

The Difference of Nutritional Intake In smoker and Non-smoker Adolescents

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Abstract The prevalence of adolescent smoker is increasing as they started smoke at an earlier age. Nicotine is one of substances in cigarettes that might decrease the appetite than decrease nutritional intake. The aim of this study to compare the nutritional intake in smoker and non smoker in adolescent. This analytical cross-sectional study was conducted during February to April 2016 on male adolescent aged 10-19 years in elementary and high school in Jatinangor, West Java, Indonesia. The single interviews 24-hours recall was performed to assess the nutritional intake. The 159 subjects were selected by random sampling, consisted of 78 smokers and 81 non-smokers. The mean difference of carbohydrate, protein and fat intake were analyzed using the t-test with a p-value <0.05 considered as significant. There were significant differences between smoker and non-smoker adolescent in the carbohydrate intake (131.52 g; 162.45 g), protein (36.10 g; 42.54 g) and fat (36.59 g; 40.98 g). It was concluded that there were significant differences in carbohydrate, protein and fat intakes in smokers and in non-smokers adolescents.

Keywords: adolescent, carbohydrate, fat, protein, smoker

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1. Introduction

Adolescence is a period in which a person experiences rapid change in several things, such as body size, body shape, physiology, psychology and social functions. Adolescence is a transitional period between childhood to adulthood. At this time, adolescents begin to act as adults by smoking [1]. Based on the World Health Organization, there are more than 150 million adolescent smokers worldwide, and it continues to increase [2]. Indonesian survey data show the prevalence of smokers is 34.7% meanwhile in West Java is 37.7% [3]. Sixty nine % of Indonesian adolescents are active smokers [4]. By the time the prevalence increased 13-15 years old male Indonesian adolescent smokers during the period of 3 years (2006-2009), which is from 24.5% to 41% [5,6]. The initial smoking age of 10-14 years by approximately 80% during the period of 9 years (2001- 2010). [3] The cigarettes contain 2000-4000 substances. Nicotine is one of the substances in cigarettes that can cause dependence effects [7]. The average content of nicotine in a cigarette is about 10 mg [2]. Nicotine can also increase energy expenditure and decrease appetite that can lose weight [8,9].

Smokers have lower weight than nonsmokers [10]. Stice et al said that the increase of body mass index (BMI) of people who smoke was lower than non-smokers [11]. Dana et al stated that smokers had less healthy eating

habits than nonsmokers [12]. There is no consistent evidence that smokers consume less food than non-smokers [10]. This study aimed to compare the nutritional intake between smoker and non smoker in adolescents.

2. Methods

This was an analytical observational cross-sectional study. The subjects were 10-19 years old male students. The subjects consisted of 5th-6th grade elementary school students (10-11 years old), 7th-9th grade junior high school (11-15 years old), and 10th-12th grade senior high school students (15-19 years old) selected randomly from 6 schools in Jatinangor, West Java, Indonesia. The study was conducted in February to April 2016. The inclusion criteria of this study were 10-19 years old male adolescent who were willing to be involved in this study. The exclusion criteria were adolescents who had a history of chronic diseases such as tuberculosis, chronic diarrhea, diabetes mellitus, chronic liver disease, chronic kidney disease, hypothyroidism or hyperthyroidism. The Ethics Committee of Medical Faculty, Universitas Padjadjaran, approved this study. Permission of primary data collection was requested to the Head of the Regional Development Agency for the Sumedang District and to the principal of each school.

The study process was done in two stages. The first stage was to identify the adolescents' smoking status