blood will not clot when anti-A, anti-B and anti-AB reagents are added [19]. The agglutination that occurs is due to the presence of similar antigen and antibody reactions [20], [21]. If the antigen and antibody are not the same when the reagent is given, it will not cause agglutination [22]. Blood type with positive rhesus (Rh+) indicates that the blood has D antigen which when dripped with anti-D reagent (D antibody) is characterized by a positive reaction in the form of agglutination in the blood [23]. Meanwhile, people who are rhesus negative (Rh-), indicate that their blood does not have the D-antigen, so that when dripping with anti-D reagent (D antibody) it will show a negative reaction or no clotting occurs [24], [25].

3.2. Blood Pressure Check

Blood pressure is the force needed to circulate blood in the blood vessels to all tissues of the human body [26], [27]. The heart and blood vessels have a very important role to carry out this process [28], [29]. The heart works as a pump that supplies pressure to move blood and blood vessels that have elastic walls and strong resistance become the path for blood to pass [30], [31]. Blood pressure includes systolic blood pressure and diastolic blood pressure [32], [33]. Systolic blood pressure is the blood pressure when the heart contracts to pump blood [34], [35]. Diastolic blood pressure is the blood pressure when the heart is at rest [36], [37]. blood pressure classification is divided into 4 namely normal, prehypertension, stage I hypertension, and stage II hypertension [38], [39].

Hypertension is a disease that is of concern to the government. The results of the 2018 Basic Health Research (Riskesdas) stated that the prevalence of hypertension based on measurement results in people aged >18 years was 34.1%. From data from the Ministry of Health, hypertension is the first rank of PTM (Non-Communicable Diseases) diagnosed in health facilities with the number of cases reaching 185,857. Hypertension is a condition where blood pressure is found to be 140/90 mmHg or more for ages 13-50 years and blood pressure reaching 160/95 mmHg, for ages over 50 years [40]. Hypertension is one of the main risk factors that cause heart attacks and strokes that attack most of the world's population.

The results of the blood pressure examination of the Kejambon Kidul community showed that as many as 13 people had abnormal blood pressure, as shown in Table 1. The table explains that there are 9 participants categorized as stage 1 hypertension, 3 people with stage 2 hypertension and 1 participant with low blood pressure. (hypotension). Elderly people (elderly) who dominate suffer from hypertension. Of the 12 participants who were categorized as hypertension, 9 of them were elderly participants.

Table 1. Blood Pressure Examination Results

Category Blood Pressure Total Percentage	Total	Percentage
Hypotension	1	1%
Normal	55	81%
Stage 1 hypertension	9	13%
Stage 2 hypertension	3	4%

Age can be a risk factor for hypertension. Age affects all aspects of life, including physical changes in the cardiovascular system. Normal activities of daily living can predispose to and worsen cardiovascular dysfunction, because normal changes such as aging, heredity, and lifestyle can lead to serious disorders, including high blood pressure. With increasing age, the flexibility of large blood vessels decreases and systolic blood pressure increases until the age of 70 years, while diastolic blood pressure increases until the age of 50-60 years, then continues or tends to decrease.

3.2. Nutrition Counseling

The success of a nation's development is determined by quality Human Resources (HR), namely human resources who have strong physical, strong mentality, excellent health, and are intelligent. This cannot be separated from the nutritional status or health of each individual. One of the indicators used is the Human Development Index (HDI) with three main determining factors, namely the level of education, health and the economy.

Nutrition counseling is one way to better understand the health problems that occur in a person. Patients perform nutritional counseling in order to identify health problems that occur in themselves, understand the causes and ways of controlling and assist patients in solving problems so that changes in attitudes and behavior occur in order to implement a diet that is in accordance with the patient's condition. the consultation intervention is expected to increase knowledge. Because nutrition consultation is essentially a series of learning processes to develop a positive understanding and attitude towards food so that sufferers can form and have good eating habits in their daily lives.

The results of the Kejambon Kidul community blood pressure examination showed that as many as 13 people had abnormal blood pressure. There were 9 participants who were categorized as stage 1 hypertension, 3 people with stage 2 hypertension and 1 participant with low blood pressure (hypotension). Elderly people (elderly) who dominate suffer from hypertension. Of the 12 participants who were categorized as hypertension, 9 of them were elderly participants.

Patients who are known to suffer from hypertension based on the results of blood pressure measurements are given nutritional counseling. Counseling is in the form of providing education related to dietary regulation using the DASH diet method as shown in Fig. 2. The DASH (Dietary Approach to Stop Hypertension) diet is a vegetable and fruit diet that contains lots of dietary fiber (30 grams/day) and minerals (potassium, magnesium and calcium) while limiting salt intake. The DASH diet is designed to follow heart health maintenance guidelines to limit saturated fat and cholesterol, and limit sodium, which can increase blood pressure. The DASH diet not only controls blood pressure to reach within the normal or controlled range, but also plays a role in preventing hypertension.



Fig. 2. DASH Diet Menu

4. Conclusion

Real Lecture Work (KKN) is a tangible form of students' active role in community development, one of which is in the health sector. This participation is realized through blood type checking activities and free health checks for the community in the Kejambon Kidul hamlet. The results of the blood group examination of 68 participants obtained that the most blood type was blood type O; Rh+ with 22 people, meanwhile 18 people have blood type A; Rh+, 16 people with blood type B; Rh+ , blood group AB; Rh + as many as 10 people, while for blood type O with Rh- only 1 person. Everyone's blood type is different because the red blood cells contain different proteins and carbohydrates.

Health checks carried out in the form of blood pressure checks. The results of the examination showed that as many as 13 people had abnormal blood pressure. There were 9 participants who were categorized as stage 1 hypertension, 3 people with stage 2 hypertension and 1 participant with low blood pressure (hypotension). Elderly people (elderly) who dominate suffer from hypertension, due to increasing age the flexibility of large blood vessels decreases. Participants with hypertension were then given nutritional counseling in the form of education related to dietary regulation based on the DASH (Dietary Approach to Stop Hypertension) method, namely increasing consumption of vegetables and fruit and limiting sodium consumption.

Based on the results of the examination, it is hoped that the public will be able to find out their blood type as early as possible. Knowledge of each person's blood type will facilitate the process of health services such as blood transfusions. The public is also expected to carry out regular health checks in order to detect or prevent disease as early as possible. The public stigma that thinks that health care facilities are only accessed when sick must be changed. Because people should visit health facilities regularly for regular health checks without getting sick first.

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Author Contribution

All authors contributed equally to the main contributor to this paper. All authors have read and agreed to the published version of the manuscript.

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Conflict of Interest

The authors declare no conflict of interest.

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