

## Correlation between Metabolic Syndrome and Anthropometric Measurement in Elderly

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### ABSTRACT

#### Background:

Elderly is the final stage of development that will be passed by humans. Increasing age for elderly will bring various compensations in terms of decreased function and increase in the prevalence of degenerative diseases in elderly. The prevalence of degenerative diseases is often associated with the metabolic syndrome. Metabolic syndrome consists of a set of symptoms including an increase in waist circumference, increased blood triglyceride levels, decreased levels of high-density lipoprotein (HDL)-blood cholesterol, high blood pressure, and glucose intolerance. Waist circumference can be determined by taking anthropometric measurements. Anthropometry is one method that can be used as a screening for obesity. Some anthropometric indices include Body Mass Index (BMI) and Waist to Hip Ratio (RLPP). Anthropometric measurements can be used as an initial screening to determine the symptoms of the metabolic syndrome which is expected to reduce the incidence of diseases caused by the metabolic syndrome. However, the correlation between metabolic syndrome and anthropometric measurement in elderly still needs to be studied further. Based on these problems, researchers intend to know the correlation between metabolic syndrome and anthropometric measurement for elderly.

#### Aim:

The research aims to determine the correlation between: (1) metabolic syndrome with BMI, (2) metabolic syndrome with waist circumference, (3) metabolic syndrome with hip circumference, and (4) metabolic syndrome with waist-to-hip ratio.

#### Method:

This research was analytical observational study conducted with cross sectional approach. Sampling was done by consecutive sampling technique. This research plan was carried out in Nogotirto village hall, Nogotirto Village, Gamping Sleman District. Instruments used to collect data were scales to measure body weight, stadiometer to measure height, BMI, waist circumference and hip circumference measured by using measuring tape. Metabolic syndrome includes measurements of blood pressure, abdominal circumference, triglycerides, HDL and fasting blood glucose. Data analysis techniques include: normality test and correlation test.

#### Research result:

Research results indicate that there is significant correlation between metabolic syndrome and anthropometric status. The significance value of  $p < 0.05$  indicates that there is significant correlation between metabolic syndrome and waist circumference, hip circumference, RLPP and BMI. From the data, it is found that all research variables including waist circumference, hip circumference, RLPP and BMI have  $p$  value = 0.000 ( $p < 0.05$ ). The strength of coefficient parameters is seen in the correlation coefficient, showing a positive correlation in all research variables with medium correlation strength on the waist circumference variable ( $r = 0.476$ ), weak correlation strength on the hip circumference variable ( $r = 0.331$ ), medium correlation strength on the RLPP variable ( $r = 0.416$ ) and weak correlation strength on the BMI variable ( $r = 0.363$ ).

Kata Kunci: *metabolic syndrome, anthropometry, BMI, RLPP, elderly.*