Identification Of Hematocrit Values In Teenagers Active Coffee Drinkers

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Identification Of Hematocrit Values In Teenagers Active Coffee Drinkers

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ABSTRACT
Coffee consumption can cause abnormal hematocrit values because coffee contains tannins and filates which cause it can reduce the absorption of iron in the body. This type of research is descriptive qualitative. The purpose of this study was to determine the hematocrit value in active teenagers who drink coffee. A total of 30 samples were obtained by Purposivve Random Sampling in teenagers actively drinking coffee in warkop or coffe shop. The examination of hematocrit values is carried out by the hematocrit POCT method. Based on the results of the examination of hematocrit values in coffee-drinking adolescents, all respondents were male (100%) with the consumption of the type of coffee that was most indemand by adolescents, namely black coffee as many as 7 respondents (23%) normal hematocrit valuesand 17 respondents (58%) abnormal. At the frequency of drinking coffee 2 to 3 perday 11 respondents (37%) were normal and 10 respondents (33%) were abnormal, at a frequency of 4 to 5 perday as many as 9 respondents (30%) were abnormal, indicating that the higher the frequency of drinking coffee that adolescents drink, it can affect hematocrit values, so adolescents should be able to pay attention and reduce coffee consumption beyond a reasonable limit.
Keywords: Hematocritvalue, teenagers, coffee

BACKGROUND
The number of cases of hemoglobin levels in adolescents decreases due to nutritional intake and lifestyle. Hemoglobin levels are directly proportional to the hematocrit values in the blood. The change in the increase or decrease in hemoglobin levels greatly affects the hematocrit and erythrocyte values. Hemoglobin levels are influenced by various individual food and beverage intakes, one of which is coffee. Coffee contains tannins and filates which cause it can reduce the absorption of iron in the body. With an excess amount of coffee consumption leads to a decrease in hemoglobin levels. Hematocrit values are

highly dependent on the number of erythrocytes because erythrocytes constitute the largest cell mass in the blood (Nuradi and Jangga, 2020)

According to research conducted by adolescent coffee drinkers, it was found that from 30 samples taken in Kupang City, 19 people (63%) coffee drinkers had abnormal hemoglobin levels. This is also comparable to a study conducted in Tasikmalaya City stating hemoglobin levels in black coffee addicted men as many as 20 samples, 40% showed low hemoglobin levels while 5% of the study high hemoglobin levels And studies conducted on rats stated that there was a significant relationship between coffee caffeine and animal hemoglobin levels with a p value of 0.0 While in a study conducted on 5 baristas in Majalengka Regency (17.9%) baristas with high coffee consumption, suffer from anemia Other and Zurimi, 2021(Vishnu, 2018)(Tohidin, 2021)(Assegaf, Tseng and Mamlukah, 2021)

Types of coffee sold in various instant coffee shops and different brands, all coffee shops sell packaged coffee that contains sugar in it. Coffee contains tannins and fillates that cause inhibition of iron absorbed in the body. The caffeine content in some types of coffee is 95-165 mg at 237 ml. The caffeine content found in black coffee is higher than other instant types, namely 126 to 446 mg in 237 ml of a cup of black coffee served by brewing. Most people who suffer from anemia are caused by iron deficiency as much as 60-79 percent, one of the factors for the occurrence of anemia is the cause of coffee So that with an excess amount of caffeine in the body can cause hemoglobin in the blood will also tend to be unstable and will result in a lack of red blood cells in the body. The recommended coffee drink is 200 mg per day or the equivalent of one to two cups of coffee. Caffeine in large amounts more than recommended is toxic to the body. Especially teenagers who consume coffee in excess. (Elfariyanti, Silviana and Santika, 2020)According to the WHO (World Health Organization) adolescence is childhood at the age of 14 to 24 years. According to the United Nations (United Nations) adolescent age is in the period of 15 to 24 years (Lain and Zurimi, 2021). It is known that coffee can increase the energy of the extrapenditer and lipotic activity in the body so that long-term consumption can lose weight and can inhibit the growth and development of adolescents. With a lack of red blood cells in the body, resulting in a decrease in hematocrit values. If there is a decrease in hematocrit, it will cause various diseases, namely anemia, then nutritional deficiencies, namely iron, vitamin B12 and folic acid, then also disorders in the bone marrow (Tohidin, 2021)

Currently, drinking coffee has become a *life style* among Indonesian teenagers, when drinking coffee there are things that must be limited, coffee consumption has limits and doses that are in accordance with the needs of the body. If drinking coffee excessively is not in accordance with the recommended, it will have an impact on short-term and long-term effects due to excessive coffee consumption. Each individual should limit and reduce coffee consumption so as not to have an impact on health.

Based on the above background, it can be used as a basis for conducting research with the title of identifying hematocrit values in active adolescents.

RESEARCH METHODS

This type of research is a qualitative descriptive study with the aim of determining the hematocrit value in active adolescents of coffee drinkers. Population is a generalization area consisting of objects and subjects that have certain qualities and characteristics set by researchers to be studied and drawn conclusions by researchers. The population in this

study was all active adolescents who drink coffee at coffee shops in DukuhSutorejo Village, Mulyorejo, Surabaya.Samples are a number of examples of populations that have the same characteristics as the population and are directly targeted by research.The sample in this study was 30 active adolescents who drank coffee at a coffee shop in DukuhSuterejo Village, Mulyorejo, Surabaya.

1. Inclusion Criteria The inclusion criteria in this study are:
   a. Teenagers who are 12 to 24 years old and unmarried
   b. Teenagers who drink coffee every day more than 2 cups every day
2. Exclusion criteria
   a. Married teenagers
   b. Teenagers who drink less than 2 cups of coffee every day

The sampling technique in this study was carried out by *Purposivve Random Sampling*, which is a way of sampling by conducting interviews on active adolescent coffee drinkers in accordance with the objectives of the study carried out in DukuhSutorejo Village, Surabaya. This research was carried out from February to June 2022. A single variable in this study was the hematocrit value in active adolescent coffee drinkers.

Data Collection Techniques

Research instruments

This study, using primary data collection techniques was carried out through interviews, while hematocrit examination was carried out using the fora6 *plus*tool with the POCT (*Point Of Care Testing)* method.

Principle

Capillary blood is absorbed into the test strip then flows into the test area and mixes with the reagent to start the measurement process.

Method

The POCT method is carried out through an examination using *a strip test*.

Tools and Materials

1. Capillary Blood

2. Hematocrit Strip

3. Alcohol cotton

4. Grief

5. Lanceolate

6. Inspection tools and hematocrit strips

Data collection procedure

1. Interview
      This study, using interviews and filling out questionnaire sheets so that they can obtain data from respondents directly. For the location chosen, namely Warkop or *coffe shop* in Surabaya.

2. Data retrieval procedure
   a. Determination of sampling is carried out by the following procedure:
      1. Determine the location of the coffee shop to be sampled.

2. Make observations and look for active adolescents at the site that fit the criteria.
3. Conducting interviews with respondents and recording the results of interviews
4. Conduct sampling which will then be recorded the results of hematocrit values.

b. Hematocrit examination procedure
1. preparation: install a lanceolate on the pen tool. Set it to the desired depth.
2. Wipe the middle finger using an alcohol cotton swab and wait for it to dry.
3. Install the strip, take the strip from the hematocrit tube then attached to the slot where the strip is, turn the tool on.
4. Check the calibration code number, compare the calibration code number that appears on the layer with the one listed saved should be the same.
5. Take a blood sampling using a pen.
6. Put blood into the padded strip until it is fully charged
7. Wait for the check process and then the results will appear on the layer
8. Read the results of the examination

Normal values

Women: 36-44 %

Men : 41-50 %

Data Analysis Techniques

The data obtained from the study of hematocrit values (Hct) obtained, then analyzed, described and tabulated in the form of a table and presented in percentage terms (%).

RESULTS AND DISCUSSION

Table1. Distribution of Respondent Characteristics

Frequency Gender (%)		
Males 30 100		
Female 0 0		
Total	30	100
Age Frequency (%)		
17-20	10	33
21-24	20	67
Total	30	100
Frequency Education (%)		
SMA	5	17
College 25		83
Total	30	100

Table 2. Hematocrit Value Data By Coffee Type

Hematocrit	Hematocrit Value			
	Normal		Abnormal	
	Frequency	(%)	Frequency	(%)
Types of Coffee				
Black Coffee	7	23	17	58
Cappucino	1	3	1	3
White Coffe	1	3	0	0
Milk Coffee	2	7	1	3
Total	11	36	19	64

Table 3. Hematocrit Value Result Data Based on Coffee Drinking Frequency

Hematocrit	Hematocrit Value			
	Normal		Abnormal	
	Frequency	(%)	Frequency	(%)
Frequency of Drinking Coffee				
2-3	11	37	10	33
4-5	0	0	9	30
Total	11	37	19	63

Researchers examined hematocrit values on 30 respondents who met the inclusion and exculpatory criteria in coffee shops or coffe shops. Characteristics of respondents used age, gender and level of education.

Characteristics of Respondents

Based on table 1, 100% of respondents were male as many as 30 respondents. According to Demura, it shows teenage boys love coffee because it keeps them awake and they like the taste rather than teenage girls who prefer tea. This is because men have more activity until late at night, by consuming coffee can keep them awake until the morning As many as 20 respondents (67%) aged 21-24 years, this shows adolescence as a threshold of adulthood where late adolescents with the age of 20 to 24 years become easily agitated to leave their comfort in their teens, at that time adolescents will feel themselves to behave like adults. In general, coffee consumption is intended for adults with strenuous activities and also for work that requires them to be maintained because coffee contains caffeine which can keep the body awake. But nowadays many teenagers consume coffee along

with the development of the times and also the rise of coffe shops or coffee shops that target young people.(Wachjidono and Yahya, 2021)(Putro, 2018)

The education taken by respondents was dominated by universities as students as many as 25 respondents (83%). The function of a coffe shop or coffee shop is now favored by students and students to find a comfortable place just to drink coffee or do assignments (Putri and Deliana. 2019). In the area around the campus, coffee shops are in great demand by students in addition to low prices and also affordable for students, the facilities provided such as free wifi and coffee shops are open for 24 hours non-stop so that they can attract teenagers.

Types of Coffee and Frequency of Drinking Coffee

Based on table 2, it was found that the type of coffee that was in demand by teenagers was the type of black coffee as many as 24 respondents (80%), black coffee came from arabica coffee and robusta coffee which has a distinctive taste and aroma that has a higher caffeine content than other types of coffee. Teenagers tend to like black coffee over other types of coffee in addition to the distinctive taste and aroma the price of black coffee is much cheaper than other types of coffee that Most of the respondents are college students. (Rahardjo, 2012)

Based on table 3 On the frequency of drinking coffee in adolescents the highest is 2 to 3 per day as many as 21 respondents (70%) The function of a coffee shop or coffee shop which is now favored by students and students to find a comfortable place just drink coffee or do assignments (Princess and Deliana, 2019) This shows Most of the respondents are students so they spend time in coffee shops to do assignments and order coffee for them to stay awake.

Hematocrit Value In Active Adolescent Coffee Drinkers

The results obtained showed that as many as 18 respondents (60%) of the hematocrit values obtained were abnormally declared low. Caffeine also has the ability to reduce the number of red blood cells in the body so that the body will not have the ability to store and deliver oxygen from the lungs to all body tissues (Lain and Zurimi, 2021). If the number of red blood cells is reduced in the body it can cause low hematocrit values because red blood cells are the main component of hematocrit.

Based on table 2 types of black coffee are in demand by adolescents with as many as 24 responses (81%) showing as many as 7 respondents (23%) normal hematocrit values and 17 respondents (58%) abnormal hematocrit values. The recommended consumption of caffeine is as much as 200 mg, the caffeine content found in black coffee is higher than other types of instantaneous, namely 126 to 446 mg cups of black coffee served by brewing. In caffeine found in coffee dah tea which can inhibit the absorption of iron in the body which causes a decrease in erythrocytes in the body so that the hematocrit value also decreases(Elfariyanti, Silviana and Santika, 2020)(Tohidin, 2021). This shows that the habit of consuming coffee that has high caffeine levels can affect the hematocrit value in the body.

Based on table 3 , it was found that the frequency of drinking coffee 2-3 per day as many as 11 respondents (37%) showed normal hematocrit values and 10 respondents (33%) showed abnormal hematocrit values, while the frequency of drinking coffee 4-5 per day as many as 9 respondents (30%) all showed abnormal hematocrit values. The recommended

consumption of coffee is 200 mg per day or the equivalent of one to two cups of coffee because with an excessive amount of caffeine in the body can cause hemoglobin in the blood to tend to be unstable and will cause a lack of red blood cells in the body (Tohidin, 2021)

The results of this study are in line with the results of a study conducted by those conducted at the Reno coffee house in Ambon City, Maluku Province, obtained the results of hemoglobin levels in adolescents obtained samples of 30 samples as many as 11 people (36.3%) normal and as many as 19 abnormal people (63.3%). (Lain and Zurimi, 2021)

The relationship of coffee with hemoglobin, caffeine can be able to damage and thwart the process of iron absorption quickly. Caffeine also has the ability to reduce the number of red blood cells in the body resulting in the body not having the ability to store and deliver oxygen from the lungs to all body tissues .(Lain and Zurimi, 2021)This can result in anemic disease because Most of the people who suffer from anemia are caused by iron deficiency resulting in a lack of red blood cell volume of 60-70 percent.

It is known that coffee can increase the energy of the appendix and lipotic activity in the body so that long-term consumption can lose weight and can inhibit the growth and development of adolescents . The frequency of <3 times a day drinking adolescent coffee is very influential on the hematocrit value because the higher the frequency of coffee consumption, the higher the dose of caffeine contained in the coffee so that it can interfere with the absorption of iron in the body and can reduce the number of red blood cells which is the main component in hematocrit.(Tohidin, 2021)

CONCLUSION AND RECOMMENDATION
Conclusion

After conducting a study on the examination of hematocrit values in adolescents actively drinking coffee in warkop or *coffe shop* in dukuhsutorejo village, Mulyorejo, Surabaya city, which was carried out in January-March, the conclusion was obtained:

1. All respondents (100%) are male with an age range of 21-24 years as many as 20 respondents (67%), Most respondents took higher education as many as 25 respondents (83%)
2. The type of black coffee most in demand by adolescents is the type of black coffee as many as 24 respondents (80%), at the highest frequency of drinking coffee consumed by adolescents is 2-3 times per day as many as 21 respondents (70%)
3. Most respondents (60%) of adolescent coffee drinkers had abnormal or low hematocrit values

Recomendation

Based on the research that has been done, the suggestions that can be given are:

1. The results of this study are expected to increase information on adolescents who are prone to a decrease in hematocrit values, so that adolescents can reduce excessive coffee consumption.
2. For subsequent researchers, it is necessary to add the factor of drinking coffee that adolescents consume
3. There needs to be further research and pay attention to other factors that affect hematocrit values in adolescents such as nutritional intake and length of sleep and other bad habits.

4. There needs to be further research on the relationship between the type of coffee and the hematokri value

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