

Awareness of nutrition and anemia among dental students in South Indian population

Rinki Susan George, R. Gayatri Devi*, A. Jyothipriya

ABSTRACT

Introduction: Anemia is one of the world's most serious global health issues as mentioned by the World Health Organization. Anemia can be defined as a condition in which oxygen carrying capacities are insufficient to meet the physiologic needs. Iron is an essential mineral which facilitates healthy functioning of the body. Vitamin C has been shown to enhance the process of iron absorption. It captures non-heme iron and stores it in a form that is more easily absorbed by the body. Hence, the current study is to create awareness of nutrition and anemia. **Materials and Methods:** A cross-sectional survey was distributed among 100 dentists between 18 and 25 years of age from various government and private dental colleges in Chennai through the SurveyPlanet application. The questionnaire consisted of 11 questions which were formulated for checking whether the students are well aware of the importance of nutrition and anemia. Results were tabulated using statistics. **Results:** About 82% of the total participants were quite equipped with the basic knowledge about being nutritious. Entire participants stood firm in the opinion of compulsorily having breakfast daily. 100% of the students were quite familiar with the term anemia from which 58% believed that anemia was due to the deficiency of iron while 35% of the participants assumed that anemia was due to the deficiency of hemoglobin, whereas 7% thought that anemia was due to the deficiency of proteins. **Conclusion:** Education interventions play a key role in changing ones attitude for the betterment of the society. Nowadays, most of the students are familiar in terms of anemia and nutritional importance in diet to maintain their health. Due to modern lifestyle, they are not following in day today life.

KEY WORDS: Anemia, Hemoglobin, Nutrition

INTRODUCTION

Anemia is one of the world's most serious global health issues as mentioned by the World Health Organization. Anemia can be defined as a condition in which oxygen carrying capacities are insufficient to meet the physiologic needs. Iron deficiency anemia is the most common type of anemia which can be due to the long-term negative iron balance, thereby causing deterioration in the level of hemoglobin from the normal level. It is normally widespread in young children and women of reproductive age. It is clinically not evident until the anemia gets severe.^[1] The possible causes for the iron deficiency are accelerated development, hormonal changes, malnutrition, beginning of menstrual cycle in adolescent girls, etc., may lead to impaired perceptions and problems

in learning.^[2] The most common symptoms are fatigue, shortness of breath, headache, and chest pain. Others types of anemia include thalassemia, aplastic anemia, hemolytic anemia, sickle cell anemia, pernicious anemia, and Fanconi anemia. Thalassemia is a condition where less red blood cells (RBCs) and deficiency in globin chain synthesis. Aplastic anemia is a blood disorder in which the bone marrow does not make enough new blood cells, thereby causing multiple heart problems include arrhythmias, an enlarged heart, infections, and bleeding. Hemolytic anemia is a disorder where RBCs are destroyed and removed from the bloodstream before their life span is up. Sickle cell anemia is a serious disease in which the body makes sickle-shaped RBCs, thereby causing blockage of blood vessels which leads to pain, infections, and serious damage to various organs. Pernicious anemia is a condition where the body is incapable of making RBC due to the absence of Vitamin B12. Fanconi anemia is a rare blood disorder that leads to the bone marrow failure.^[3] Iron is an

Access this article online

Website: jprsolutions.info

ISSN: 0975-7619

Department of Physiology, Saveetha Dental College, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai, Tamil Nadu, India

*Corresponding author: R. Gayatri Devi, Department of Physiology, Saveetha Dental College, Saveetha Institute of Technical and Medical Sciences, Saveetha University, 162, Poonamallee High Road, Chennai - 600 077, Tamil Nadu, India. E-mail: gayatri.physio88@gmail.com

Received on: 19-11-2018; Revised on: 15-12-2018; Accepted on: 18-01-2019

essential mineral which facilitates healthy functioning of the body. Vitamin C has been shown to enhance the process of iron absorption. It captures non-heme iron and stores it in a form that is more easily absorbed by the body. Foods rich in Vitamin C include citrus fruits, dark green leafy vegetables, bell peppers, melons, and strawberries. Meat, fish, and poultry not only provide well-absorbed heme iron but they can also stimulate absorption of the non-heme form.^[4]

Anemia treatment varies for different causes. For iron deficiency anemia, iron supplements must be consumed in the diet. For vitamin deficiency anemia, folic acid and Vitamin B12 must be included in the diet. Blood transfusions are conducted for aplastic anemia and thalassemia. Anemia associated with bone marrow can be treated through medications, chemotherapy, or bone marrow transplantation. Treatments such as administration of oxygen and pain-relieving drugs are provided for patients suffering with sickle cell anemia.^[5]

MATERIALS AND METHODS

A cross-sectional survey was distributed among 100 dentists between 18 and 25 years of age from various government and private dental colleges in Chennai through the SurveyPlanet application. The questionnaire consisted of 11 questions which were formulated for checking whether the students are well aware of the importance of nutrition and anemia. Results were tabulated using statistics.

RESULTS

About 82% of the total participants were quite equipped with the basic knowledge about being nutritious. Entire participants stood firm in the opinion of compulsorily having breakfast daily. 100% of the students were quite familiar with the term anemia from which 58% believed that anemia was due to the deficiency of iron while 35% of the participants assumed that anemia was due to the deficiency of hemoglobin, whereas 7% thought that anemia was due to the deficiency of proteins.

DISCUSSION

Health awareness is one of the most important indicators which help in revealing a person's knowledge about health problems. In this survey, when explored about the nutritional knowledge [Figure 1], 82% of the total participants were quite equipped with the basic knowledge about being nutritious. Entire participants stood firm in the opinion of compulsorily having breakfast daily as it replenishes the sources of vitamins and minerals in our body, thereby strengthening the body's metabolism rate [Figure 2]. This, in turn,

reduces the risk of increase in the level of bad low-density lipoprotein (LDL) cholesterol, diabetes, heart disease, and the chances of getting overweight. About 45% of the students felt it would be better to consume a mixture of mixed reduced and full-fat dairy products than the products with just reduced fat [Figure 3]. This is because consumption of only saturated fats can increase the risk of bad LDL cholesterol. The ideal consumption of oily fish must be 1–2 times in a week [Figure 4] as frequent consumption of such foods can increase the risk of developing Type 2 diabetes by up to a quarter. 100% of the students were quite familiar with the term anemia from which 58% believed that anemia was due to the deficiency of iron while 35% of the participants assumed that anemia was due to the deficiency of hemoglobin, whereas

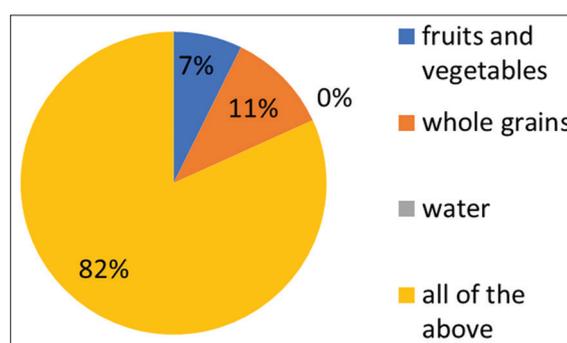


Figure 1: Food items are recommended by the health experts to consume in larger quantities

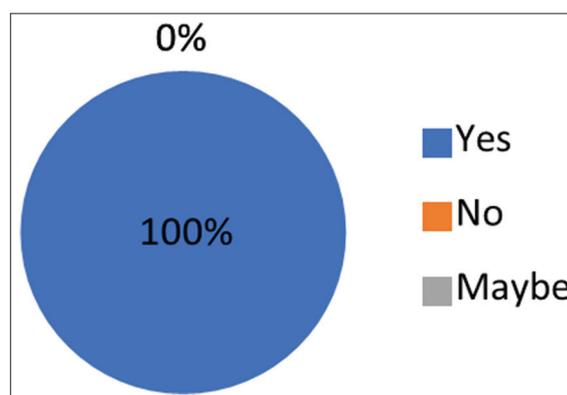


Figure 2: Necessary to eat breakfast daily

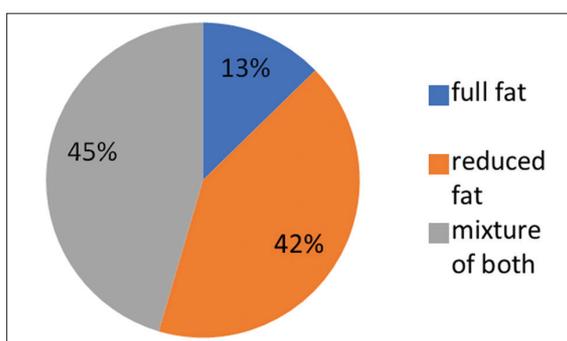


Figure 3: Recommended type of dairy products

7% thought that anemia was due to the deficiency of proteins [Figure 5]. This shows that they have a vague idea about anemia and there is a high need for the students to know about anemia and various types of it. 49% opt for consumption of iron-rich foods and having a healthy lifestyle to prevent this serious illness [Figure 6].^[6] The present study revealed that 82% and 58% of the students had good knowledge about nutrition and anemia, respectively. This can be significantly compared with the study performed by Gautam *et al.*^[7] which showed that 66% of the dental students were aware of anemia.^[7] A study by Gautham *et al.* (2005) found that during the onset of menarche at puberty and in the absence of adequate dietary intake, young girls become highly susceptible to anemia.^[8] Furthermore, in a study done in Haryana involving intervention to young girls, it was seen that knowledge and awareness of the girls regarding anemia and iron-rich foods increased invariably.^[9]

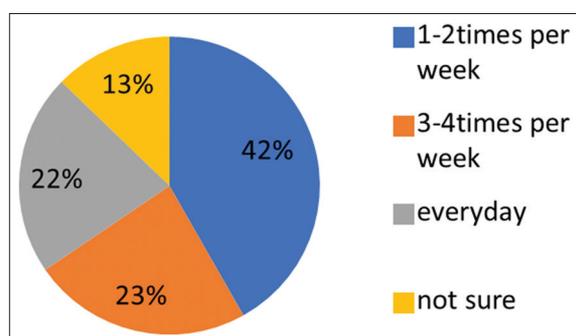


Figure 4: Consumption of oily fish in a week

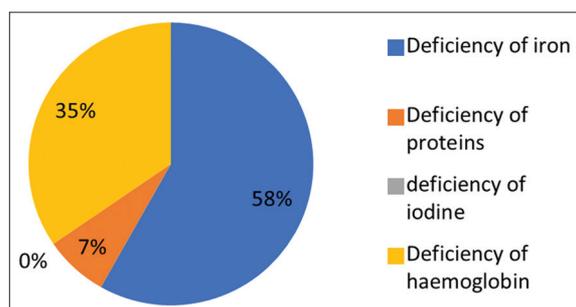


Figure 5: Anemia

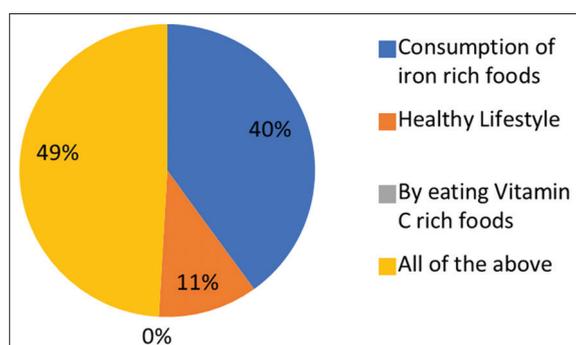


Figure 6: Prevention of anemia

The prevalence of anemia in all the groups is higher in India as compared to other developing countries.^[10] It is very disappointing to note that the scarcity of researches in anemia exemplifies how society fails to notice anemia as a serious disease. Hence, the need of the hour must be to create awareness among the public with the help of various units like national social service unit which are conducted in various medical and dental institutions. This will, in turn, encourage the students to be aware of the importance of being healthy and to know about the serious illness, anemia, thereby voluntarily register for regular health checkups.^[11] Training programs must be conducted to increase awareness of anemia and introduce precautionary measures to avoid it among the dental students. In addition to this, Supplementary Nutrition Programmes are initiated to give students a brief idea about the need for being healthy.^[12] It is important to raise awareness in all possible ways to stop this disease from continuing to be a silent destroyer to the younger generation.^[13] For students from various dental colleges, majority of them are aware of the need for increase in nutritional requirements in their diets to facilitate growth and other involuntary processes.^[14] The well-being of the present and the future generations is based on the current nutritional status.^[15] The results revealed that the students using educational interventions like cross-sectional surveys are well aware of the importance of having nutritional knowledge and to know all about the blood disorder anemia.^[15]

CONCLUSION

Education interventions play a key role in changing one's attitude for the betterment of the society. Nowadays, most of the students are familiar in terms of anemia and nutritional importance in diet to maintain their health. Due to modern lifestyle, they are not following in day-to-day life.

REFERENCES

- DeMaeyer E, Tegman A. The prevalence of anaemia in the world. *World Health Organ Q* 1998;38:302-16.
- Stolzrus RJ, Dreyfuss ML, editors. *Guidelines for the Use of Iron Supplements to Prevent and Treat Iron Deficiency Anaemia*. Washington, DC: ILSI Press; 1998. p. 39.
- Işık Balcı Y, Karabulut A, Gürses D, Ethem Çövit I. Prevalence and risk factors of anemia among adolescents in Denizli, Turkey. *Iran J Pediatr* 2012;22:77-81.
- Park K. *Park's Textbook of Preventive and Social Medicine*. 21st ed. Jabalpur: Bhanot Publishers; 2011. p. 546.
- Kishor J. *National Health Programmes of India*. 9th ed. New Delhi: Century Publications; 2011. p. 176.
- World Health Organization. *Worldwide Prevalence of Anemia 1993-2005*. Switzerland: WHO Global Database on Anemia; 2008.
- Malay KK, Duraisamy R, Brundha MP, Kumar MP. Awareness regarding anemia among 1st year dental undergraduate students. *Drug Invent Today* 2018;10:1463-7.
- Gautham VP, Bansal Y, Taneja DK, Ingle GK. A study on compliance to iron-folic acid therapy and its effects on anemia

- during pregnancy. *Indian J Prev Soc Med* 2005;36:102-7.
9. Patel H, Solanki H, Gosalia V, Vora F, Singh MP. A study of awareness of nutrition and anaemia among college going students of mahila college of Bhavnagar. *Natl J Community Med* 2013;4:302.
 10. Survival for Women and Children Foundation (SWACH). Prevention and Control of Anaemia in Pregnant Women and Adolescent Girls in Rural Areas of Haryana. Haryana: India: Survival for Women and Children Foundation; 1998.
 11. Kishore J. National Health Programmes in India. India: Century Publications; 2010. p. 400.
 12. Neeson N, Stanhope M, Lancaster J. Foundations of Community Health Nursing, Community Oriented Practice. 2nd ed. London: Mosby Company; 2002. p. 355-63.
 13. The Centre for development and Population Activities (CEDPA). Adolescent Children in India-Choose a Better Future: An impact Assessment. Washington, DC: The Centre for development and Population Activities (CEDPA); 2001.
 14. National Family Health Survey NFHS 3 India 2005-06 Final Report.
 15. Saibaba A, Ram MM, Rao GV, Devi U, Syamala TS. Nutritional status of adolescent kids of urban slums and the impact of IEC on their nutritional knowledge and practices. *Indian J Community Med* 2002;28:151-6.

Source of support: Nil; Conflict of interest: None Declared