

The Correlation between metabolic syndrome and physical fitness in elderly

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ABSTRACT

Background:

Elderly is the final stage of development that humans will go through. Increasing age in the elderly will bring various compensation in terms of decreased function and an increase in the prevalence of degenerative diseases in the elderly. The prevalence of degenerative diseases is often associated with the metabolic syndrome. Metabolic syndrome consists of a set of symptoms including increased waist circumference, increased blood triglyceride levels, decreased levels of high density lipoprotein (HDL) - blood cholesterol, high blood pressure, and glucose intolerance. One of the ways to prevent metabolic syndrome is physical activity. Physical activity has great benefits because it can improve the elements of physical fitness, namely the heart and respiratory systems, joint flexibility, balance and muscle strength. Physical activity can also prevent metabolic syndrome. But the relationship between metabolic syndrome and physical fitness still needs further investigation. Based on these concerns, we wanted to know the relationship between metabolic syndrome and fitness in the elderly.

Destination:

This study aims to determine the relationship between: (1) metabolic syndrome with cardiorespiratory fitness, (2) metabolic syndrome with flexibility, (3) metabolic syndrome with strength, and (4) metabolic syndrome with balance in the elderly.

Method:

This research is an analytic observational study conducted with a cross sectional approach. Sampling was done by consecutive sampling technique. The research plan was carried out at the Nogotirto village hall, Nogotirto Village, Gamping Sleman District. The instruments used to collect data were a 6 minute walk, sit and reach, hand grip dynamometer, leg and back dynamometer, standing on one leg. Metabolic syndrome includes measurement of blood pressure, abdominal circumference, triglycerides, HDL and fasting blood glucose. Data analysis techniques include: normality test and correlation test.

Research result:

The results of the study showed that as many as 32 elderly had metabolic syndrome. Seventy out of 118 people had complete data for correlation analysis. There is a correlation between metabolic syndrome and leg muscle strength ($r = -0.295$, $p = 0.013$) and balance ($r = -0.282$, $p = 0.018$), but there is no correlation between metabolic syndrome and hand grip strength. back muscle strength ($p = 0.405$), cardiorespiratory fitness ($p = 0.103$) and flexibility ($p = 0.488$). It can be concluded that the elderly who are diagnosed with metabolic syndrome tend to experience weakened leg strength and decreased balance. Therefore, the elderly need to do physical activity to improve leg muscle strength and balance.

Kata Kunci: *metabolic syndrome, fitness, the elderly.*