



The Presence of Anemia of University Leveling Students from Dysfunctional Families



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Abstract



An exploratory, descriptive, correlational and explanatory field and documentary study was conducted in UTM leveling students aged 15 to 19 years with anemia at which was determined the level of family dysfunction by means of a test that measures the adaptation, participation, gain, affection and resources (APGAR), an instrument that shows how family members perceive the level of functioning of the family unit in a global way, this is called APGAR family, with the purpose of assessing family dysfunction in leveling students from 15 to 19 years who have anemia as a result of titling work, the determination of crises and the existence of levels of knowledge that would allow the adoption of an adequate management of situations generated by this. We investigated the population of leveling students who present anemia through the clinical history of the late adolescent or adult, which coincide with levels of hemoglobin lower than the normal standards according to sex and age and a family APGAR test to assess the systemic functionality of the family. The result was that the health problem based on the hemoglobin values were pregnant women, men who in the case of women found the highest incidence of this and that the type of hypochromic normocytic anemia was greater than the hypochromic microcytic, these results allowed to apply a program of family orientation for the prevention of anemia.

Keywords

*anemia;
APGAR test;
dysfunctional family;
nutritional status;
psycho social;*

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1. Introduction

Anemia is a global public health problem that affects developed and developing countries with important consequences for human health and social development. It happens in all stages of the life cycle, but it is more prevalent in pregnant women and young children. Anemia is the result of a wide variety of etiologies that may be independent, but more often coexist. Overall, the factor that most contributes to the onset of anemia is iron deficiency. It is generally assumed that 50% of anemia cases result from iron deficiency, but the proportion may vary ([American Academy of Pediatrics, 2003](#)).

The main risk factors for the incidence of anemia include low iron intake, poor absorption of iron from diets high in phytates or phenolic compounds and the life span. Among the other causes of anemia, asymptomatic, hookworm, amoeba, Ascaris and schistosomiasis infections can decrease hemoglobin (Hb) concentrations as consumption or deficit and absorption produced by them ([Sánchez-Salinas et al., 2011](#)). Acute and chronic infections, including malaria, cancer, tuberculosis and the presence of other micronutrient deficiencies, including vitamins A and B12, folate, riboflavin, and copper may also increase the risk of anemia ([Bailey, 2015](#)).

There is a relationship between the presence of anemia and family dysfunction. In the family a series of events that allow the development of its members is related. It is to be assumed that young adults have grown up in a socioeconomic and effective environment, which can lead to a good nutritional status ([Luca, 2017](#)); ([Gómez et al., 2013](#)).

If food safety and family functionality are related to nutritional status, this accounts for alternative factors that can be intervened to prevent malnutrition and at the same time decrease the incidence of deficiency anemia. Based on this study, the aim is to establish a program for the prevention of iron deficiency anemia with a family focus that contributes to the achievement of lifestyles that favor homeostasis and a harmonious family environment ([Hernández et al., 2010](#)).

The following work will provide substantial information, presence of anemia, severity of anemia, type of anemia, assessed by hemoglobin levels as an instrument to determine it, blood group, marital status of students, type of family, degree of family satisfaction, nutritional status after obtaining the BMI and according to WHO standards according to weight and age, especially focusing on anemia in the family functional context ([WHO, 2008](#)).

Anemia is a health condition that affects the human being in its biological, psychological and social sphere, is associated as a secondary cause to multiple diseases, physiological and nutritional situations. In the Ecuadorian environment, it is a widely distributed disease, the main risk group being children, women of reproductive age, pregnant or elderly, who in turn maintain a socioeconomic level with few resources or characteristics that ineffectively contribute to their health status ([Sánchez, 2016](#)).

Anemia is a disorder in which the number of erythrocytes (and, consequently, the oxygen-carrying capacity of the blood) is insufficient to meet the needs of the organism. The specific physiological needs vary according to age, sex, altitude above sea level to which the person lives, smoking and the different stages of pregnancy. It is believed that, overall, iron deficiency is the most common cause of anemia ([Vilaplana, 2001](#)), but can cause other nutritional deficiencies (including folate, vitamin B12, and vitamin A), acute and chronic inflammation, parasitosis and hereditary or acquired diseases that affect the synthesis of hemoglobin and the production or survival of erythrocytes ([Prieta et al., 2002](#)).

The concentration of hemoglobin alone cannot be used to diagnose iron deficiency (also called iron deficiency). However, it should be measured, although not all anemias are caused by iron deficiency. The prevalence of anemia is an important health indicator and when used with other determinations of nutritional status with respect to iron, hemoglobin concentration can provide information about the intensity of the "ferropenia" ([World Health Organization, 2007](#))

From the observations made to the university population and within the medical work experience, anemia stands out as the disease with the highest incidence, especially in the female sex of reproductive age,

which requires the expansion of efforts and resources to solve the state of health of said risk group (Montes *et al.*, 2012).

Ecuador corresponds to one of the countries in Latin America where the gastronomy rich in carbohydrates and lipids is a risk factor from the nutritional point of view for the development of deficiency anemia, especially iron deficiency anemia, also due to the fact of being a country considered to be the third world, the level of education and culture often does not give enough care to take into account signs or symptoms that can aggravate an anemia (Moraga, 2008); (Ochoa, 2015).

A family dysfunction makes up one of the predictors of behavioral and behavioral alterations in adolescents, such as the practice of self-induced vomiting to lose weight or to attract the attention of their caregivers, whether parents, family members, among others. In addition, young people tend to adopt or copy models of parental actions, low self-esteem also corresponds to trigger psychosomatic origin circumstances produced by stress that affect health, burn up, bullying can also be determining factors in the development of anemia in this group of age including in addition biological, psychological and social situations that are already conditioning factors to the development of anemia (Moreno, 2007).

The dysfunctional family is a predictor agent for the development of unhealthy behaviors in adolescents, aggravated by partnering with age, education, occupation, and marital status" (Gomez *et al.*, 2013)

One of the main concerns for a student from an educational point of view, it is undoubtedly the academic performance which can also be influenced negatively due to the circumstances or biological negative conditions (anemia) in the way in which the disease develops. Its sign and symptomatology; and psychosocial (family dysfunction and non-nuclear family) triggering inappropriate behaviors and behaviors for this age group (Ochoa, 2015).

2. Materials and Methods

The family APGAR has been used as an instrument for assessing family function, in different circumstances such as pregnancy, postpartum depression, allergic conditions, and hypertension and in studies of health promotion and family follow-up. That it has been possible to observe that the instrument is useful and easy to apply, particularly when the specialist is willing to perform it in all patients with or without suspicion of presenting family dysfunction (Suarez Miguel A, Alcalá Espinoza M., 2014).

A field investigation was carried out with a qualitative and quantitative approach, which are combined properly. The exploratory, descriptive, correlational and explanatory one was also applied. Theoretical and empirical methods were applied for data collection.

It used the historical-logical method to know the evolution of anemia and dysfunctional families and the analysis-synthesis and induction-deduction for the determination of the problem, in the systematization of the theoretical and methodological foundations and the elaboration of syntheses and ideas conclusive

From the analysis and data collection in the medical consultation (clinical history, structured survey and Family APGAR Test), the review of the daily records of the medical consultation and monthly reports of attention to the students of the Technical University of Manabí (UTM) during the months of August and September of 2017, confirming the incidence of anemia in the leveling students between 15 to 19 years.

Interviews were carried out among the group named Ontario, to obtain the information of the leveling students to know information about their families and the styles of feeding in the homes and in their life outside the home.

The sample investigated by 135 students of leveling with anemia, attended during the months of August and September of 2017. In virtue of the convenience and ease of access to information in the medical consultation, daily records and monthly reports of the Medical Department, coinciding this period with medical control of the process of entering the UTM for leveling students.

The inclusion criteria were those students who are taking the leveling course of the UTM who present anemia and who are between the ages of 15 and 19 and as exclusion to the students who do not belong to the leveling of the UTM and leveling students who do not belong to the age group between 15 to 19 years of age. Two questionnaires of closed questions will be applied (test 1: Structured questionnaire and test 2: Family APGAR).

3. Results and Discussions

In this section, the results obtained from the interviews, observation, and survey applied to level students are presented below from the Technical University of Manabí, city of Portoviejo, province of Manabí, Ecuador, which presented anemia in the medical consultation during the months of August to September 2017.

To carry out a clearer analysis and without letting information escape, it was created in Microsoft Excel, where all the data obtained was downloaded to be analyzed by means of tables and graphs, and health data were collected from the respondents, including sex, marital status, age, marital status, BMI, the level of hemoglobin for the diagnosis of anemia, its microscopic type and severity, as well as questions described in the family situation questionnaire such as: composition and number of members to determine the type of family, main provider of the household and profession that performs, and the perception of violence or satisfaction within the family circle, and APGAR family instrument applied by the interviewer to assess the state of familiar functionality. Table 1 shows the presence of anemia according to sex.

Table 1
Anemia according to sex

Patients with anemia	Anemia according to sex	Percentage (%)
Women (not pregnant)	128	95
Pregnant women	1	1
Men	6	4

Of the 135 corresponding respondents, 129 were women 96%, of which 128 were not were pregnant, which is 95% of non-pregnant women and only one was pregnant, also had 6 men. The majority of leveling students between 15 to 19 years of age surveyed who presented anemia were women compared to men, women by biological, psychological and social aspects tend to be the population with the highest incidence of anemia, in contrast to the low incidence in men's.

Table 2 shows the different types of anemia presented in the studied samples, as noted 79% presented "hypochromic normocytic" type anemia and 21% presented anemia "Hypochromic microcytic

Table 2
Anemia according to type microscopically

Type of anemia	Patients with anemia	Percentage (%)
Hypochromic normocytic	106	79
Hypochromic microcytic	29	21

The type of anemia that most affects the age group of leveling students between 15 to 19 years old is "hypochromic normocytic anemia", which points towards better diagnosis and treatment.

From the data obtained on the functionality of the family APGAR of the 135 leveling students, 56% do not present family dysfunction of any level, 30% have mild family dysfunction, and 10% have moderate family dysfunction and 4% have total presents severe family dysfunction. In Figure 1 the graph showing this relationship is shown, the 44% present some level of family dysfunction through the interpretation of family APGAR, which means that approximately 9 out of 20 students with anemia have dysfunctional families, reflecting a significant relationship of family dysfunction it is one of the contributing factors for the presence of anemia.

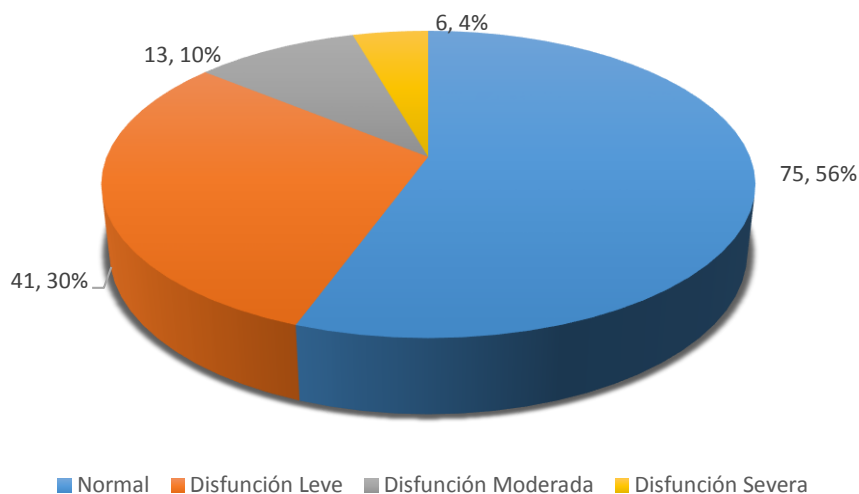


Figure 1. Graph of family functionality

In the study it was found that 94% of students were exclusively fed at home, noting that despite this the incidence of anemia remains one of the most frequent diagnostic diseases in the territory, so it should promote nutritional alternatives used in the home so that this incidence decreases because most of them are associated with nutritional deficit.

It was obtained as one of the results in the study that 3% of the students in the study sample who suffer from anemia report having been a victim of violence. It should be taken into account that not all students exhibit these cases, there could be a percentage of students that mask their role as victims of violence within their family or another social environment through reprisals or fear.

Orientation Program

There is an orientation program that promotes the active incorporation of involved parties committed to a change, these principles of knowledge and stimulation of family functioning, are shown as indicated (Castillo, 2015), educational prevention in adolescents, in the context of school and family; any form or level of orientation should contribute to the development of the family group, benefiting their functions, to enrich their educational potential. Part of the recognition of the family as a socializing system in the formation and development of the human being, of the preponderant nature of the primary group because of its psychological and social significance.

In addition to this, some of the rules that must be met based on knowledge of family functioning and its influence on the formation of new generations, through its characterization or diagnosis, must preserve the privacy and privacy of family functioning; provide cooperation to families; stimulate the psychological development of the beneficiaries and; respect the process of family education as complex and contradictory.

The second principle can be stated as the integrity of the orientation, it has as its essence its coherence and objectivity, it is a basic condition for the development of this process. Integrity is understood in its most general definition, encompassing integration, systematic and systemic, coherence. It confers objectivity to the orientation process

It includes the accuracy of the objectives of the orientation based on the priorities and the forecast, determined in the diagnosis or characterization; delimitation of the content of orientation, and; attention to the needs of all beneficiaries and gradually according to their potential.

In principle of participation, it is necessary because the subject must be the dynamic, protagonist center, based on their needs, demands, knowledge and potential, their meanings; understanding the participation in its three meanings: Be part, have part and take part, assuming the heterogeneity of adult positions and diversity between families and their environment, promoting the enriching exchange of educational

influences through school relations - family and consider human development as an end, not as a means or instrument.

The principle of enrichment of family communication was taken into account, this should promote and encourage mutual knowledge among its members, their exchanges, identify and overcome barriers, so as to allow the development of their feelings of acceptance and coexistence, the development of skills for the management or avoidance of supporting factors of conflicted climates, with constructiveness, as well as to promote positive affective experiences and experiences of rich exchange for the attention and satisfaction of its members.

The principle of the training of the counselors was assessed, focusing on the preparation of the specialists who should carry out the orientation, considered as coordinators, facilitators or drivers, of ethical positions, as initial requirements for the success of the orientation process.

The theoretical search carried out to support the study from the aspects of Anemia as a disease associated with various causes and dysfunctional families from various components, allowed a solid and clear identification of this disease in aspects such as: definition as the decrease in the erythrocyte mass by below the values needed for optimal transport of oxygen to the tissues; the specific symptoms and signs of the anemic syndrome are a consequence of this fact and of the compensatory cardiovascular responses according to the severity and duration of the hypoxia. Also among the concepts associated with the disease clarity and updated positions of the causes and epidemiology of the anemias were achieved, is it the result of one or more combinations of three basic mechanisms: blood loss, decrease in the production of red blood cells or an increase of the destruction of red blood cells.

Through the predictors of family functionality we can give value to a certain group of variables that are related to interpersonal, extrapersonal, family, economic, and cultural characteristics; in short, the environment in which each component operates can intervene positively or negatively in the subsequent development of the family.

A program of family orientation was applied to the prevention of anemia in the students of the university community and at-risk groups it has the possibility of impacting dysfunctional families and achieving their incorporation in the changes of lifestyle and eating habits of the students of Leveling from an active participation of the recipients of the program and from a dynamic of groups coordinated by one or two qualified professionals in guidance and educational intervention for family life.

The prevalence of anemia in adolescents between 15 and 19 years of age is associated to lifestyles and in particular to food habits and types of food that are consumed more regularly, and dysfunctional families are a predictive agent for the development of behaviors unhealthy in teenagers.

4. Conclusion

The results obtained from the surveys applied to the leveling students of the UTM, identify that the majority of young people between 15 to 19 years of age who had anemia, 79% of them presented "hypochromic normocytic" type anemia and 21% present anemia "Hypochromic microcytic".

From the data obtained on the functionality starting from the family APGAR, it stands out that 75 students do not present family dysfunction of any level, 30% have mild family dysfunction, 10% family dysfunction. Of these, 44% present some level of family dysfunction through the interpretation of the family APGAR, which means that approximately 9 out of 20 students with anemia have dysfunctional families.




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