

## Risk Factors of Cardiovascular Disease in Elderly in Guguak Kabupaten 50 Kota, West Sumatera, Indonesia

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### ABSTRACT

**Introduction:** Cardiovascular disease (CVD) is a major cause of death and disability worldwide. The most stringent primary CVD screening guidelines in developed countries use absolute CVD risk scores or coronary heart disease, such as Framingham or SCORE (Systematic Coronary Risk Evaluation) there are two types of CVD risk factors namely modifiable risk factors and unmodified risk factors. **The aim** of the current study is to determine the profile of potentially modifiable and unmodified cardiovascular risk factors. **Method:** This research consists of 41 elderly people which aged  $\geq 60$  years in Guguak, Kabupaten 50 Kota, West Sumatera, Indonesia. The data taken is modifiable risk factors consisting of diseases related risk factors including blood pressure categories, lipid profile, central obesity, body mass index and lifestyle related risk factors such as smoking habit. We also take data of unmodified risk factors such as age and gender. **The result:** this study consists of 41 elderly people which aged  $\geq 60$  years in Guguak, Kabupaten 50 Kota, West Sumatera, Indonesia. The mean age of elderly were  $68 \pm 7.64861$  years old that consisting of 29.3% men and 70.7% women, 34% of elderly with hypertension, the elderly with hypercholesterolemia 71%, hypertriglyceridemia 41%, and the elderly women with low HDL-C levels were 53% the elderly men with low HDL-C levels were 92%. **Conclusion:** There are two types of risk factors CVD, modifiable risk factors and nonmodifiable risk factors. The modifiable risk factors consisting of diseases related risk factors including blood pressure categories, lipid profile, central obesity, body mass index and lifestyle related risk factors such as smoking habit.

**Keywords:** Cardiovascular diseases, elderly, guguak 50 Kota, West Sumatera

## INTRODUCTION

Cardiovascular disease (CVD) is a major cause of death and disability worldwide. Estimated, two thirds (63%) of premature death at age  $15 \pm 69$  years, with the main cause of CVD. It has been predicted that by 2030, more than 23.3 million people will die each year due to CVD(1). Early detection and treatment of at-risk individuals is an important strategy in preventing or delaying the occurrence of CVD, thereby reducing the health and economic burden. The most stringent primary CVD screening guidelines in developed countries use absolute CVD risk scores or coronary heart disease, such as Framingham or SCORE (Systematic Coronary Risk Evaluation)(2)(3) there are two types of CVD risk factors namely modifiable risk factors and unmodified risk factors(2)(4). The aim of the current study is to determine the profil of potentially modifiable and unmodified cardiovascular risk factors

## METHODS

This research consists of 41 elderly people which aged  $\geq 60$  years in Guguk, Kabupaten 50 Kota, West Sumatera, Indonesia. The data taken is modifiable risk factors consisting of diseases related risk factors including blood pressure categories, lipid profile, central obesity, body mass index and lifestyle related risk factors such as smoking habit. We also take data of unmodified risk factors such as age and gender.

Risk factors of CVD including age, gender, blood pressure categories which consists of normotension, prehypertension, and hypertension, lipid profile to get a description of dyslipidemia consisting of hypercholesterolemia, hypertriglyceride and decreased LDL levels, central obesity with waist circumference  $\geq 95$  cm, body mass

index consists of normal BMI, overweight and obese and smoking habit.

## RESULT AND DISCUSSION

This research consists of 41 elderly people which aged  $\geq 60$  years in Guguk, Kabupaten 50 Kota, West Sumatera, Indonesia. The results of this study, the mean age of elderly were  $68 \pm 7.64861$  years old that consisting of 29.3% men and 70.7% women.

### a. Blood Pressure Categories

The blood pressure categories in this study were normotension if systolic blood pressure was  $<120$  mmHg and diastolic blood pressure  $<80$  mmHg, hypertension when systolic blood pressure  $\geq 140$  mmHg and diastolic blood pressure  $\geq 90$  and if prehypertension were excluded from both criterias. In this study, elderly with normotension were 22%, prehypertension were 44% and 34% of elderly with hypertension.

### b. Dyslipidemia

Dyslipidemia based on the NCEP (national cholesterol Education program) consists of hypercholesterolemia which is total cholesterol (TC) $> 200$  mg/dL, hypertriglyceridemia if triglyceride (TG) levels  $>150$  mg/dL and low HDL-C (high density lipoprotein cholesterol) which levels of HDL-C  $<65$  mg/dL for men and  $<55$  mg/dL for women.

In this study it was found that elderly with hypercholesterolemia 71% and with normal cholesterol levels 29%. The elderly with hypertriglyceridemia 41%, and the elderly with normal triglyceride levels 59%. The elderly women with low HDL-C levels were 53%, and elderly men with low HDL-C levels were 92% (Table 1).

**Table 1. Total Cholesterol Level, Triglyseride Level And HDL-C Level In Elderly**

Variable	Mean	Lowest Level	Highest Level
T C(mg/dL)	221±46.11	148	366
T G(mg/dL)	164±139.89	43	887
HDL-C (mg/dL)	56±15.15	26	95

## c. Central obesity

Central obesity in this study was found to have a waist circumference  $\geq 95$  cm. The results of this study found 48.9% of elderly with central obesity. The mean waist circumference in elderly  $93.6 \pm 9.984$  cm with 77 cm minimum value and maximum value of 110 cm (Table 2).

**Table 2. Central Obesity In Elderly**

Variable	Mean $\pm$ SD	Minimum Value	Maksimal Value
Waist Circumference (cm)	93.6 $\pm$ 9.984	77	110

## d. Body Mass Index

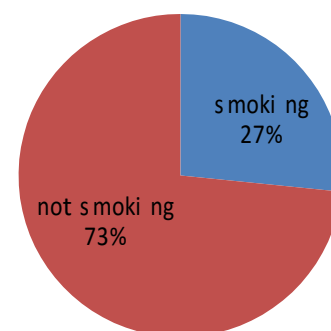
Normal BMI if BMI  $< 25$  kg/m<sup>2</sup>, overweight if BMI  $25 \leq$  BMI  $< 30$  kg/m<sup>2</sup> and obese if BMI  $\geq 30$  kg/m<sup>2</sup>. In this study, found the elderly with normal BMI were 49%, the elderly with overweight were 36.6% and the elderly with obese were 14.4% (Table 3).

**Table 3 Body Mass Index in Elderly**

Variable	Mean	Minimum Value	Maksimal Value
BMI	25 $\pm$ 5.14	14.86	42.86

## e. Smoking Habit

In the study found elderly with smoking habits 27% and elderly didnot smoke 73% (figure 1).

**Figure 1. Smoking Habits in Elderly****CONCLUSION**

There are two types of risk factors CVD, modifiable risk factors and nonmodifiable risk factors. The modifiable risk factors consisting of diseases related risk factors including blood pressure categories, lipid profile, central obesity, body mass index and lifestyle related risk factors such as smoking habit

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