

Nutrition and its Impact on the Academic Performance of Seventh-Year Students

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ABSTRACT: When people choose their daily food, they are influenced by the media and their immediate environment. Therefore, maintaining a healthy diet is essential for positively affecting various aspects of life, including academic performance. This article aims to determine the impact of nutrition on the academic performance of seventh-year students at Manuel Cedeño Basic School in the Maluco community of Cojimíes parish, Pedernales canton. The primary purpose is to analyze the relationship between nutrition and academic performance, identify factors affecting student performance, and propose ways to improve it through proper nutrition. The methodology involved the analytical method to analyze survey data and represent results quantitatively. A survey instrument was developed and applied to 16 students and six teachers, enabling qualitative and quantitative analysis. Based on the survey results, recommendations were formulated regarding adequate nutrition to enhance academic performance. Topics include nutritional needs, essential nutrients, daily dietary requirements, food groups in the nutritional pyramid, and the importance of physical activity.

KEYWORDS: nutrition, food, eating habits, academic performance

INTRODUCTION

Food is the main basis of every human being and eating habits are also the same that begin from the first months of life, during the school stage nutrition plays a fundamental role is where healthy habits are established that will allow to develop a correct state of health throughout life, nutrition should be considered as a fundamental and personal investment. Nutritional nutrition is determined by the intake we consume and the physiological adaptations that occur when ingesting nutrients Macias at el. (2012). Therefore, a healthy lifestyle and a healthy body are obtained from a correct eating pattern, which is decisive from home outwards that develops in adulthood.

According to Santos & Barros (2022) the World Health Organization (2018) nutrition is all balanced and combined intake of foods that contain significant amounts of macro and micronutrients essential for good health, which must be combined with the corresponding physical exercise and according to the different stages of life. Thus, one of the stages where various challenges with nutrition are experienced is the school stage, one of them is learning to eat correctly and develop eating habits that influence their growth, physical health and intellectual development.

Nutrition is not only based on eating healthily, its main purpose is to prevent the development of diseases such as malnutrition, which affects the development of the capacity for attention, socialization and learning, exposing schoolchildren to poor performance that leads to frustrations for not reaching the required qualification levels, generating conflicts in parents and therefore in the family, an error that is committed by not considering that the cause may be due to poor nutrition that occurs for reasons such as the lack of economic resources to provide good nutrition to their children.

Modern nutrition as a scientific discipline began in the 18th century during the "chemical revolution" in which several scientists reported studies carried out with the scientific method that allowed a better understanding of the nutritional process of the human being; Such is the case of the experiments of Lavoisier, considered "the father of nutrition", who demonstrates the bases of metabolism and evidences the existence of oxygen and the production of carbon dioxide and water in animal tissues.

As mentioned by Patiño S, (2005), nutritional food education promotes the participation of the entire population to take care of their own health and nutrition, with the participation of the population in these programs being of vital importance.

The objective of this research is to analyze how childhood malnutrition influences the academic performance of seventh grade students at the Manuel Cedeño elementary school in the Maluco community. To do so, it is necessary to observe whether there is childhood malnutrition in students, diagnose whether childhood malnutrition affects the academic performance of students and finally establish, based on the perception of teachers, the relationship that exists between childhood malnutrition and the academic performance of seventh grade students.

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The importance of adequate nutrition in academic performance has been a topic of growing interest in the scientific community. This article seeks to synthesize the existing evidence on how nutrition can influence the performance of seventh grade students. The benefit of breakfast on intellectual performance and nutritional balance intervenes, not only at school age, but also in adulthood and old age. It has been suggested that breakfast consumption influences school performance through metabolic and neurohormonal changes in long-term nutritional and health status.

The relationship between nutrition and academic performance of students is a topic of great relevance. Adequate nutrition plays a crucial role in the physical and cognitive development of children and adolescents and can significantly influence their academic performance. Below are some ways in which nutrition can affect the academic performance of seventh grade students:

1. Diet quality and academic performance: Studies such as Benton's (2010) have shown that a diet rich in fruits, vegetables, whole grains and lean proteins is associated with better academic performance in students of all ages.

2. Breakfast and academic performance: Research by Rampersaud et al. (2005) shows that students who eat breakfast regularly tend to have better memory, attention and concentration skills, which translates into higher academic performance.

3. Specific Nutrient Intake: Studies such as Haapala et al. (2017) have found that adequate intake of omega-3 fatty acids, iron, zinc, and B vitamins is associated with improved cognitive and academic performance in students.

4. Effects on Attention and Memory: Research such as Alvarez-Bueno et al. (2017) has shown that a balanced diet can improve students' attention and memory, which is reflected in better long-term academic performance.

5. Impact on Mood: Studies such as Jacka et al. (2017) have found an association between an unhealthy diet and an increased risk of mood disorders, which can negatively impact academic performance.

It is critical that educators, parents, and the community at large work together to encourage healthy eating habits in students. This includes providing nutritious meal options in schools, educating about the importance of a balanced diet, and encouraging a healthy lifestyle that benefits both the physical development and academic performance of seventh grade students.

METHODOLOGICAL DESIGN

This research is qualitative and quantitative in nature, the data obtained are a social value linked to the educational field, which seeks to understand social phenomena by the impact of nutrition on academic performance. The process of science is dialectical; information will be collected that will be analyzed to determine optimal results. It is also within the quantitative paradigm because it seeks the causes of the facts it studies to be clear about the reality that affects the educational process of children.

The analytical method was used to reach a result by analyzing questions and answers and to represent it quantitatively through a bar chart that will allow us to demonstrate the reality of our research. The instruments used were the survey for students and teachers, which consists of obtaining information using questionnaires designed to obtain specific information. Twenty students will be investigated, which is the total population of the basic year under study, six teachers of the educational institution who are those who work within the educational institution.

The project has the authorization and permission for the development of the research, which facilitated the work carried out. It is an applicable project because it was possible to demonstrate the problem in the institution and make possible recommendations that will allow contributing to the benefit of the educational community. After the data collection process, the database was created in the Microsoft Excel program, a computer tool that allowed and facilitated the creation of tables and statistical graphs with the respective analysis and interpretation of each of the results.

ANALYSIS AND DISCUSSION

According to the data obtained through the surveys that were validated by the expert criteria of teachers from the extension of the Universidad Laica Eloy Alfaro de Manabí, the same ones that when applied to students and teachers are reliable and contributed to the study obtaining the necessary depth. The results obtained are divided into two criteria, on the one hand the criteria of the students and on the other hand that of the teachers.

Table#1

Would you recommend that any nutrition training be provided in schools?

Alternativa	Cantidad Fa	Fa %
Sí	16	100%
No	0	0%
Total	16	100%

Source: Manuel Cedeño Elementary School Students.

In the survey that was conducted with students, all of them, which is 16 children with 100%, consider that training on nutrition in schools is appropriate, and in this way, students can differentiate what is healthier to consume and that it helps them to have a good

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learning in the development of their academic activities.

Table#2

What diseases or disorders have you observed in children that are related to nutrition?

Alternativa	Cantidad Fa	Fa %
Anemia	3	50%
Obesidad	0	0%
Enfermedades gastrointestinales	2	33%
Otros	1	17%
Total	6	100%

Source: Manuel Cedeño Elementary School Students.

50% of the respondents mentioned that children have anemia, 33% have gastrointestinal diseases, 17% have other diseases such as vomiting or diarrhea, and no results were obtained for obesity.

If many respondents have anemia problems, it is necessary to analyze or conduct a study of why this disease occurs in students, another cause being gastrointestinal diseases, surely due to their diet; students should know adequate ways of a good diet to prevent these diseases. Teachers mention that an alternative solution is to have parents monitor food and conduct campaigns to improve nutrition in children, consequently their health status and academic performance will be optimal.

Thus, from the analysis of the results in the present investigation it has been detected that the students of the seventh year of the Manuel Cedeño elementary school have a little lack of knowledge regarding nutrition, for this reason, among the questions with the greatest representation it is indicated that there should be training on nutrition in schools and thus improve academic performance.

According to Loo-Pinargote & Vallejo-Valdivieso (2022), Ecuador faces two scenarios: malnutrition and overeating. The first is caused by a nutritional or psychoaffective deficiency or when a disease that determines it occurs; and excessive eating that manifests itself in overweight and obesity.

On the other hand, to acquire a healthy diet, a good breakfast must be considered as an essential food quality for the positive association that strongly influences the academic performance of the child population Burrows et al. (2017). Therefore, to improve the excessive consumption of unhealthy foods, inputs such as macro and micronutrients must be implemented, as they help prevent chronic diseases and correct bad eating habits, in such a way that it influences the majority of students' averages having a little-considered standard by which it prevents the cognitive progress of their learning, which agrees with the postulates of Reyes Narvaez & Canto (2020).

Therefore, good nutrition helps to keep the learning attention capacities awake Fasce H, et al. (2016), and it is essential to keep in mind that it is not only about habits or culture, but also about economic resources to be able to acquire the products and foods necessary to promote a nutritional diet in accordance with what is necessary to be healthy.

Regarding food culture, it is necessary to deepen citizen training in this sense, because even if families have few resources, they must be used to acquire food in order to optimize effective learning, being pertinent to take into account the position of Rodríguez-Escobar et al. (2015), who in their study corroborate the coexistence of malnutrition and obesity in the study area, there being a significant relationship between the greater number of days of general and sick absenteeism with growth retardation and overweight in schoolchildren.

Consequently, ineffective nutrition can increase school absenteeism, taking into account that women tend to have greater initiative to choose to consume foods with higher nutritional value than men Gimeno Tena & Esteve Clavero (2021), this allows to show that an adequate nutritional training plan must indeed be included in educational plans, which must be accompanied by the cooperation of the feeding plans proposed by the State in order to significantly support the issue of child and school malnutrition in Ecuador raised by (UNICEF, 2021).

CONCLUSIONS

The evidence reviewed suggests that a healthy diet, including a variety of nutrients and a balanced breakfast, can have a positive impact on students' academic performance. Further research is needed to better understand the underlying mechanisms and design effective interventions in educational settings.

Nutrition is much more than just eating, it is a complex process in which multiple factors impact the person physically and cognitively and, consequently, our development in various aspects of our lives, in which we highlight academic performance, since it will be more beneficial to the extent that we follow dietary recommendations, not only in order to have a better performance in terms of studies but also to prevent the different eating disorders that a lack of healthy dietary habits generate, in that sense, promoting with trained professionals an awareness of healthy eating behaviors according to the socioeconomic environments in

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which students are found is recommended and a priority in order to spread its importance and association with the well-being of people, which will be enhanced if other healthy habits such as physical exercise are followed.

RECOMMENDATIONS

As parents, we must set an example by creating good eating habits to enjoy good health. To do this, it is necessary to implement training through talks or workshops on proper nutrition for parents, students, and managers to improve children's nutrition and the good physical, intellectual, and emotional development of children. This will make junk food disappear, which only brings diseases, directly affecting the student population.

Search for strategies to improve academic performance by providing information to parents about the benefit of a good, balanced diet and the nutritional contribution that different products provide to children in their growth, intellectual development, and comprehensive training, reaching maximum grade scales, i.e. "Masters the required learning."

REFERENCES

- 1) Álvarez-Bueno, C., Cuenca-García, M., Ruiz, J., Ortega, F., Martínez-Vizcaíno, V., & Gil, A. (2017). Association of physical activity and fitness with attention-deficit/hyperactivity disorder symptoms in youth: A cross-sectional study. *Journal of Pediatrics*, 187, 214-221.
- 2) Benton, D. (2010). The influence of children's diet on their cognition and behavior. *European Journal of Nutrition*, 49(2), 241-255.
- 3) Burrows, J., Duparc, S., Gutteridge, W., Hooft van Huijsduijnen, R., Kaszubska, W., Macintyre, F., . . . Wells, T. (2017). New developments in the profiles of candidates and products targeting the disease. *Malaria Journal*, 16. <https://doi.org/https://doi.org/10.1186/s12936-016-1675-x>
- 4) Fasce H, E., Ortega B., J., Ibáñez G., P., Márquez U., C., Pérez V., C., Bustamante D., C., . . . Espinoza P., C. (2016). Motivational aspects involved in self-directed learning in medical students. A qualitative approach. *Revista Médica de Chile*, 144(5), 664-670. <https://doi.org/https://dx.doi.org/10.4067/S0034-98872016000500016>
- 5) Gimeno Tena, A., & Esteve Clavero, A. (2021). Relationship between healthy habits and academic performance in students at the Universitat Jaume I. *Clinical Nutrition and Hospital Dietetics*, 41(2), 99-106. <https://doi.org/https://doi.org/10.12873/412gimeno>
- 6) Haapala, E., Eloranta, A., Venäläinen, T., Schwab, U., Lindi, V., & Lakka, T. (2017). Associations of diet quality with cognition in children—The Physical Activity and Nutrition in Children Study. *British Journal of Nutrition*, 117(12), 1-9.
- 7) Jacka, F., O'Neil, A., Opie, R., Itsiopoulos, C., Cotton, S., Mohebbi, M., . . . Berk, M. (2017). A randomised controlled trial of dietary improvement for adults with major depression (the 'SMILES' trial). *BMC Medicine*, 15(1), 23.
- 8) Looor-Pinargote, G., & Vallejo-Valdivieso, P. (2022). Incidence of childhood nutrition on academic performance of students. *Electronic Journal of Education Sciences, Humanities, Arts and Fine Arts*, 5(1), 54-70. <https://doi.org/http://dx.doi.org/10.35381/e.k.v5i1.1684>
- 9) Macias M, A., Gordillo S, L., & Camacho R., E. (September 2012). Eating habits of school-aged children and the role of health education. *Chilean Journal of Nutrition*, 39(3), 40-43. <https://doi.org/http://dx.doi.org/10.4067/S0717-75182012000300006>
- 10) Patiño S, E. (2005). Nutritional education and participation; keys to success in community nutrition. *Venezuelan Annals of Nutrition*, 18(1), 134-137. https://doi.org/http://ve.scielo.org/scielo.php?script=sci_arttext&pid=S0798-07522005000100024
- 11) Rampersaud, G., Pereira, M., Girard, B., Adams, J., & Metz, J. (2005). Breakfast habits, nutritional status, body weight, and academic performance in children and adolescents. *Journal of the American Dietetic Association*, 105(5), 743-760.
- 12) Reyes Narvaez, S., & Canto, M. (2020). Knowledge about healthy eating in students of a public university. *Chilean Journal of Nutrition*, 47(1), 67-72. <https://doi.org/https://dx.doi.org/10.4067/S0717-75182020000100067>
- 13) Santos Holguín, S., & Barros Rivera, S. (2022). Influence of Nutritional Status on Academic Performance in an educational institution. *Vive Revista de Salud*, 5(13). <https://doi.org/https://doi.org/10.33996/revistavive.v5i13.138>
- 14) UNICEF. (2021). UNICEF Annual Report 2021. <https://doi.org/https://www.unicef.org/en/reports/unicef-annual-report-2021>