



## NUTRITION AS A KEY ELEMENT IN ANEMIA IN THE CITY OF BULQIZA

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### Abstract

**Introduction and Objective:** Anemia affects approximately one-third of the global population and contributes to increased morbidity, reduced work productivity, and impaired neurological development. A balanced diet plays a crucial role in the prevention of this condition. The objective is to understand and define the role of nutrition in the prevention, management, and study of anemia. This includes analyzing the impact of dietary choices on the occurrence, progression, and outcomes of the disease.

**Materials and Methods:** 200 patients diagnosed with anemia were included in the study, initially selected from the patient registry at the Bulqizë Health Center. Patients were interviewed monthly during their visits to consult with a doctor or to receive medication. Dietary intake, visit frequency, and adherence to the doctor's advice were documented in the questionnaire responses.

**Results:** Following the diet is crucial, and 156 patients adhere to it by incorporating iron into their meals. Iron-rich foods have positively impacted patients with anemia.

**Conclusions:** Our study confirms that nutrition plays a crucial role in the management of anemia. A daily balanced diet can significantly impact on your health in various ways. Iron-rich foods are essential for maintaining healthy blood levels. Regular consumption of these foods helps alleviate symptoms and improve anemia.

**Keywords:** *nutrition, diet, anemia, hemoglobin, IMT, treatment*

### Introduction

The World Health Organization (WHO) defines anemia as having hemoglobin (Hb) levels below 12.0 g/dL in women and under 13.0 g/dL in men. Anemia is a significant global public health issue that affects individuals of all ages in both developing and developed countries. (Cappellini and Motta, 2015). Anemia is a critical public health issue worldwide, especially in low- to middle-income countries. In these regions, over 40% of preschool children in Central and West Africa, East Africa, Southern Africa, South Asia, and Oceania are affected. Additionally, it significantly impacts both non-pregnant and pregnant women of reproductive age in Central and West Africa and South Asia (Stevens et al., 2013; Barkley et al., 2015). Compared to the estimates from 1995, those from 2011 show significant changes. The prevalence of anemia declined by 5 percent or less. From 47% to 43% in preschool children and from 33% to 29% in non-pregnant women (NPW) is 43%, while in pregnant women, it is 38% (Stevens et al., 2013). Nutritional causes of anemia include iron and other essential nutrients. Deficiencies, while non-nutritional causes include malaria, infections and hemoglobinopathies (McLean et al., 2008). A study conducted by the Polytechnic University of Madrid in collaboration with the Medical University of Tirana revealed that, in Albania, the average daily consumption of fruits and vegetables is only 1.5 servings, while the average daily meat consumption ranges from 200 to 250 grams (Barkley et al., 2015).

Low- and lower-middle-income countries bear the greatest burden of anemia, particularly affecting pop-

ulations living in rural settings, in poorer households, and those who have not received formal education (Newhall et al., 2020). The biggest causes were dietary iron deficiency, thalassemia and sickle cell trait, and malaria (World Health Organization, 2020).

The purpose of this research is to understand and define the role of nutrition in the prevention, management, and treatment of anemia, among the population of Bulqiza city.

## Material and Methods

Our cross-sectional descriptive study utilized an 11-question survey, with the theoretical framework established through a review of existing literature. Conducted over six months—from January 30, 2024, to June 30, 2024—the study included 200 diagnosed patients (128 females and 72 males). These patients were initially selected from the chronically ill registry at the Bulqizë Health Center and were interviewed monthly during their medication visits.

We informed each patient in advance that the questionnaire was strictly for research purposes and that their identities and privacy would be fully protected. They were reassured that their rights to privacy would remain uncompromised. Of the 200 patients interviewed, 72 were male and 128 were female, with age distributions detailed in Table 1.

Age	Number of cases	Percentage
20-40	164	82%
41-60	36	18%
61-80	0	0%
More than 80	0	0%

**Table 1** displays the age range, and the corresponding number of cases recorded throughout the study.

Out of 200 patients interviewed, 105 (52%) came from urban areas and 95 (48%) from rural areas (table 2).

Residence	Number of cases	Percentage
Urban	105	52%
Rural	95	48%

**Table 2** exhibits the residence of the interview patients.

Regarding the question of what you consume more often, fried foods with 48 patients were on the top of the list followed by alcohol with 35 patients (table 3).

Food consumption	Number of cases
Alcohol	35
Smoke	27
Fast food	32
Coffee	29
Dairy products	28
Fried foods	48

**Table 3** demonstrates the food consumed by the interviewed patients.

All 200 patients answered yes to the question of whether they have been diagnosed with anemia before, and table 4 shows the type of anemia.

Anemia	Number of cases	Percentage
Sickle cell anemia	0	0

Thalassemia	0	0
Aplastic anemia	3	1%
Iron deficiency	156	78%
Vitamin B12 and folic acid deficiency	41	21%

**Table 4** indicates the types of anemia the patients were diagnosed with.

To the question: have you consulted your family doctor about your diet? Table 5 summarizes the number of visits by the patients, showing that 156 said yes, they had had a consultation with the health care professionals.

Consultation with health professionals	Number of cases
Yes	156
No	23
Rarely	7
Sometimes	20

**Table 5** shows the number of patients who got consultation with health professionals.

The importance of nutrition was underlined by 190 patients as they thought that nutrition is crucial to the health (table 6).

The importance of nutrition in managing anemia	Number of cases
Very important	190
Important	8
Slightly important	2
Does not matter	0

**Table 6** summarizes the importance of nutrition in patients with anemia.

To the question of what the main sources of information about diet and anemia management are, the patients (158) mainly answered from doctors and other health professionals. Others got information about anemia management from different sources (table 7).

Source of information about diets and anemia management	Number of cases
Doctors and other healthcare specialists	158
Health Magazines	10
Friends and Other Family Members Affected by Anemia	24
Personal Experiences and Internet Research	8

**Table 7** appears the source of information about diet and anemia management.

Apparently, many patients face difficulties in buying healthy food and finding time for preparation. As table 8 summarizes, 69 patients declare lack of time to prepare healthy food, and 21 of them could not find healthy food in the area they live. The majority (86) of patients could not resist unhealthy but tasty foods.

The biggest challenges in following a healthy diet	Number of cases
The cost of healthy food	24
Lack of time for cooking and preparing food	69
Getting healthy foods that are not available in your area	21
Temptation towards unhealthy but tasty foods	86

**Table 8** summarizes the biggest challenges in following a healthy diet.

## **Discussion**

Our study confirms that nutrition is an essential element in the management and treatment of anemia. A healthy and balanced diet can affect our health in various ways. Iron-rich foods have a basic activity in the human body to produce red blood cells. Their regular use helps in managing symptoms, improving anemia. Nutrition or foods rich in iron have a fundamental impact on anemia, on the growth of red blood cells (Young, 1999).

Anemia can result from poor eating habits and the consumption of junk food, which lacks essential nutrients. Skipping meals, having a low intake of fruits and vegetables, and consuming carbonated drinks can contribute to the development of anemia. Foods such as hamburgers, pasta, bread, and pizza contain phytates, which inhibit the absorption of iron. The trend of consuming fast food is on the rise as people's lifestyles and eating habits have changed (Nupura et al., 2019). Improving eating habits can reduce the risk of anemia. Poor eating habits, skipping meals, consuming ready-made meals, and fast foods are the main causes of anemia in students. Even medical students follow the same eating pattern, despite having better health knowledge and better availability of health facilities (Nupura et al., 2019).

According to our study, iron-rich foods such as spinach, eggs and many other foods have a very big impact on anemia and patients are aware of their nutritional values, but due to various reasons such as the cost of healthy food, as we know Bulqiza is a poor area with low income and for some people following a diet with nutritional values can be expensive. Apart from the economic reasons, lack of time to cook is another reason why they do not eat healthily and do not follow a nutritional program for anemia management. Also, the temptation to eat unhealthy but tasty foods, many patients said they could not resist it. Previous studies have defined that iron deficiency occurs when the body's iron requirements are not met due to physiological factors such as blood loss and inadequate dietary intake (Piskin et al., 2022). Iron deficiency and iron deficiency anemia are widespread health concerns and frequently encounter medical conditions in everyday clinical practice (Camaschella., 2019). Although patients are aware of this, effectively managing their condition requires consuming minimal fat and sugar while prioritizing iron-rich foods, something they acknowledge but often fail to follow. Research indicates that frequent smoking lowers vitamin C levels in the blood, which is essential for iron absorption. The greater the number of cigarettes smoked daily, the more vitamin C decreases. Smoking also impairs the body's ability to absorb iron from food, contributing to other nutrient deficiencies, such as vitamin B12, which is crucial for red blood cell production (Gwathmey & Grogan, 2020). Patients surveyed in the city of Bulqiza, although not adhering to balanced diets, recognize the significant role of healthy nutrition in managing anemia, preventing other diseases, and alleviating symptoms. On the other hand, 75% of patients reported feeling health-wise significantly better when consuming iron-rich foods. According to them, the goal of a nutrition program is to improve overall health, better manage symptoms, and reduce both medication costs and side effects. The questionnaire and discussions with patients had a positive impact, serving as a reminder of the importance of nutrition or providing them with some insight into balanced diets related to anemia.

We could conclude that both dietary habits and lifestyle choices play a crucial role in the development and management of anemia.

## **Conclusions**

Our study confirms that nutrition plays a crucial role in the management of anemia. A daily balanced diet can significantly impact on your health in various ways. Iron-rich foods are essential for maintaining healthy blood levels. Regular consumption of these foods helps alleviate symptoms and improve anemia.

## **Limitations and Recommendations**

We recognize that our study has certain limitations, including the number of participants. Although our participant pool is substantial, obtaining even more data would be advantageous.

Be sure to consult with your family doctor and professional dietitians, stay informed, and undergo regular laboratory examinations. Prioritize a diverse array of fresh, vitamin- and iron-dense foods like lean red meat, poultry, fish, legumes, and dark green leafy vegetables. Enhance iron absorption by incorporating plenty of vitamin C-rich fruits and vegetables. Maintaining a healthy, balanced diet is essential, as medical experts have long recognized the significant influence of nutrition on anemia risk.

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