



## **EARLY DETECTION OF HYPERCHOLESTEROLEMIA IN THE ELDERLY**

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### **ABSTRACT**

Hypercholesterolemia is total cholesterol in blood with high cholesterol levels that is 200 mg/dl. Hypercholesterolemia is one of the indicators of atherosclerosis in blood vessels and become a top priority in overcoming health problems in developed and developing countries. The cause of hypercholesterolemia is the intake of unhealthy food, such as overeating fat, low consumption of fruits and vegetables, obesity, low physical activity, hypertension, stress, smoking and alcohol use.

### **INTRODUCTION**

The current health system is regulated in the National Health Insurance. Health services are not only about treatment or curative, but must include holistic and comprehensive. The number of elderly people based on data in 2018 has doubled since a period of 50 years (1971-2018). The number of elderly is around 24.49 million people. This phenomenon will have a significant impact if the lives of the elderly can be independent, qualified and not as a burden on society. (Akbar *et al.*, 2020)

Hypercholesterolemia is very common in the elderly population because of its relationship with the environment and genetic and comorbid factors. Most of cardiovascular disease and death are also

common in this population. (Félix-Redondo, Grau and Fernández-Bergés, 2013) Hypercholesterolemia is total cholesterol in blood with high cholesterol levels that is 200 mg/dl. Hypercholesterolemia is one of the indicators of atherosclerosis in blood vessels and become a top priority in overcoming health problems in developed and developing countries. The cause of hypercholesterolemia is the intake of unhealthy food, such as overeating fat, low consumption of fruits and vegetables, obesity, low physical activity, hypertension, stress, smoking and alcohol use. (Lestari and D. M. Utari, 2017)

Early detection, especially for the detection of hypercholesterolemia in the elderly carried out periodically aiming to

improve the quality of life of the elderly, especially in preventing the occurrence of cardiovascular diseases as well as providing support so that the elderly can live independently realized

## METHOD

Implementation of activities for early detection of hypercholesterolemia in the elderly. This activity starts from:

### 2.1 Field survey

Exploring partner problems, at this stage it was found that the specific optimization of the elderly for preventive and promotive activities have not been carried out. This initial survey also aims to: to know how many elderly patients, and the promotive and preventive forms that been carried out in the elderly. Activities that are promotive and preventive in the form of counseling carried out according to an existing theme.



**Figure 1. Opening of the counseling event**

### 2.2. Counseling Session

Provide counseling about cardiovascular diseases in the elderly delivered by doctors.

After counseling then followed by a discussion in the form of questions and answers with experts



**Figure 2 Counseling on cardiovascular diseases**

### 1.3 Laboratory examination session

Based on the NCEP (national cholesterol Education program) consists of

hypercholesterolaemia which is total cholesterol (TC) > 200 mg/dL



**Figure 3. Laboratory examination**

### 2.4 Evaluation session

In the elderly, the results regarding early detection are explained, if the elderly accompanied by the family, then the explanation is also conveyed to the family. In this session, according to with the aim of conducting early detection of

hypercholesterolemia in the elderly. Result of In counseling, it was found that elderly people aged 60-70 years old 30 people (68%), elderly aged 71-80 years old 10 people (23%), and elderly >80 years old 4 people (9%). Of all those present generally show independence.

## RESULTS AND DISCUSSION

This service is done for elderly people aged 60 years and over in GuguakDistrict 50 Cities, West Sumatra Indonesia. This activity was attended by clinical doctors, nurses, analysts, the elderly who are around the puskesmasin GuguakDistrict 50 Cities, West Sumatra Indonesia

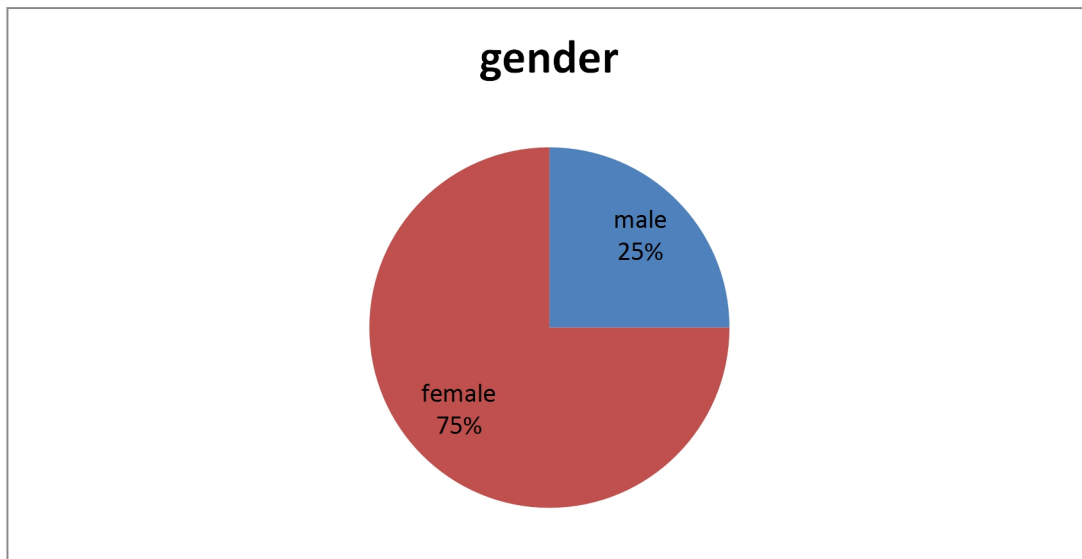
The outputs produced from this series of services are:

1. Medical and paramedical personnel in the clinic have the opportunity to carry out detectionearly.

2. The service participants, namely the elderly, recognize the symptoms of hypercholesterolemia,so it can be handled earlier

By involving the clinical component in conducting early detection, it is hoped that this method can be repeated for promotive and preventive programs in first-level health services. Comprehensive services are not only about treatment or curative, but also include promotive and preventive services, curative and rehabilitative.

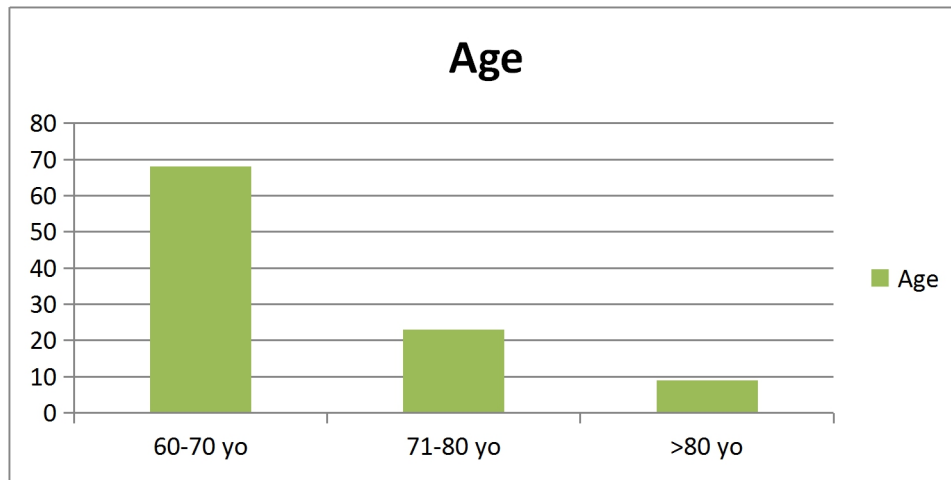
This service was attended by 44 elderly people consisting of 75% female and 25% male (Diagram 1).



**Diagram 1. Proportion of elderly based on Gender**

The proportion of elderly based on age, divided into 3 groups, namely elderly aged 60-70 years, elderly aged 71-80 years and elderly over the age of 80 years. The results

showed thatelderly people aged 60-70 years old 30 people (68%), elderly aged 71-80 years old 10 people (23%), and elderly >80 years old 4 people (9%). (Diagram 2)



**Diagram 1. Proportion of elderly based on Age**

Total cholesterol levels in the elderly obtained by the elderly with hypercholesterolemia as many as 30 people

(68%) and with normal cholesterol levels as many as 14 people (32%).

**Table 1. Distribution of Total Cholesterol Level in Elderly**

Total Cholesterol Level	n	%
High	30	68
Normal	14	32
Total	44	100

This research was conducted in kabupaten 50 kota, kecamatanGuguak with the research subjects are the elderly. KecamatanGuguak with danguang-danguang capital is an area that is famous for processed foods, namely meat satay danguang-danguang. Therefore, the characteristics of our study population may have contributed to the high prevalence of CVD risk factors are obesity.(Anggraini and Adelin, 2020).

Dyslipidemia is an increase in cholesterol, triglycerides, or both, and a decrease in HDL levels. Dyslipidemia is

associated with diabetes because of the presence of insulin resistance. The state of insulin resistance causes glucose cannot be used by the body to be used as energy so that the breakdown of fat that will later lead to dyslipidemia(Anggraini and Adelin, 2020)(Gaziano *et al.*, 2010)

The increase number of elderly and dependence of elderly on productive population in accordance with the data in the statistical agency, can be followed up by increasing the role of the elderly, so they can be personally independent.(Akbar *et al.*, 2020)





## CONCLUSION

Based on the results of the activities that have been carried out, conclusions can be drawn as follows:

1. Screening activities can become a regular activity that can be carried out in first-level health facilities
2. Awareness of medical and paramedical personnel to increase their role by advancing promotive and preventive efforts in the elderly
3. Awareness that the increasing number of elderly needs to be balanced with programs from government and the active participation of the entire community.

Therefore, the elderly need to get attention and support from the environment and community/family in order to be able to cope with the changes that occur, in addition to changes in physical and more vulnerable mental state. BPJS Health services are certainly expected to be able to help the community.

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