Whether Beet Juice and Red Dragon Fruit Juice Increase the Haemoglobin Level in Young People?

Endang Wahyuningsih\textsuperscript{1*}, Endang Sawitri\textsuperscript{1}, Choiril Hana\textsuperscript{1}

\textsuperscript{1}Sekolah Tinggi Ilmu Kesehatan Muhammadiyah Klaten, Klaten 57419, Indonesia
*Corresponding author. Email: endangwahyuningsih@stikesmukla.ac.id

ABSTRACT
Anemia has been one of the social health problems which arises and is spread around the world especially in developing countries and poor countries. Anemia affects a large number of people mainly young males and females. Women and young females need twice as much iron as men and young males do. WHO states that 25 – 40\% of young people suffer from anemia and it strikes more than 57\% of young females in Indonesia. The red beet is rich in various vitamin B content: vitamin B1, B2, B3 and B6. The dragon fruit also contains iron, vitamin B1, vitamin B2, vitamin B and vitamin C. Our research purpose is to find out the comparison of beet juice and dragon fruit juice consumption to increasing haemoglobin level in 11-15-year-old young people. The research design is Quasi-Experiment using pre-test-post-test with control group design. The technique sampling, we use is purposive sampling. We use a juice extractor and haem meter to study the samples for seven days. There were 32 samples in our research. Our research used paired t-test and independent t-test. The result showed that beet p value was 0.515 > 0.05 and dragon fruit was 0.516 > 0.05 and that the consumption of beet juice and dragon fruit juice did not affect the haemoglobin level in 11-15-year-old young females. Average haemoglobin level given beet p value was 0.026 < 0.05 and average haemoglobin level given dragon fruit p value was 0.033 < 0.05.

Keywords: beet juice, red dragon fruit juice, haemoglobin

1. INTRODUCTION
Young people still show growth especially their reproductive system. During menstrual period, females need enough iron. Protein, iron and vitamin C intakes are related to menstrual cycle [1]. Dysmenorrhea is an annoying problem for some women, especially for those who do intense activities like young people. One of the factors which affect dysmenorrhea is the Hb level is less than 12gr/\% (anemia) which often strikes young people. The main factor which contributes to less haemoglobin level is bleeding during menstrual period and insufficient nutrients intake. Iron and proteins young people take will reduce dysmenorrhea and anemia [2]. Young females face a high risk of suffering from anemia because they have a menstrual period every month. They can increase their haemoglobin level by take vitamin C and tablet Fe [3]. Those who suffer from anemia lack Fe, Zn, Cu, folic acid and B6 intake [4]. Lack vitamin A and C will also affect their haemoglobin level [5]. Vegetable protein also plays an important role in anemia development in WUS [6]. The young females’ haemoglobin level who live in mountainous regions is different from that of who live in coastal regions [7]. Children who suffer from GAKI (a condition in which there is a deficiency of iodine) in Indonesia are related to anemia. Eating habit will affect the size of anthropometry including weight, height and abdominal circumference of young people’s [8]. Eating habit in which there is a deficiency of nutrient will affect the abnormality of anthropometry size which results in anemia [9]. Young people’s unhealthy life style such as consuming fast food, drinking soda, drinking unhealthy energy drinks will result in health problems and chronic diseases which are not contagious so that it increases mortality and morbidity [10]. In assosa zone, anemia occurs in socio-demographic conditions and food intake [11]. According to the data from Muhammad Al Kaustar Junior High School, there are 235 teenagers aged 13-16. Based on the information from student department, a clinic in Kartosuro has a counselling program to measure the students’ weight and height every three month. Apart from that, there has never been anemia skimming as an early detection of anemia in young people conducted by the school and clinic in Kartosuro. This will affect their concentration and achievements.

2. METHOD
Our research design used quasi experimental with research design being used was non-equivalent pre and post-test control group design. We separated the group into two groups. The first group was given beet juice and the second was given red dragon fruit juice. We checked the young females’ haemoglobin level. After we collected the data, we took the respondents based on their criteria. The result from the skimming of their haemoglobin level showed that there were 32 people with abnormal haemoglobin level. After we collected the data, the respondents’ data was grouped into 2 groups. In the first group, 16 respondents were given beet juice, and in the second group 16 respondents were given red dragon fruit juice. They were beet juice without water.
The consumption of beet juice and dragon fruit juice did not affect the haemoglobin level in young females because of several factors such as having breakfast habit, social economic status, and gender. Research juice is an effective method to promote the consumption of fruits and vegetables as well as a balanced diet which offer to reduce high risks of various diseases.
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