

# Determinants of Anemia Among Youths in Mysore Urban

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## **Abstract**

Anemia is a medical condition that arises from either an inadequate amount of red blood cells or a malfunctioning red blood cell supply. It is the most frequent blood condition. Worldwide, anemia affects 1.62 billion individuals, with children, teenage girls and expectant women being the most common populations to suffer from nutritional anemia. In India, individuals between the ages of 15 and 20 are regarded as youths, as per the National Youth Policy of 2014. The study involved the analyzing of medical data provided by the hospital for the month of June and July 2023. According to the hospital's medical records, out of 10,825 reports, 6,324 are youths, out of which 4,995 people are anemic. That indicates that 46.14% of 10,825 individuals are young and anemic. There are a total of five questions about diet, health, and nutrition. The adolescents' responses indicated that low iron, vitamin B12, and vitamin B9 intake, inactivity, lack of exercise, and ignorance of the relationship between diet, lifestyle, and nutrition and health are likely risk factors for anemia in young people. Comparing the two age group categories showed that the youth in the 15–20 year old age group had a higher chance of being anemic than the youth in the 21–29 year age group.

**Keywords :** Anemia, Medical data, Youths, Risk factors

## **Introduction**

Anemia is a medical condition that arises from either an inadequate amount of red blood cells or a malfunctioning red blood cell supply. It is the most common blood disorder. The primary source of the word "anemia" is the Greek word "anaimi," which means "lack of blood." A hemoglobin level of less than 13.5 g/dl in men and less than 12 g/dl in women is considered anemia (Gunjan et al ., 2021).

Anemia occurs when the body does not have enough healthy red blood cells to distribute oxygen throughout the body. Usually, the body's lack of oxygen causes the symptoms of anemia. The most common cause of anemia is likely any internal or external factor that interferes with the blood cell growing process normally. Usually, it is a result of their rapid destruction. The signs and symptoms of anemia might vary greatly depending on its cause. There are eight primary types of anemia: pernicious, aplastic, hemolytic, sickle cell, iron deficiency, vitamin deficiency, and chronic anemia (Vaidya et al ., 2019)

Iron deficiency anemia is the most common type of anemia. It happens when the body is iron deficient. Iron insufficiency is usually brought on by blood loss, but it can also occasionally be brought on by the body's inability to absorb iron. Pregnancy-related anemia can be brought on by the high iron consumption associated with pregnancy and childbirth. Those who had gastric bypass surgery for weight loss or other reasons can also be iron deficient. People with iron deficiency anemia are frequently pale and may feel cold (Ratre et al ., 2014).

They may also experience headaches, chest pain, cold hands or feet, dizziness, weakness, shortness of breath, and rapid or irregular heartbeats. Severe anemia can become life-threatening (Mostafa et al., 2019).

The body develops vitamin deficiency anemia due to insufficient amounts of vitamins B12 and B9. The vitamins B9, also called folic acid or folate, and B12, also called cobalamin, are essential for the formation of red blood cells. Vitamin deficiency anemia results from the body's inability to form healthy red blood cells when the diet is deficient in vitamins B12 and B9. This type of anemia can cause sudden weight loss, muscle weakness, pale or yellow skin, lightheadedness, and appetite loss (Ohlhorst et al., 2013).

Dietary practices, financial status, and lifestyle decisions are more likely to be the root cause of anemia in youth. The lifestyle choices made by young people, such as drinking alcohol, smoking, and consuming excessive amounts of processed or junk food, are likely to result in vitamin deficiencies and anemia. Anemia affects a child's physical, mental, and emotional development as well as their overall growth. Severe cases of anemia may induce growth retardation and delayed puberty because it interferes with hormone balance and cellular growth processes. The most common demographics for anemia are children, pregnant women, menstruating women, and teenage females (Hu & Lin, 2012).

It is possible to prevent anemia in young people by leading a better lifestyle, making dietary and lifestyle changes, and educating others about nutritional techniques, balanced meals, and the advantages of eating staple foods (Miller & Maropis, 1998).

### **Methodology**

The anemic study's methodology, which includes conducting a comprehensive survey on young people's nutrition, diet, and lifestyle, mostly consists of reviewing blood tests that the hospital offers in order to identify the probable risk factors of anemia.

**Analysis of blood test results:** The hospital provides an analysis of the blood test results for all patients examined in June and July 2023. The individuals in these reports are divided into age groups ranging from 15 to 29. Those who are anemic in this age group are further divided according to their Hb level. In men, the Hb level is less than 13.5 g/dl. In females, a hemoglobin level of less than 12g/dl is deemed anemic. The percentage of young people who are anemic is then determined by comparing the results with the total number of people who were tested in June and July of 2023, using the information provided by the hospital (Robalo Nunes et al., 2020)

**General survey:** 200 persons between the ages of 15 and 29 are included in the general survey, which is carried out at the Hospital in Mysuru. The general survey takes the form of a questionnaire with five questions about young people's diets and lifestyles. The likely risk factors for anemia are listed based on the teens' responses. Out of the 200 respondents who took part in the study, 100 fall into the 15–20 age range and the other 100 fall into the 21–29 age group (McLean et al., 2009).

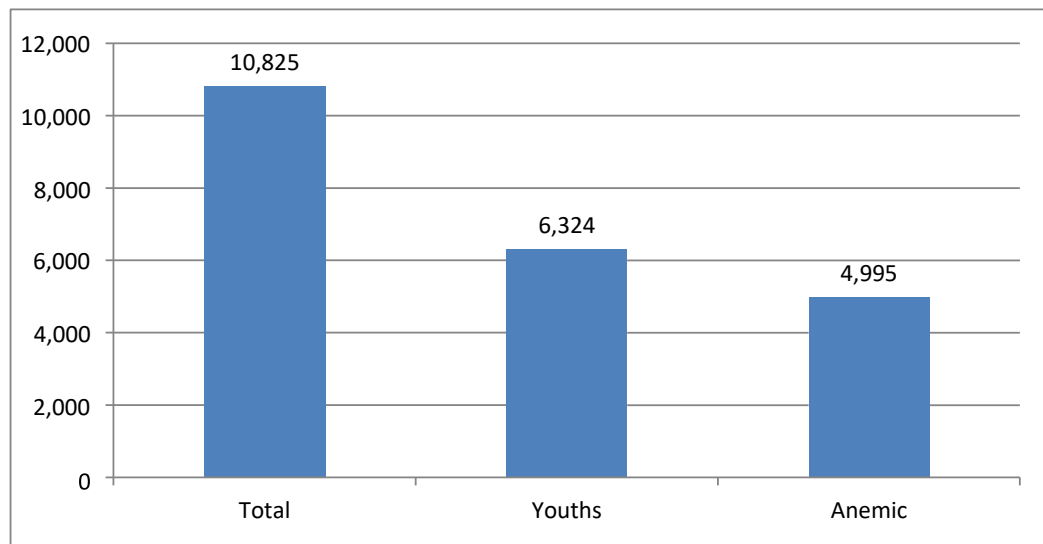
## Result

### Analysis of the medical data.

The blood test report generally includes a variety of parameters that provide information about particular aspects of body's functioning. The common parameters are Complete Blood Count , Basic Metabolic Panel , Lipid panel, Coagulation Profile, Blood Glucose Levels and electrolytes etc. Particularly the Red Blood Testing involves the analysis of Haemoglobin , Hematocrit , Red Blood Cell Count, Mean Corpuscular Volume , Mean Corpuscular Haemoglobin, Mean Corpuscular Red cell distribution width , hemoglobin concentration, and other measurements.

Here in analysing the medical data, only the parameter 'haemoglobin' is considered. The Hb level less than 13g/dL in males and the Hb level less than 12g/dL in females are considered as anemic.

**Graph 1 : Total number of people got tested in the months of June and July 2023 with representation of youths and youths who are anemic**



The blood test reports are the main concern here in this analysis. The Hospital received total of 10,825 blood test reports during the months of June and July 2023. This 10,825 blood reports include children, youths, adults and senior citizens. Out of 10,825 people that got tested, 6,324 people are youth. Which mean the youth occupy 58.42% in the total of 10,825 people. The Hb level is the main concern here in order to classify youths as anemic and non anemic. The Hb level less than 13g/dL in males and the Hb level less than 12g/dL in females are considered as anemic. When analyzed, out of 6,324 youths, 4,995 people are surprisingly anemic. Which means the percentage of youths being anemic in the total of 6,324 youths is 78.98%. The percentage of youth being anemic in the total of 10,825 people makes up to 46.14%. From the analysis it is clear that, the percentage of youths becoming anemic is more than any other age categories. This might be due to the poor dietary choices which lack essential nutrients, binge eating junk food and processed food which does not contribute to good health, chronic diseases like inflammatory bowel

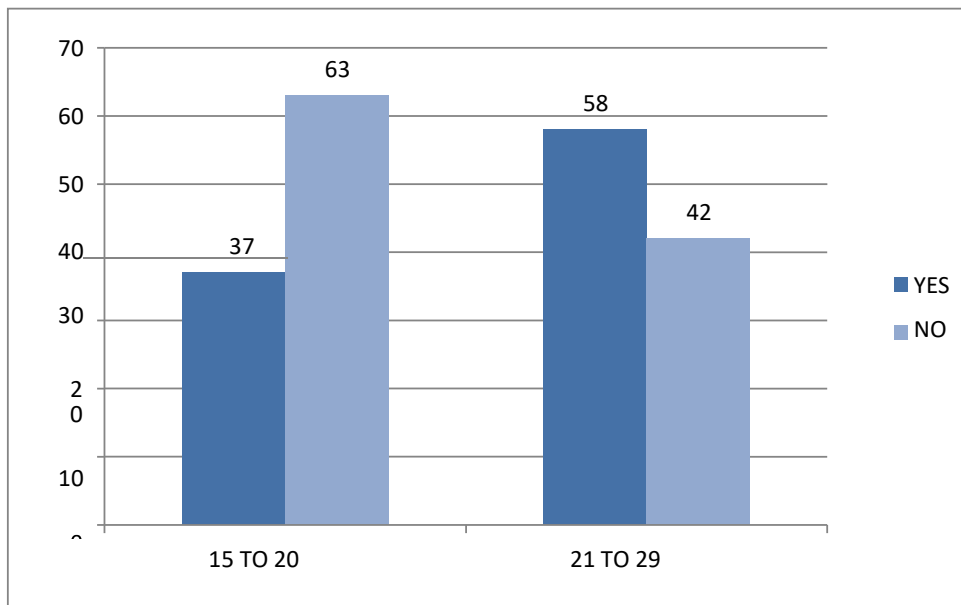
disease, unhealthy lifestyle choices like smoking, drinking alcohol, lack of awareness about nutrition and socioeconomic factors etc.

**General survey regarding the diet of youth.**

The general survey conducted on total of 200 people includes a questionnaire consisting of 6 questions. The questions are based on iron intake, vitamin B12 and vitamin B9 intake, junk food consumption, alcohol consumption, physical activities and one's awareness about how nutrition, diet and lifestyle affects health.

1. Do you regularly consume iron rich foods like fruits (pomegranate, watermelon, banana, dates, and raisins) and vegetables (spinach, sweet potato and beetroot)?

- A. Yes
- B. No



**Graph 2 : Percentage of youths consuming iron rich foods on regular basis**

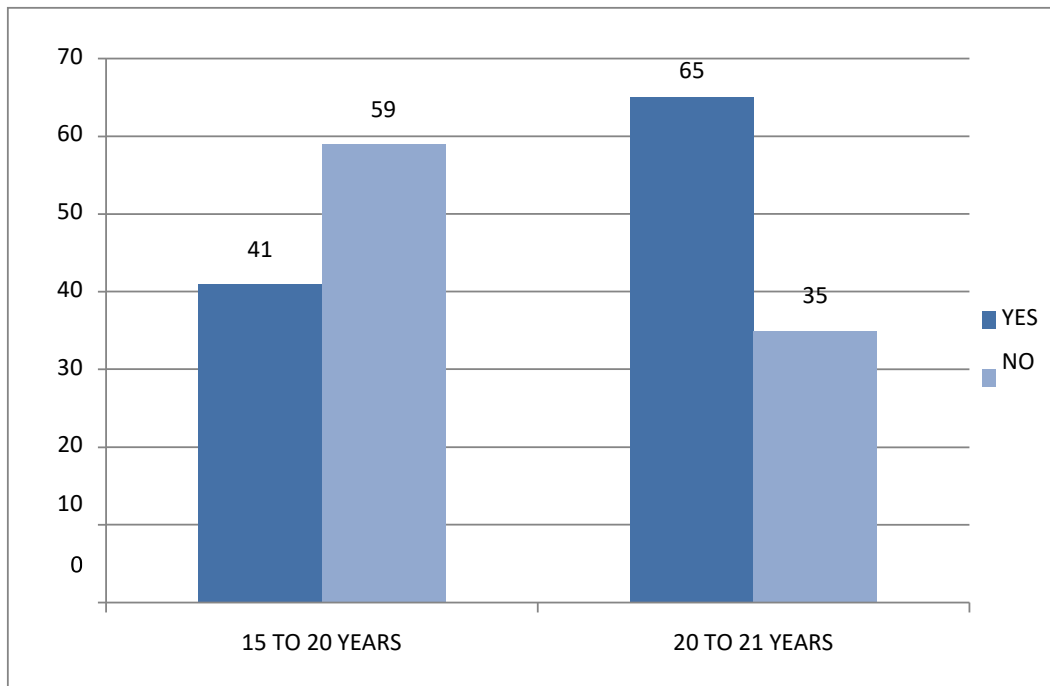
For the given question 37% of the youth belonging to the age group of 15 to 20 years and 58% of the youth belonging to the age group of 21 to 29-year-olds said "yes," while 63% of teenagers in the 15 to 20 age group and 42% of young in the 21 to 29 age group answered "no."

From the above data we can say that, the youth belonging to the age group of 15 to 20 are more likely to become anemic than that of the youth belonging to the age group of 21 to 29 as they are consuming more iron and rich foods.

2. Do you regularly consume eggs and legumes?

A. Yes

B. NO



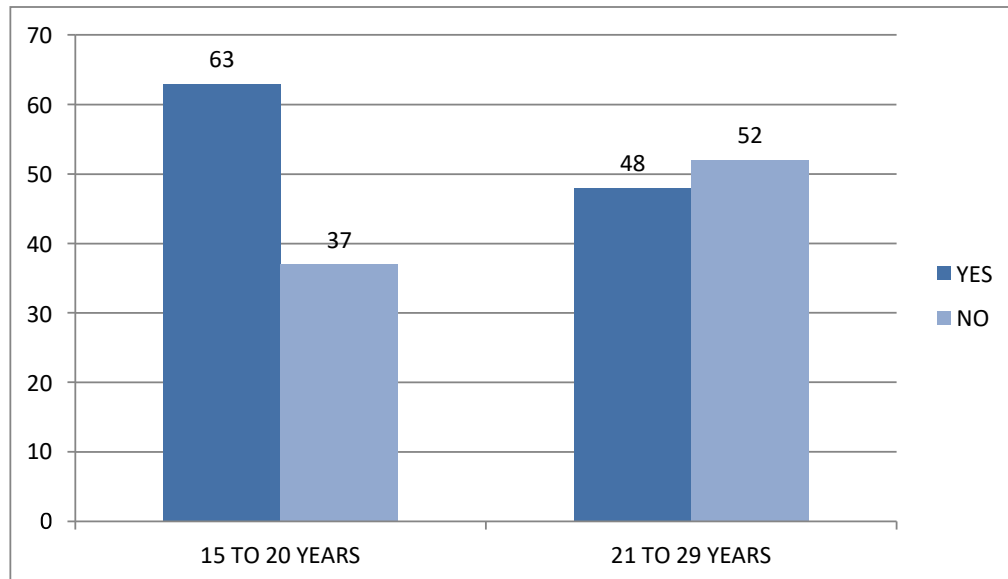
Graph 3 : Percentage of youths consuming eggs and legumes on regular basis.

For the given question 41% of the youth belonging to the age group of 15 to 20 years and 65% of the youth belonging to the age group of 21 to 29 years said yes whereas 59% of the youth belonging to the age group of 15 to 20 years and 35% of the youth belonging to the age group of 21 to 29 years said no.

From the above data we can say that, the youth belonging to the age group of 15 to 20 are more likely to become anemic than that of the youth belonging to the age group of 21 to 29 as they are consuming more vitamin B12 and vitamin B9 and rich foods.

3. Do you frequently consume lot of junk food or processed food (Pizza, Burger, French fries)?

- A. Yes
- B. No



Graph 4 : Percentage of youths consuming junk foods on regular basis.

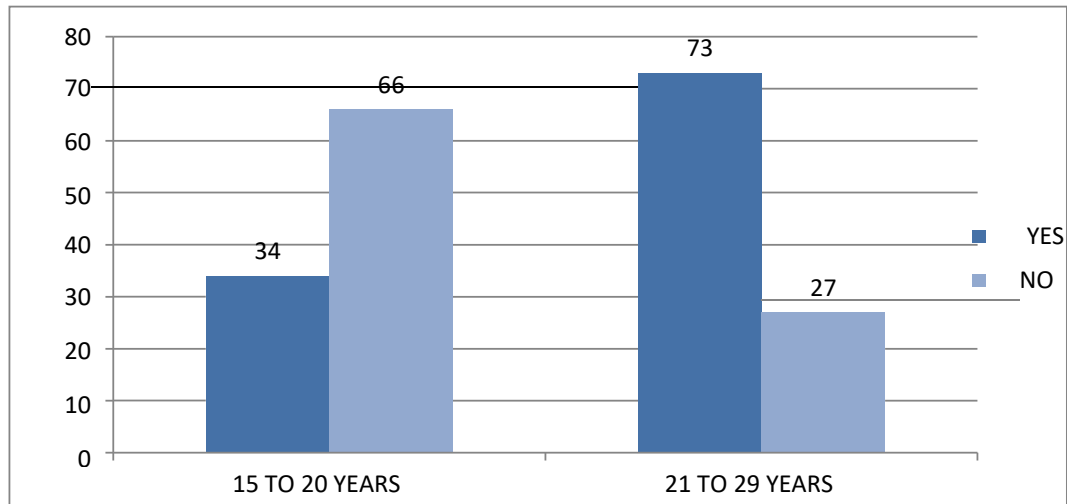
For the given question 63% of the youth belonging to the age group of 15 to 20 years and 48% of the youth belonging to the age group of 21 to 29 years said yes whereas 37% of the youth belonging to the age group of 15 to 20 years and 52% of the youth belonging to the age group of 21 to 29 years said no.

From the above data we can say that the youth of age group 15 to 20 years are more likely to get nutritional anemia due to the consumption of junk food than the youth belonging to the age group of 21 to 29 years.

4. Do you regularly engage yourself in yoga or any other kind of exercises?

A. Yes

B. No



Graph 5 : Percentage of youths regularly involving in yoga and other kind of exercises.





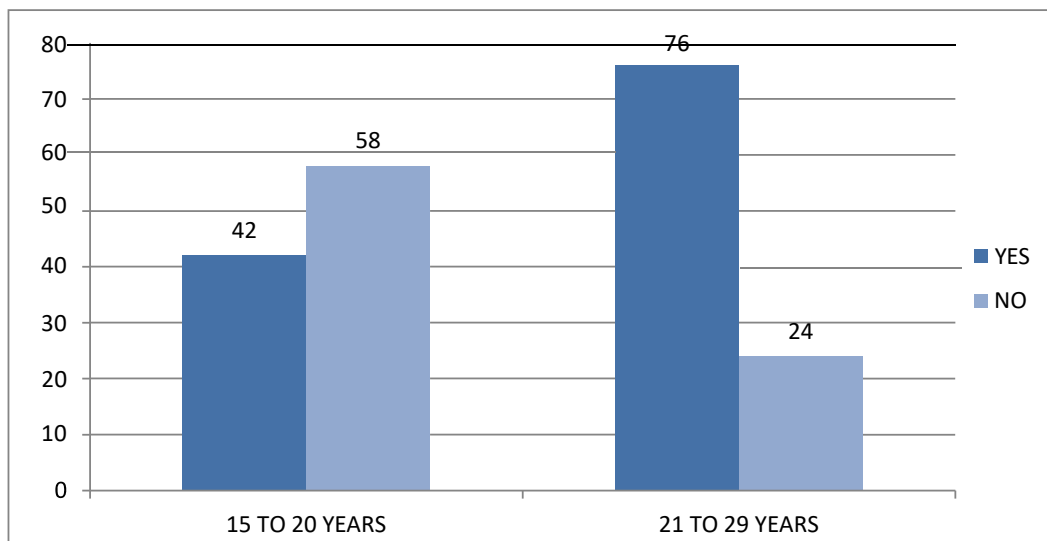
For the given question 28% of the youth belonging to the age group of 15 to 20 years and 55% of the youth belonging to the age group of 21 to 29 years said yes whereas 72% of the youth belonging to the age group of 15 to 20 years and 45% of the youth belonging to the age group of 21 to 29 years said no.

From the above data we can say that, the youth belonging to the age group of 15 to 20 are more likely to become anemic than that of the youth belonging to the age group of 21 to 29 as they are involving themselves in the physical activities and exercises.

5. Are you aware of how nutrition, diet and lifestyle affect health?

A. Yes

B. No



Graph 6 : Percentage of youths who are aware of how nutrition, diet and lifestyle affect health.

For the given question 42% of the youth belonging to the age group of 15 to 20 years and 76% of the youth belonging to the age group of 21 to 29 years said yes whereas 58% of the youth belonging to the age group of 15 to 20 years and 24% of the youth belonging to the age group of 21 to 29 years said no.

From the above data, we can say that the people belongs to the age group of 21 to 29 years are more aware about how nutrition, diet and lifestyle affect the quality of life than that of the people belonging to the age group of 15 to 20 years. The people belonging to the age group of 15 to 20 years need more knowledge regarding nutrition.

### **Conclusion**

For effective treatment of anemia, which has many different aspects, a comprehensive strategy is needed. By emphasizing awareness and education, especially for young people in Mysore, we can enable people to identify the signs of anemia and comprehend the role that diet plays in preventing this illness.

Conduct workshops in community centers and schools to inform kids and their families about the need of a balanced diet, the causes of anemia, and other related topics. During these courses, iron-rich food demos may be included in the cooking sessions.

Collaborate with nearby healthcare providers to conduct free anemia screenings at community gatherings and educational institutions. By doing so, it will be easier to identify those who are at danger and give them the support and resources they need. Create initiatives that encourage the eating of foods high in iron, such as legumes, leafy greens, and fortified cereals. Take into consideration programs that allow low-income families access to certain foods. Start public education campaigns regarding anemia and its prevention by using social media, local radio, and community gatherings. Reaching out to regional influences can aid in expanding your audience. Encourage the addition of anemia education to school health curricula so that pupils are taught about the illness and how to prevent it at a young age. By putting these suggestions into practice, we may build a more knowledgeable community that is better able to prevent and treat anemia, thereby enhancing population health and well-being.

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**Conflict of interest:** None declared

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