

**THE EFFECT OF RED DRAGON FRUIT AND LEMON JUICE
SUPPLEMENTATION ON TOTAL CHOLESTEROL LEVELS AMONG OBESE
STUDENTS IN THE HEALTH DEPARTMENT OF JEMBER STATE POLYTECHNIC**

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ABSTRACT

Excessive fat accumulation in obese individuals can disrupt lipid metabolism, thereby increasing the risk of cardiovascular disease. Nonpharmacological management through the consumption of functional foods rich in antioxidants and fiber is a promising strategy. Red dragon fruit and lemon is known to contain flavonoids, fiber, vitamin C, and betacyanin, which have the potential to help improve lipid profiles. However, research on the administration of red dragon fruit juice to obese college students remains limited. Therefore, this study aims to analyze the effect of red dragon fruit and lemon juice administration on total cholesterol levels in obese students in the Health Department at Jember State Polytechnic. A quasi-experimental method with a pretest-posttest design and a control group was used. The subjects were selected using Non Random Sampling Assidental g, consisting of 26 obese students from the Health Department at Jember State Polytechnic, divided into two groups: a control group and a treatment group. The control group was given 220 ml of mineral water every morning for 21 days, while the treatment group was given 130 ml of red dragon fruit juice every morning for 21 days. Total cholesterol levels were measured by laboratory staff who collected fasting blood samples from the antecubital vein. The results showed no significant difference in total cholesterol levels between the control and treatment groups in either the pretest ($p=0.303$) or the posttest ($p=0.210$). However, there was a significant change before and after the intervention in the treatment group ($p=0.034$). Analysis of the difference in changes in total cholesterol levels also showed a significant difference between the two groups ($p=0.000$). The treatment group experienced an average decrease in total cholesterol levels of 13.31 mg/dL, while the control group experienced an average increase of 14.38 mg/dL. The conclusion of this study is that the administration of red dragon fruit juice has an effect on total cholesterol levels in obese students in the Health Department at Jember State Polytechnic in the treatment group.

Keywords: cholesterol, flavonoid, obesity, red dragon fruit juice