

## **ABSTRACT**

**Zafira Nandya Affrianti, 2023.** Relationship of Macro and Micronutrient Intake with the Incidence of Metabolic Syndrome in Obese Adolescents. Thesis. Bachelor of Applied Nutrition and Dietetics Study Program, Department of Nutrition, Health Polytechnic of the Ministry of Health Malang. (Under the guidance of: **Fifi Luthfiyah, SST., M. Kes, and Rany Adelina, S.Gz., MS**).

Adolescence which is the transition of children into adults causes adolescents to differ from children and adults both in lifestyle and habits as well as metabolic changes in the body. With lifestyle changes cause adolescents to be prone to the onset of various diseases and one of them is obesity. The problem of metabolic syndrome (SM) among adolescents is beginning to show alarming numbers along with the increase in the incidence of obesity in adolescents aged 15-18 years. The criteria for diagnosis that a person has metabolic syndrome consist of abdominal obesity, hypertriglycerides, HDL cholesterol, hypertension, and fasting blood glucose levels. The intake of macro and micronutrients consisting of energy, protein, fat, carbohydrates, Vitamin C, Vitamin A, and sodium affects the incidence of obesity and also the cause of metabolic syndrome, because the type of food chosen by Ramaja is currently more inclined to western influences such as fast food / fast food. The purpose of this study was to determine the relationship between macro and micronutrient intake with the incidence of metabolic syndrome in obese adolescents. This study used an analytical observational design, where researchers would make observations without providing intervention to respondents using non-parametric chi square tests and spearman correlation tests. The number of subjects of this study was 22 people at SMAN 1 Singosari, Malang Regency and this research was conducted for one month. Respondents' intake data were collected using Food Recall technique 2x24 hours with interview method. Data on abdominal circumference, triglycerides, fasting blood glucose, blood pressure, and HDL levels were carried out consecutively for 4 weeks with the help of medical personnel. The results showed that overall a significant value of  $< 0.05$  was obtained, so it was stated that there was a relationship between the intake of macro and micronutrients with the incidence of metabolic syndrome with the criteria of abdominal obesity components, hypertension, HDL cholesterol, triglycerides, and fasting blood glucose in obese adolescents.

**Keywords** : intake of macro and micronutrients, metabolic syndrome, obese adolescents.