

Screening blood glucose and blood pressure to prevent the risk of diabetes mellitus and hypertension

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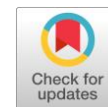
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ABSTRACT

During the covid 19 pandemic, Gamping Lor did not hold activities that risk causing crowds in order to avoid the transmission of covid 19, thus they didn't do any activity. This condition will worsen public health conditions, which are vulnerable to exposure to NCD (Non-Communicable Diseases). In Indonesia, the number of people with DM (Diabetes mellitus) is estimated to increase by 2 times in 2030. The purpose of this service is to conduct screening for early detection of diabetes and hypertension in vulnerable communities of Gamping Lor. The method used is counseling and examination practice. The results of the activity there were 68 participants consisting of women 89.7% men 11.3%. with a picture of the following conditions; Hypertension, 35.3% prehypertension 27.3%, Normal 29.4%, Low 7.3%; hyperglycemia 15.2%, hypoglycemia, 4.5%, normal 83.3%; BMI status; Thin 11.11%, ideal, 22.22%, Overweight, 20.6% Obesity level 1 , 34.9%; obesity grade 2; 11.11%. Participants with high hypertension conditions, but more normal sugar levels. Participants overweight to obesity are higher than the ideal and thin. Conclusion : Service I I went well according to plan. More participants were affected by pre and hypertension, but normoglycose, on the other hand, experienced the most overweight and obesity. So it is important to do a diet and fat burning program according to age.



KEYWORDS

Glucose screening
NCD
Vulnerable



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1. Introduction

During the covid 19 pandemic, Gamping Lor did not hold activities that risk crowds in order to avoid the transmission of covid 19. Some routine activities such as Posyandu for children and the elderly are only necessary, as well as activities at dasawisma RT, RW, and PKK. However, in mid-December 2021, Gamping Lor Hamlet began to open congregational activities by being willing to accept UMY KKN students to carry out activities in Gamping Lor. One of the activities carried out is a health check. The Gamping lor community consists of 8 RTs with the following population; .Rt 1 : 198, Rt 2 : 154, Rt 3 : 155, Rt 4 : 201 Rt 5 : 193 Rt 6 : 177 Rt 7 : 249 and Rt 8 : 216. The majority of the people are over 45 years old. Most people just stay at home so they don't do much activity, so it is feared that it will worsen public health conditions, which are vulnerable to exposure to NCDs (Non-Communicable Diseases). NCD is still ranked as the number 1 cause of death in the world, approximately 63% of the total death contribution [1], [2]. The main NCDs are diabetes mellitus, cardiovascular cancer and chronic respiratory disease [3], [4], [5]. In Indonesia, the number of people with DM (Diabetes mellitus) is estimated to increase 2-fold in 2030 [6]–[8]. Diabetes is a disease that cannot be cured and requires lifelong care that costs a lot of money. If there is a fatal complication such as heart disease or stroke, the amount of costs that must be incurred will increase several times. This does not include the losses incurred due to loss of productivity and decreased quality of life of patients [9]. Prediabetes or hyperglycemia is a condition where blood glucose levels are elevated above the normal range and below the diagnostic threshold for diabetes and

impaired glucose tolerance occurs after two hours of consuming 75 grams of oral glucose or impaired fasting glucose [10], [11].

Individuals with prediabetes are at high risk of developing type 2 diabetes [12]–[14]. The risk factors for prediabetes are the same as for type 2 diabetes, namely being overweight, advanced age, poor diet, lack of physical activity, smoking, and family history [15]. However, not every person with prediabetes continues to develop type 2 diabetes. Primary prevention needs to be done to support an effective lifestyle and prevent the development of prediabetes to diabetes [16]. In tackling the challenges caused by diabetes, it is necessary to carry out promotive and preventive efforts. One of the preventive ways that can be done is to screen DM in healthy people or those who have not been exposed to DM before. Diabetes screening in individuals with no signs or symptoms of hyperglycemia and no further clinical symptoms can lead to earlier identification and more intensive treatment, thereby potentially improving health [17], [18]. Screening of subjects at high risk for type 2 DM through a cost-effective, non-invasive, and reliable procedure is essential [19], [20]. This is mainly to raise awareness and change the behavior and lifestyle of their group. Considering that many of the people in Gamping Lor hamlet are 45 years old and over and almost 1.5 years of activities at home, information about their own health is not well facilitated. Likewise, the awareness to take care of one's own health has not become commonplace. What is especially important is that blood pressure and blood sugar checks (body mass index) have not become the needs of vulnerable people and have not been realized by other family members. 1.2 Problems Based on the situation analysis, the following problems are formulated: 1. The Gamping Lor community has been at home for almost 1.5 years with limited physical activity so that they are less physically active 2. The Gamping Lor community has not gotten used to simple health checks such as checking blood pressure, blood sugar, index body mass. 3. The Gam[ping Lor community does not yet have a reminder for family health checks.

2. Method

The implementation of this service used the lecture method for counseling and the stage of checking blood sugar, blood pressure, BMI. Analysis of the data in the tabulation by displaying the average data \pm sd. The series of activities carried out are (preparation and licensing, socialization of activities, counseling on DM and Hypertension and Preposttest and examination of body mass index, blood sugar, and blood pressure)

3. Results and Discussion

3.1. Socialization

The socialization of the activities was carried out concurrently with the socialization of KKN 252. The socialization was intended to introduce residents to the existence of health education and examination activities in Gamping Lor. So that it can help inform other communities to be able to take advantage of these opportunities well. The event as show in Fig. 1.



Fig. 1. The event

3.2. Counseling on the Prevention of Diabetes Mellitus and Hypertension

The counseling activity was carried out on Sunday 27 February 2022 at Joglo Gamping Lor show as Fig. 2 and Fig. 3. Participants who participated consisted of cadres, PKK activists and posyandu administrators. Before and after counseling, pre and post tests were carried out.



Fig. 2. Pre and post test



Fig. 3. The counseling

In this counseling, flyers were also given containing knowledge about Diabetes and Hypertension show as Fig. 4.



Fig. 4. DM and hypertension flyer distributed to participants

3.3. Results of Pre and Post Test



Fig. 5. Profile pre and post test

The results of the pre and post tests are as illustrated in Fig. 5. The average pre-test is 88.2875 while the post-test average is 96.1875, so that the increase in knowledge is 8.2%. The initial knowledge of the participants was good considering that the participants were active in posyandu activities which were widely exposed to knowledge about diabetes and hypertension. However, this instructor continues to increase the knowledge of participants who don't know much about DM and hypertension.

3.4. Health Check

The implementation of blood sugar and hypertension screening is carried out on Sundays from 8 to 13. The implementation follows the health protocol, with registration, temperature checks, height, weight and waist circumference checks, blood pressure checks and blood sugar checks. There are two lines of the inspection sequence. The total number of participants was 68 participants. So one line checks 34 participants. The description of the examination is as follows: Blood description show as Table 1.

Table 1. Blood Description

Blood glucose		Frequency
Low	5	7.3%
Normal	20	29.4 %
Pre-hypertension	19	27.29
Hypertension	24	35.3 %

There were 19 participants who were included in the initial hypertension, 24 people with hypertension, and 10 people exposed to hyperglycemia. Glose and BMI description show as Table 2 and Table 3.

Table 2. Glucose description

Glucose		Frequency
Low	3	4.5 %
Normal	53	83.3 %
Cautious	0	0%
High	10	15.2 %
	66	

Table 3. BMI description

BMI Status		
Thin	7	11.11%
Ideal	14	22.22 %
Overweight	13	20.6%
OB1	22	34.9 %
OB2	7	11.11 %

Participants with a BMI of overweight and obesity were 42 people, more than half of the participants were at risk of being overweight. Gender and Age show in Table 4 and Table 5.

Table 4. Gender

Gender		
Male	7	10.3 %
Female	61	89.7 %

Table 5. Age

Age		
Adult	40-60	28
Elderly	>60	39

Based on this description, it shows that elderly participants in Gamping lor are at risk of hypertension, hyperglycemia and overweight. it seems that covid 19 which causes participants to stay at home become the triggers.

3.5. Grants

The grants given were in the form of DM and Hypertension Flyers for the community, as a reminder to avoid worse risks. Counseling materials, blood pressure checkers, blood sugar sticks, weight and height measurements, easy touch tools. Submission of goods grants to Pak Dukuh Gamping Lor show in Fig. 6.



Fig. 6. Submission of goods grants to Pak Dukuh Gamping Lor

4. Conclusion

This service has been carried out well and smoothly according to plan. There are quite a lot of elderly people in Gamping Lor who are at risk of hypertension and overweight, while the condition of many blood sugar levels is normal.

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Declarations

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