Journal of Educational Research: Shiksha Shastra Saurabh
Journal homepage: www.ksc.edu.np/ksc-publication-details/9

A Systematic Review on Dietary Pattern and Academic Performance of Children and Adolescents

Bishnu Kumar Adhikari[1], Prakash Sharma[2] and **Surendra Giri[3]**
[1]PhD Scholar, Graduate School of Education, Tribhuvan University, Kirtipur
[2]Department of Education, Butwal Multiple Campus, Butwal
[3]Health and Population Education Department, Tribhuvan University, Kirtipur
Bishnu Kumar Adhikari: ORCID*: 0009-0009-7956-6747,* sheshnathpra@gmail.com
Prakash Sharma: ORCID: 0000-0002-7197-4502, Email: prakasharma35@gmail.com
Surendra Giri: ORCID: 0009-0008-5167-4079, Email: surendra.giri2010@gmail.com

Abstract

Dietary patterns significantly impact on academic performance of children and adolescent, which is a growing area of research. A systematic search of electronic databases was conducted to identify studies examining the association between dietary intake and academic performance. A total 14 studies met the inclusion criteria. The purpose of this systematic review was to identify the dietary patterns and academic performance of children and adolescents as well as its related factors. Data were collected from published articles using a systematic literature review approach. Articles were searched from scholar.google.com, eric.ed.gov, pubmed.com, sematicscholar.com, and Elicit.com using the key words. Out of 120 identified full-text papers, irrelevant articles were excluded. Only English articles focusing on dietary pattern and academic performance were included. The final selection comprised 14 articles. Among them, 21.42% studies were related to healthy home food environment (HFE) and breakfast consumption and remaining 21%, 21%, 14.28%,14.28% and 7.14% were related with processed food and energy dense diet, poverty and life style, Mediterranean diet, balance diet with fruits and vegetables and inflammatory and anti-inflammatory diet respectively. The average age groups of participants in the reviewed studies was 13 years with an age range from 4 to 22 years. The study showed that most studies were cross-sectional (78.57%), followed by longitudinal (14.28%), and systematic review (7.14%). The findings suggest a positive

Article Info/ Article History

OPEN ACCESS

Received: September 4, 2025
Revised: October 5, 2025
Accepted: December 8, 2025
Published: December 25, 2025
DOI: https://.doi.org/10.3126/sss.v25i1.90503

association between dietary intake and academic outcome. The study concluded that dietary patterns significantly impact the academic performance of children and adolescents. A balanced diet including fruits and vegetables, as well as Mediterranean diet may enhance cognitive function and academic achievements. In addition, a healthy home food environment (HFE), and other factors also play an crucial role in shaping academic performance.

Keywords: *Academic performance, Adolescent, Children, Dietary pattern*

Introduction

The body of children requires adequate nutrients, which are obtained through diet or foods. The foods sometimes can either be good or bad for us (Adhikari et al., 2024). Dietary pattern is the combination of foods and beverages that comprise their total intake over time. The foods that people eat have a big influence on their health. Eating a nutritious diet can help people achieve and maintain good health and reduce their risk of chronic illnesses at any stage of life (Stoody et al., 2020). Academic success and intelligence are usually related. Intelligence is one trait that controls both environmental and genetic factors.

Although cognitive abilities are usually attributed to genetic factors, environmental factors also play a role in their development and stability (Chikwere, 2019). A healthy diet pattern can affect academic performance by enhancing brain function, promoting better behavior, and yielding positive school outcomes. Dietary factors like the amount of fruits and vegetables consumed, the consumption of discretionary foods and/or beverages, or the overall quality of the diet are generally associated with school-valued outcomes (Chan et al., 2017).

Contradictorily, as of right now, there is no solid proof that eating breakfast and which dietary intake improves academic performance. Recently, the Fresh Fruit and Vegetable Program was expanded to at-risk schools in most of the country to increase students' intake of fruits and vegetables. Even the use of multivitamin supplements to enhance school-age children's diets showed no correlation to improved academic performance (Woodhouse et al., 2012). Therefore, the reviewed literature showed that a clear causal link between dietary intake and academic achievement of children and adolescents has not yet been established.

Another study also revealed that school children's learning is significantly impacted by undernutrition. School-age children's dietary intake affects their health, cognitive function, and ultimately their academic performance. Inadequate nutrition and poor health in school-age children can hinder their cognitive development by lowering their capacity

to participate in learning activities or by causing physiological changes, or both (Zenebe et al., 2018). However, several studies have revealed that eating breakfast is the most frequently reported nutritional factors linked to academic success (Burrows et al., 2017; Cohen et al., 2016; Hoyland et al., 2009). Overall, the results suggest that there may be a connection between diet and academic success, with the majority of studies relating more nutrient-dense diets to higher academic achievement in college/ university students (Burrows et al., 2017).

Despite the existing literature on the association between dietary intake and academic success, a clear causal link has not been established. This study aims to carefully examine and incorporate data from earlier research to determine how different eating patterns impact academic performance of children and adolescents.

This study intended to respond to the research inquiry, 'how the variety of dietetics-behavior with breakfast eating and processing intake versus a Mediterranean Diet-might interfere with cognition within the children and adolescents. Thus, even if food products prepared using many ingredients can sometimes impede school achievements because they contain some percentage of energy, proper nutritional meal behavior-the child which constitute plenty of fruits and vegetables-contribute positively towards successful achievement in study.

Methods

A systematic literature search was conducted from different databases. Articles were extracted from scholar.google.com, Pubmed.com, eric.ed.gov, Elicit.com, sematicscholar.com to identify related studies published between 2015 to 2025. The search was performed from January 15 to February 16, 2025, using predefined key words. They were ‘dietary pattern’, ‘diet quality’, ‘academic performance’. ‘School children’, and ‘adolescents. From this process approximately 150 full text papers were initially identified. Among them, irrelevant papers were excluded. These studies were assessed on the basis of information provided in their title, abstract and description. Only the studies published in English and focusing on dietary pattern and academic performance of children and adolescents were considered. After screening 14 studies, met the inclusion criteria, which were included in the final review. Other relevant literatures were utilized to analyze and discuss the situation of the topic. Selected articles and result of them were examined and synthesized in sub headings through thematic analysis.

Inclusion and Exclusion Criteria

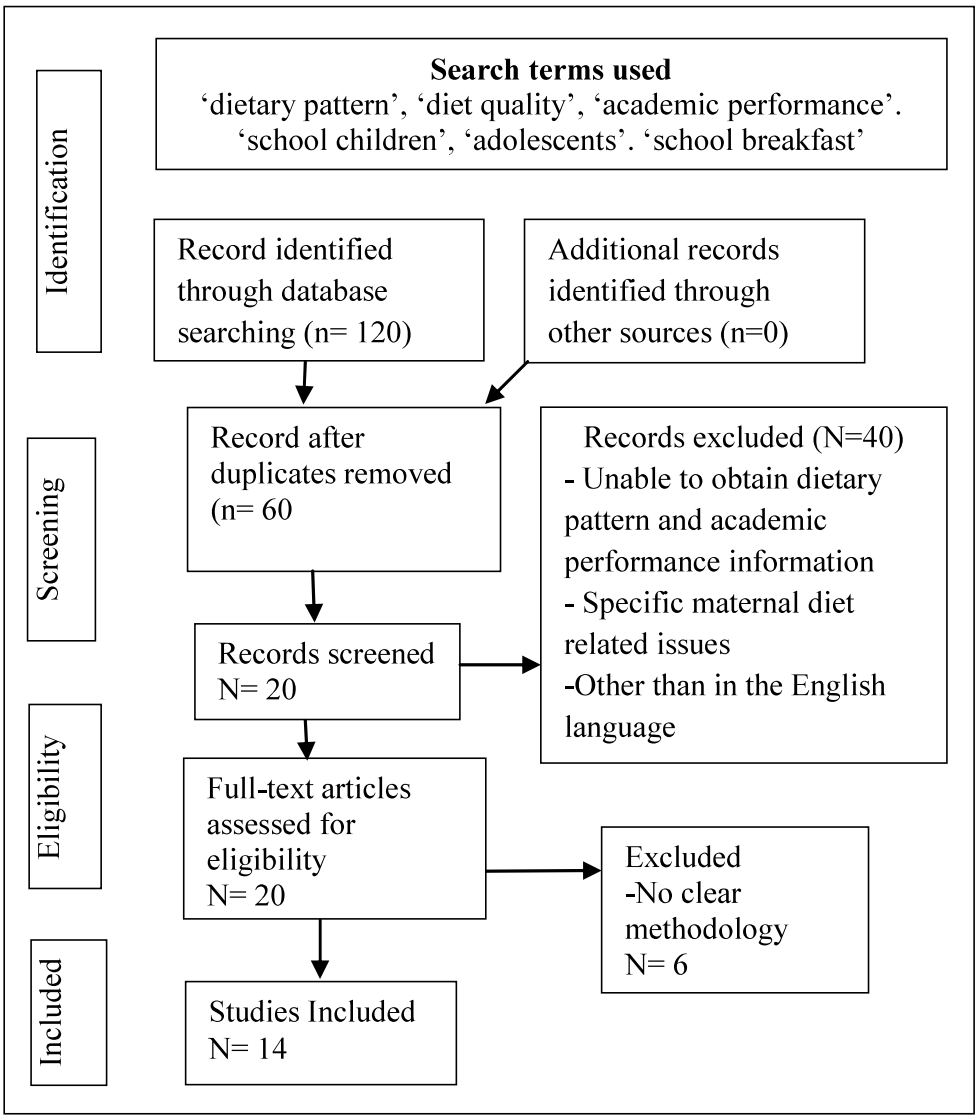
The studies published in English, focusing on dietary patterns and academic performance, employing a clear methodology were included. Similarly, if they lacked a clear methodology, did not examine dietary patterns in relation with academic performance, focused on maternal diet related issues, published in other than English language were excluded in this study.

Selection Process

A PRISMA flow diagram was applied to illustrate the study selection process. First of all, a total 120 full-text articles were retrieved from electronic databases including scholar.google.com, Pubmed.com, eric.ed.gov, Elicit.com, sematicscholar.com. After removing duplicate records, 60 unique studies remained for screening.

During the screening phase, 40 articles were removed based on title and abstract screening because they did not focus on dietary patterns and academic performance. They were published in languages other than English, or contained content pertaining to maternal diet. During the eligibility phase, 20 full-text articles were assessed for methodological soundness and applicability. Six of these articles were rejected due to unclear methodology. At the end, 14 studies that met the inclusion criteria were included in the systematic review. These studies were analyzed and categorized thematically based on the ways in which diet affects academic performance. The PRISMA flow diagram provides a visual representation of this methodical selection process, which are presented in figure 1.

Figure 1. *PRISMA Flow Diagram of the Study*



Results and Discussion

The available studies were examined to summarize eating meal pattern associated with energy intake, fruit and vegetable intake dietary patterns and overall diet in children and adolescents. The majority of the reviewed studies were cross-sectional (78.57%) and longitudinal (14.28%) and following were systematic review (7.14%). Overall findings suggested a positive association between the frequency of good dietary intake and academic outcome. Fourteen studies met the criteria for inclusion in this review. The 14 studies reviewed different aspects of dietary patterns and academic performance of children and adolescents. Mainly the aims of them were to identify the dietary patterns

and academic performance of children and adolescents as well as its related factors. The detail results of the systematic review are presented in table 1.

Table 1. *Dietary pattern and academic performance of the record*

Author/year	Title	Method	Sample size/ age group	Result /Findings
(Esteban-Cornejo et al., 2018)	Dietary inflammatory index and academic performance in children	Cross-sectional study	277 /aged 11·56 (SD 0·86) years	Adhering to a more anti-inflammatory diet (fresh fruits and vegetables, fish, whole grains, and fats) can improve academic performance because the inflammatory diet (white breads, cereals, white pasta, and other products made with refined flours and white rice) may have a negative impact.
(Lopez-Gil et al., 2024)	Is higher adherence to the Mediterranean diet associated with greater academic performance in children and adolescents? A systematic review and meta-analysis	A systematic review and meta-analysis	9691 (16 studies)/ aged 6-18 years	Overall, the result showed that children and adolescents who followed the Mediterranean Diet (Med Diet) more closely did better academic achievement. Similarly high adherence to the Med Diet is associated with greater working memory scores and cognitive strategies (e.g., organization and critical thinking
(Pearce et al., 2018)	The Apples of Academic Performance: Associations Between Dietary Patterns and Academic Performance in Australian Children	Cross-sectional study	315 /aged 9-11years	Academic performance was not linked to a nutritious diet, but it was negatively correlated with an energy-dense, nutrient-poor diet.
(Pena-Jorquera et al., 2024)	Adolescents with a Favorable Mediterranean-Style-Based Pattern Show Higher Cognitive and	Cross-sectional	1296/ aged10–14 years.	The Mediterranean diet group performed better in all domains than the low fruit and vegetables, high-sugar diet (LFV-HSD), low fruit and vegetables,

	Academic Achievement: A Cluster Analysis—The Cogni-Action Project			low-sugar diet (LFV-LSD. While the Med Diet was associated with improved cognitive and academic performance ($p < 0.05$).
(Sohail et al., 2024)	The Influence of the Home Food Environment on the Eating Behaviors, Family Meals, and Academic Achievement of Adolescents in Schools in the UAE	Cross-sectional study	304/ aged12- 18 years	Results underscore the critical role of a healthy home food environment (HFE) in shaping healthy positive eating behaviors and food choices among adolescents. Likewise, those who excelled academically were more likely to have a high HFE score.
(Hair et al., 2015)	Association of Child Poverty, Brain Development, and Academic Achievement	Longitudinal cohort study	823/ aged 4 to 22 years	Children who live in poverty typically have lower educational attainment and significantly lower standardized test scores, which reflect their poor academic performance. These trends continue into adulthood, which lowers occupational attainment over the course of a lifetime.
(Payne-Sturges et al., 2018)	Student hunger on campus: Food insecurity among college students and implications for academic institutions	Cross-sectional survey.	237/ aged18 year	Food insecure students reported lower academic achievement is consistent with prior campus-based studies.
(Adelantado-Renau et al., 2019)	Independent and combined influence of healthy lifestyle factors on academic performance in adolescents: DADOS Study	3-year longitudinal study	262/aged (13.9±0.3 years	Eating at the right frequency had a positive, independent impact on academic achievement. Additionally, teenagers who maintained at least three healthy lifestyles(not being overweight, limiting screen time, and getting enough sleep) were more likely to be in the high-performance group for grades
(Kim et al.,	Dietary Habits Are	Cross-sectional	359,264	Eating three times a day,

2016)	Associated With School Performance in Adolescents		Web-based Survey/ Aged 12 to 18 yrs	especially breakfast, and regularly consuming fresh fruits, vegetables, and milk were associated with good academic performance. However, eating a variety of processed foods, such as soft drinks, instant noodles, fast food were linked to poor academic performance.
(Rajan Jr et al., 2024)	Relation of Dietary Practices and Academic Achievement Among School-Going Children in Kattankulathur Block, Chengalpattu District, Tamil Nadu	Cross-sectional study	262/ Aged 11-16 years	Higher academic achievement was found to be significantly correlated with balanced dietary practices, which include regular consumption of fruits and vegetables. Research indicates that 24.8% of students perform exceptionally well in school, 88.2% of students eat three regular meals a day, and 88.9% of students regularly eat breakfast.
(Beressa et al., 2024)	Association between dietary diversity, nutritional status, and academic performance of school-age children in Southeast Ethiopia using structural equation modelling	School-based cross-sectional	395/aged 10 to 14 years	A child's dietary diversity score (DDS) had no direct, indirect, or total effect on academic achievement.
(Barg et al., 2023)	Dietary patterns and cognitive achievement among school children in socio-cultural context, a case of Montevideo, Uruguay	Cross-sectional s	270/ 6.75years (mean age of 81 months)	Increased consumption of dark green and red-orange vegetables, eggs, beans and peas, and potatoes was associated with a higher reading proficiency. There was no correlation between reduced consumption of milk, pastries, and pizza dinners and cognitive function.

(Mualem et al., 2023)	The effect of dietary preferences on academic performance among kindergarten-aged children	Quantitative	68 / aged 5-6 years	A high-fiber diet has improved brain electrophysiology and cognitive function, as evidenced by increased efficacy and efficiency in resolving cognitive difficulties. The health and cognitive development of the children are significantly impacted by plant-based diets. Eating a processed diet might make learning more difficult.
(Martin et al., 2024)	A healthy breakfast each and every day is important for students' motivation and achievement	Descriptive study	648 / Mean aged 13.52 years (SD =0.98)	Healthy breakfasts have long been linked to better cognitive and academic performance. Regularly eating a healthy breakfast has also been shown to have a positive impact on students' academic motivation and achievement in the home and in the classroom.

Table 1 showed in the dietary pattern and academic performance, most of the study (21.42%) were related with healthy home food environment (HFE)and breakfast consumption and following 21%, 21%, 14.28%,14.28% and 7.14% were related with processed food and energy dense diet, poverty and life style, Mediterranean diet, balance diet with fruits and vegetables and inflammatory and anti-inflammatory diet respectively. Similarly, the average age groups of reviewed studies were 13 years' ranges from 4 to 22 years.

Regarding the research design, out of 14 studies 11 studies used cross-sectional study design, two studies used longitudinal study design and remaining studies used systematic review in this study. It has been suggested that a long-term study is required to determine the relationship between dietary consumption and academic achievement. Among the total (374112), maximum sample was 359,264 (web-based survey) and minimum sample size was 68 in this reviewed study. Therefore, it appears that a longitudinal study with a suitable sample size is required to determine the connection between dietary patterns and academic performance of children's and adolescents.

This comparative engagement strengthens the academic value of the research and demonstrates the researcher's understanding of the field. In qualitative studies, the discussion often highlights participants' voices while interpreting their experiences through relevant theoretical lenses.

Moreover, the discussion emphasizes the significance of the findings by explaining their implications for educational practice, policy, and future research. For studies focusing on teachers, this includes reflecting on how the findings may inform professional development, classroom practices, or institutional support mechanisms. The discussion also acknowledges contextual factors and limitations that may have influenced the findings, ensuring transparency and credibility. In this study, the discussion section aims to provide a meaningful interpretation of the findings by situating them within the theoretical framework and relevant literature, thereby offering deeper insights into the research problem and its practical and academic implications.

Diet and Academic Performance

This systematic review identified the different types of diet in relation to academic performance, which includes the inflammatory and anti-inflammatory died, processed foods and energy dense diet, Mediterranean diet and balance diet. They are described here:

Inflammatory and Anti-inflammatory Died. According to our reviewed studies, eating inflammatory foods like white breads, cereals, white pasta, and other refined-flour products, along with white rice, may have a negative effect on academic performance. To improve academic performance, people should follow a more anti-inflammatory diet that includes fresh fruits and vegetables, fish, whole grains, and fats (Esteban-Cornejo et al., 2018). To support this finding, a study revealed that the nature of inflammatory drug/diet is complex and danger for normal physiology. It is used for chronic inflammatory diseases that may lower the levels or actions of the tissue and decrease memory for learning (Tabas & Glass, 2013). This suggests that the negative consequences of inflammatory diets may affect long-term cognitive development in academic performance, highlighting the significance of dietary interventions during crucial phases of brain maturation.

Processed foods and Energy Dense Diet. Our review reported that academic performance was not linked to a nutritious diet, but it was negatively correlated with an energy-dense, nutrient-poor diet (Pearce et al., 2018). Similarly, this review also revealed that eating three times per day without skipping meals, especially breakfast, and frequent

intakes of fresh fruits, vegetables, and milk were related to good school performance. However, consuming several processed foods such as soft drinks, instant noodles, fast foods, and eating confections more than seven times a week showed correlations with poor school performance (Kim et al., 2016).

In the same way, a high-fiber diet has improved brain electrophysiology and cognitive function. The cognitive development of the children is significantly impacted by plant-based diets. Eating a processed diet might make learning more difficult (Mualem et al., 2023). In relation to processed food and energy dense dietary intake, a study concluded that high dense sugar-sweetened beverage (SSB) consumption was associated with lower academic performance in English Z-score outcome in children and adolescent aged 2-18 years (Haftoglou, 2015). This finding suggested a growing issue where children's poor eating behaviors impact both their academic performance and their risk of chronic illnesses, which may eventually worsen cognitive abilities.

Mediterranean Diet. Overall, results of this study showed that academic performance was higher for children and teenagers who followed the Mediterranean Diet (vegetables and tubers, Fruits, Grains, Nuts, seeds and legumes) more closely. In a similar vein, greater Med Diet adherence is associated with higher working memory scores and cognitive strategies/critical thinking (López-Gil et al., 2024). In the same way, our next study reported that the Mediterranean diet group performed better in all domains than the low fruit and vegetables, high-sugar diet (LFV-HSD), low fruit and vegetables, low-sugar diet (LFV-LSD. While the Med Diet was associated with improved cognitive and academic performance ($p < 0.05$) (Peña-Jorquera et al., 2024). This statement supported that enhancing cognitive function requires a Mediterranean diet rich in foods high in anti-inflammatory and antioxidant compounds. Additionally, the nutrients found in the Mediterranean diet may help ensure that the brain receives the right number of essential micronutrients.

Balanced Diet with fruits and vegetables. This review found that, higher academic proficiency was linked to increased consumption of potatoes, eggs, beans and peas, and dark green and red-orange vegetables. Reduced intake of milk, pastries, and pizza dinners did not correlate with improved cognitive function (Barg et al., 2023). Similarly, a study found that, fast food, sausages, and soft drinks have been linked to poor cognitive function and academic performance. Heavy diets are also associated with overweight and obesity, which are linked to decreased cognitive abilities and academic achievement in children and adolescents (Naveed et al., 2020). Contradictorily, one of our studies

claimed that the dietary diversity score (DDS) of a child had no effect on academic performance, either directly or indirectly (Beressa et al., 2024).

This result indicated that particularly the micronutrient intake can impact on cognitive development in various socio-cultural context. Even though, the more research is required to determine the link of dietary intake on academic achievement.

Healthy Home Food Environment and Breakfast

Regarding the healthy home food environment (HFE), the findings of our study indicated that high academic achievers were more likely to have a favorable HFE score (Sohail et al., 2024). In addition, our study found that, Better academic and cognitive performance has long been associated with eating a healthy breakfast. Eating a nutritious breakfast on a regular basis has also been demonstrated to improve students' academic motivation and performance both at home and in the classroom (Martin et al., 2024).

Regarding the breakfast, it has been discovered that, 88.2% of students eat three regular meals a day, 88.9% of students regularly eat breakfast, where, 24.8% of students perform exceptionally well in school (Rajan Jr et al., 2024). In this scenario, a study concluded that the food environment that young children are exposed to at home and at school affects the quality of their diet; greater diet quality is associated with having access to more food outlets in general (Barrett et al., 2017).

This quotation suggested that the broader environment (both at home and in school) has a critical role in shaping children's dietary behaviors and, consequently, their academic performance. Additionally, the quality of the food environment could be a crucial for improving children's cognitive outcomes.

Poverty and Life Style

According to the studies we reviewed, children who live in poverty tend to perform poorly academically, as evidenced by their lower educational attainment and noticeably lower standardized test scores. These patterns persist into adulthood, resulting in a lifetime decline in occupational attainment (Hair et al., 2015). Eating at the right frequency had a positive effect on academic performance. Teens who led at least three healthy lifestyles (avoiding obesity, limiting screen time, and getting enough sleep) were also more likely to be in the high-performance group for grades (Adelantado-Renau et al., 2019). While the students who experience food insecurity report lower academic achievement, which is consistent with previous campus-based studies (Payne-Sturges et al., 2018).

From this statement we can say that the poverty or food insecurity and life style are crucial to academic performance of children and adolescents. A study also concluded that poverty or food insecurity may affect students more frequently and with more severe symptoms in lower-income areas. The connection between food insecurity and academic performance may have significant ramifications if it ultimately affects student retention and graduation rates (Maroto et al., 2015). These results showed that socioeconomic differences, such as limited access to nutritious food and educational opportunities, make food insecurity worse. These disparities highlight the need for comprehensive interventions that address broader educational and social inequalities in addition to nutritional support.

Population to suffer from food insecurity may be more common and more severe among the students in lower-income areas. The possible relationship between food insecurity and student academic performance could have far-reaching consequences if this is a factor that ultimately affects student retention and graduation rates. Therefore, in order to determine the best strategies for alleviating the negative effects of food insecurity on educational achievement, additional research should investigate these relationships more thoroughly.

Conclusion

This systematic review concluded that dietary pattern had the significant impact on academic performance of children and adolescents. Improved cognitive and academic performance is associated with a well-balanced, fruit-and vegetable-rich Mediterranean diet. Healthy home food environment (HFE), processed food and energy dense died, poverty and life style might be the considerable factors for improving academic performance of children and adolescents. Even though, this may be linked with increased attendance, reduced absenteeism etc. Therefore, further long-term research is needed to examine the connection between eating patterns and academic performance.

References

Adelantado-Renau, M., Jiménez-Pavón, D., Beltran-Valls, M. R., & Moliner-Urdiales, D. (2019, 2019/03/01). Independent and combined influence of healthy lifestyle factors on academic performance in adolescents: DADOS Study. *Pediatric Research*, 85(4), 456-462. https://doi.org/10.1038/s41390-019-0285-z

Adhikari, B. K., Giri, S., & Sharma, P. (2024). Evaluation of Childhood Dietary Patterns and Their Impact on Nutrition Status: A Literature Review. *International Journal*, 13(3), 66-76. https://doi.org/10.11648/j.ijnfs.20241303.12

Barg, G., Frndak, S., Queirolo, E. I., Peregalli, F., & Kordas, K. (2023). Dietary patterns and cognitive achievement among school children in socio-cultural context, a case of Montevideo, Uruguay. *European journal of nutrition*, 62(6), 2475-2488. https://doi.org/10.1007/s00394-023-03167-z.

Barrett, M., Crozier, S., Lewis, D., Godfrey, K., Robinson, S., Cooper, C., Inskip, H., Baird, J., & Vogel, C. (2017). Greater access to healthy food outlets in the home and school environment is associated with better dietary quality in young children. *Public Health Nutrition*, 20(18), 3316-3325. https://doi.org/10.1017/ S1368980017002075

Beressa, G., Biratu, A., Lencha, B., Sahiledengle, B., Zenbaba, D., Bekele, D., Tekalegn, Y., & Beressa, K. (2024, 2024/11/18). Association between dietary diversity, nutritional status, and academic performance of school-age children in Southeast Ethiopia using structural equation modelling. *Journal of Health, Population and Nutrition*, 43(1), 188. https://doi.org/10.1186/s41043-024-00687-0

Burrows, T. L., Whatnall, M. C., Patterson, A. J., & Hutchesson, M. J. (2017). Associations between dietary intake and academic achievement in college students: a systematic review. *Healthcare,* 5(4), 60. https://doi.org/10.3390/healthcare5040060

Chan, H., Knight, C., & Nicholson, M. (2017). Association between dietary intake and 'school-valued'outcomes: a scoping review. *Health Education Research*, 32(1), 48-57. https://doi.org/10.1093/her/cyw057

Chikwere, P. (2019). Diet, a factor for academic performance in school-aged children: systematic review of recent studies. Nations Univ. J. Appl. *Thought,* 7, 76-90. http://anujat.anuc.edu.gh/universityjournal/anujat/Vol7/No1/6.pdf

Cohen, J. F., Gorski, M. T., Gruber, S. A., Kurdziel, L., & Rimm, E. B. (2016). The effect of healthy dietary consumption on executive cognitive functioning in children and adolescents: a systematic review. *British Journal of Nutrition*, 116(6), 989-1000. https://doi.org/10.1017/S0007114516002877

Esteban-Cornejo, I., Mota, J., Abreu, S., Pizarro, A. N., & Santos, M. P. (2018). Dietary inflammatory index and academic performance in children. *Public Health Nutrition,* 21(17), 3253-3257. https://doi.org/doi:10.1017/S1368980018001994

Haftoglou, S. (2015). *Relationship between sugar-sweetened beverage consumption and academic performance among elementary and middle school children.* University of California, Los Angeles. https://escholarship.org/uc/item/9n93f72k

Hair, N. L., Hanson, J. L., Wolfe, B. L., & Pollak, S. D. (2015). Association of child poverty, brain development, and academic achievement. *JAMA pediatrics*, 169(9), 822-829. https://doi.org/10.1001/jamapediatrics.2015.1475.

Hoyland, A., Dye, L., & Lawton, C. L. (2009). A systematic review of the effect of breakfast on the cognitive performance of children and adolescents. *Nutrition Research Reviews*, 22(2), 220-243. https://doi.org/10.1017/S0954422409990175

Kim, S. Y., Sim, S., Park, B., Kong, I. G., Kim, J.-H., & Choi, H. G. (2016). Dietary habits are associated with school performance in adolescents. *Medicine*, 95(12), e3096. https://doi.org/10.1097/MD.0000000000003096

López-Gil, J. F., Victoria-Montesinos, D., & García-Hermoso, A. (2024). Is higher adherence to the mediterranean diet associated with greater academic performance in children and

adolescents? A systematic review and meta-analysis. *Clinical Nutrition*, 43(8), 1702-1709. https://doi.org/10.1016/j.clnu.2024.05.045

Maroto, M. E., Snelling, A., & Linck, H. (2015, 2015/06/03). Food Insecurity Among Community College Students: Prevalence and Association With Grade Point Average. *Community College Journal of Research and Practice*, 39(6), 515-526. https://doi.org/10.1080/10668926.2013.850758

Martin, A. J., Bostwick, K. C., Burns, E. C., Munro-Smith, V., George, T., Kennett, R., & Pearson, J. (2024). A healthy breakfast each and every day is important for students' motivation and achievement. Journal of School Psychology, 104, 101298. https://doi.org/10.1016/j.jsp.2024.101298

Mualem, R., Jadon, N., Shance, S., Hussein Farraj, R., Mansour, R., & Cohen, S. (2023). The effect of dietary preferences on academic performance among kindergarten-aged children. *J Neurosci Neurol Surg,* 13, 277. https://doi.org/10.31579/2578-8868/277

Naveed, S., Lakka, T., & Haapala, E. A. (2020). An overview on the associations between health behaviors and brain health in children and adolescents with special reference to diet quality. *International Journal of Environmental Research and Public Health,* 17(3), 953. https://doi.org/10.3390/ijerph17030953

Payne-Sturges, D. C., Tjaden, A., Caldeira, K. M., Vincent, K. B., & Arria, A. M. (2018). Student hunger on campus: Food insecurity among college students and implications for academic institutions. *American Journal of Health Promotion*, 32(2), 349-354. https://doi.org/10.1177/0890117117719620.

Pearce, K., Golley, R., Lewis, L., Cassidy, L., Olds, T., & Maher, C. (2018). The apples of academic performance: associations between dietary patterns and academic performance in Australian children. *Journal of School Health*, 88(6), 444-452. https://doi.org/10.1111/josh.12631

Peña-Jorquera, H., Martínez-Flores, R., Espinoza-Puelles, J. P., López-Gil, J. F., Ferrari, G., Zapata-Lamana, R., Lofrano-Prado, M. C., Landaeta-Díaz, L., Cigarroa, I., & Durán-Agüero, S. (2024). Adolescents with a favorable Mediterranean-style-based pattern show higher cognitive and academic achievement: a cluster analysis—the cogni-action project. *Nutrients,* 16(5), 608. https://doi.org/10.3390/nu16050608

Rajan Jr, A., Peter, R. M., Logaraj, M., Palanivel, S. M., & Anantharaman, V. (2024). Relation of Dietary Practices and Academic Achievement Among School-Going Children in Kattankulathur Block, Chengalpattu District, Tamil Nadu. *Cureus,* 16(11). https://doi.org/10.7759/cureus.72882

Sohail, R., Hasan, H., Saqan, R., Barakji, A., Khan, A., Sadiq, F., Furany, S., AlShaikh, Z., Atef Abdelhamid Mahmoud, O., & Radwan, H. (2024). The Influence of the Home Food Environment on the Eating Behaviors, Family Meals, and Academic Achievement of Adolescents in Schools in the UAE. *International Journal of Environmental Research and Public Health*, 21(9), 1187. https://doi.org/10.3390/ijerph21091187

Stoody, E. E., Obbagy, J., Pannucci, T., Fu., S. L., Rahavi., E., Altman., J., Adler., M., Brown, S., K., & Scanlon. (2020). *Dietary Guidelines for Americans*, 2020-2025. In A. B. R. J. Fleming (Ed.). https://www.dietaryguidelines.gov/sites/ default/files/2021-03/Dietary_Guidelines_ for_Americans-2020-2025.pdf

Tabas, I., & Glass, C. K. (2013). Anti-inflammatory therapy in chronic disease: challenges and opportunities. *Science,* 339(6116), 166-172. https://doi.org/ 10.1126/science.1230720

Woodhouse, A., Lamport, P. D., & Mark, A. (2012). The relationship of food and academic performance: a preliminary examination of the factors of nutritional neuroscience, malnutrition, and diet adequacy. *Christian Perspectives in Education*, 5(1), 1. https://digitalcommons.liberty.edu/cpe/vol5/iss1/1/

Zenebe, M., Gebremedhin, S., Henry, C. J., & Regassa, N. (2018). School feeding program has resulted in improved dietary diversity, nutritional status and class attendance of school children. *Italian Journal of Pediatrics,* 44, Article 16. https://doi.org/10.1186/s13052-018-0449-1