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Analysis of the Relationship Between Nutritious Breakfast Consumption and Learning Concentration of Early Childhood

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ABSTRACT

Acceptance of nutritious food among young children is a key element in supporting optimal growth and development. This study aims to investigate children's food preferences and the impact of environmental factors on healthy eating habits using a literature review method. Data were collected by analyzing scientific articles published between 2020 and 2025 from various credible sources, using keywords such as "early childhood food preferences" and "environmental influences on children's eating habits." The analysis reveals that children's food preferences are influenced by various biological factors, such as genetics and sensory development, as well as environmental factors, including parenting practices, media exposure, and the role of educational institutions. Parents who implement healthy eating patterns and provide positive role modeling play a crucial

role in shaping children's eating habits. Meanwhile, early childhood education institutions contribute through engaging and enjoyable nutrition education programs. However, picky eating behavior remains a challenge in establishing healthy dietary patterns. Therefore, a comprehensive approach involving families, schools, and the broader community is necessary to build healthy eating habits from an early age. These findings are expected to serve as a foundation for developing effective and sustainable nutrition interventions for young children.

Introduction

Breakfast is one of the most important daily habits and plays a major role in supporting children's cognitive development in early childhood. At this stage, children's brains develop very rapidly and require sufficient energy to help them in the learning process and to maintain focus at school (Nova & Marlina, 2023). However, many children in Indonesia often skip breakfast, and this can negatively affect their ability to understand lessons.

Research by Arora shows that regular breakfast consumption can improve cognitive functions, particularly memory and concentration. Children who routinely eat breakfast demonstrate better performance in cognitive tasks compared to those who skip breakfast (Arora, 2022). In addition, a study by Liu et al. found that children who consistently consume a nutritious breakfast tend to have higher IQ scores and better academic performance. These findings emphasize the importance of

both the quality and regularity of breakfast in supporting the learning process of early childhood (Liu, 2021).

A study conducted by Luthfillah and Aryanto revealed a significant influence of breakfast on learning concentration among early childhood students at RA Roudhotut Tholibin Morobakung Gresik, with a correlation coefficient of 0.743 and a significance value of p = 0.000. This indicates that children who regularly eat breakfast have better learning concentration compared to those who do not (M. Luthfillah & Aryanto, 2022). Furthermore, research by Hastriati and Joni found that breakfast contributes 20.25% to children's ability to absorb lessons, while the remaining 79.75% is influenced by other factors such as sleep patterns, physical activity, and the learning environment (Hastriati, 2024). This study underlines that although breakfast is not the sole factor affecting learning concentration, its role remains important and should not be overlooked (Hazizah et al., 2024).

Research by Adolphus, Lawton, and Dye indicates that regular breakfast consumption has a positive impact on children's cognitive functions, particularly in the domains of memory and attention. The study highlights that children who consistently eat breakfast show improvements in cognitive tasks compared to those who skip it. Moreover, the quality of breakfast also plays a crucial role; breakfasts with a low glycemic index can provide greater cognitive benefits compared to high glycemic index breakfasts. This demonstrates that not

only the habit of eating breakfast is important, but also the type of food consumed at breakfast contributes to the enhancement of children's cognitive function (Adolphus, 2013).

In addition to cognitive aspects, breakfast consumption also affects children's academic achievement (Yuniarsih, 2021). A study by Adolphus, Lawton, and Dye in 2019 found that a higher frequency of breakfast consumption on school days is positively correlated with students' academic achievement. Children who consistently eat breakfast are more likely to achieve higher scores on examinations compared to those who rarely or never eat breakfast. These findings emphasize the importance of regular breakfast habits in supporting children's academic success (Adolphus, 2019).

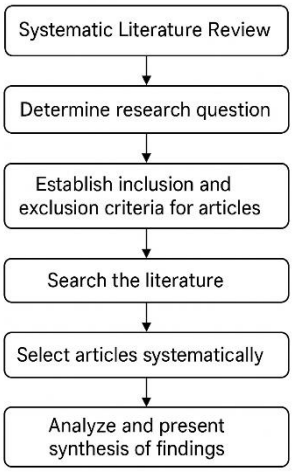
However, there are still many challenges in establishing the habit of eating breakfast among children. Factors such as parents' busy schedules, children's reluctance to eat in the morning, or a lack of understanding about the importance of breakfast can become barriers. Therefore, collaboration among parents, educators, and other stakeholders is needed to increase awareness of the importance of breakfast for children in early childhood.

This article aims to explore the relationship between nutritious breakfast consumption and learning concentration in early childhood, as well as to provide practical recommendations for parents and educators in building healthy breakfast habits in children.

Methods

The Systematic Literature Review (SLR) method is a qualitative research approach aimed at identifying, evaluating, and systematically summarizing all relevant previous studies related to a specific research question (Booth et al., 2016). According to Kitchenham and Charters, SLR is designed to reduce bias in literature studies through a clear, repeatable, and structured process, so that the results obtained become more reliable and valid. In the field of education, SLR is often used to analyze the effectiveness of teaching methods or educational tools based on existing evidence (Kitchenham & Charters, 2007). The implementation of SLR is carried out to minimize subjectivity, enhance transparency, and ensure that the review results are replicable and can serve as a basis for decision-making in early childhood education development. Therefore, the application of SLR in this study is not only intended to compile a scientific synthesis, but also to serve as a conceptual foundation in designing evidence-based learning strategies that are aligned with the developmental characteristics of children. The following is the flowchart of the Systematic Literature Review (SLR) method used by the researchers:

Figure 1. Flowchart of the Systematic Literature Review (SLR)



The explanation of the diagram above is that this study broadly examines various research findings that discuss the relationship between nutritious breakfast consumption and intensive learning among early childhood using the SLR (Systematic Literature Review) method. The SLR was conducted in several systematic stages. The first stage is a systematic literature review, which is a structured approach used objectively and transparently to collect, assess, evaluate, and integrate data from various related studies. The second stage involves formulating the research question that focuses on the main issue of this study, namely: "How does nutritious breakfast consumption influence intensive learning?"

Next, the inclusion and exclusion criteria were determined to define the boundaries of the studies included in this review. The included studies consisted of scientific publications discussing early childhood nutritious breakfast, nutritious breakfast, and intensive learning, while

studies not written in English or Indonesian, not published within the last five years, and not available in full text were excluded. The fourth stage was the literature search process, which resulted in 15 articles obtained from trusted databases such as Scopus, PubMed, ScienceDirect, and Google Scholar using keywords such as "nutritious breakfast," "infantil," "concentration," and "cognitive performance."

The fifth stage was the systematic selection of articles, where the articles were selected based on the PRISMA technique in accordance with predetermined criteria to ensure data reliability and relevance. The final stage involved analysis and synthesis. This means that the researchers presented the findings in the form of a narrative integration to thematically analyze the selected content and identify patterns, trends, and research gaps. Through these stages, the study is expected to provide a comprehensive picture of the importance of nutritious breakfast in improving intensive learning and to form a foundational basis for the development of guidelines in the fields of early childhood education and nutrition.

Result and Discussions

Based on the results of a systematic review of various relevant scientific articles, several research findings were obtained that discuss the relationship between nutritious breakfast consumption and children's focus or learning concentration. The analyzed articles include both national and international studies with subjects ranging from early

childhood to school-age children and employ diverse methodological approaches, such as correlational quantitative research, cross-sectional studies, and literature reviews. In general, the research results indicate a tendency toward a positive relationship between nutritious breakfast habits and increased concentration, learning readiness, and children's cognitive function. To provide a more systematic and comprehensive overview, a summary of the literature review results from 15 related articles is presented in the following table.

No	Researcher & Year	Research Title	Method	Main Findings	Source
1	(Nova & Marlina, 2023)	The Relationship Between Nutritious Breakfast and Children's Learning Concentration	Correlational quantitative	Children who consume a nutritious breakfast have better attention	Journal of Child Nutrition and Health
2	(Lestari, 2024)	The Relationship Between Morning Eating Patterns and Children's Learning	Quantitative correlation	r = 0.750, significant positive relationship	Universitas Pendidikan Indonesia (UPI) Repository

		Focus			
3	(R. Luthfillah & Aryanto, 2021)	The Effect of Nutritious Breakfast on Early Childhood Concentration	Quantitative	r = 0.743, p = 0.000	Journal of Childhood Education (UNISLA)
4	(M. Luthfillah & Aryanto, 2022)	Breakfast and Children's Learning Concentration	Quantitative	Strong and significant relationship	Journal of Early Childhood Education
5	(Hidayat & Nurhayati, 2021)	Breakfast Nutrition and Early Childhood Learning Readiness	Literature study	Breakfast supports cognitive function	Journal of Child Education
6	(Barokah et al., 2022)	Nutritional Factors and Children's Learning Concentration	Quantitative	Nutritional status affects learning focus	Public Health Journal
7	(Hazizah et al., 2024)	Breakfast and Students' Learning	Cross-sectional	Significant relationship ($p < 0.05$)	Indonesian Journal of Nutrition

		Concentration			
8	(Pebriana, 2017)	Breakfast Habits and Learning Concentration	Quantitative	Children who eat breakfast are more focused	Nursing and Health Journal
9	(Wulandari & Sari, 2022)	Healthy Breakfast and Children's Academic Achievement	Quantitative	Better achievement in children who eat breakfast	Journal of Basic Education
10	(Adolphus, 2013)	The Effects of Breakfast on Behavior and Academic Performance	Review	Breakfast positively affects behavior and cognition	Frontiers in Human Neuroscience
11	(Hoyland et al., 2016)	Breakfast Consumption and Cognitive Performance	Systematic Review	Breakfast improves cognitive performance	Nutrition Research Reviews
12	(Loma et al., 2021)	Breakfast Consumption and Academic	Quantitative	Breakfast influences academic achieveme	Frontiers in Psychology

		Achievement		nt	
13	(Rampersaud et al., 2005)	Breakfast Habits, Nutritional Status, and Academic Performance	Review	Breakfast improves memory and attention	Journal of the American Dietetic Association
14	(WHO, 2020)	Nutrition for School-Aged Children	Policy report	Morning nutrition is important for learning readiness	World Health Organization (WHO)
15	(UNICEF, 2021)	Early Childhood Nutrition and Learning Readiness	Global report	Nutritional interventions support learning readiness	UNICEF Report

The study conducted by Lestari (2024) at TK Yos Sudarso Purwakarta revealed a significant positive relationship between morning eating patterns and students' learning focus, with a correlation coefficient reaching 0.750. Approximately 53% of children had the habit of consuming a nutritious breakfast, while 59% demonstrated good learning concentration abilities. The foods they consumed included fried rice, nasi uduk, white rice with side dishes such as fish, chicken,

eggs, as well as vegetables, fruits, and milk (Lestari, 2024).

Research on nutritious breakfast in early childhood conducted by Luthfillah and Aryanto in 2021 at RA Roudhotut Tholibin Morobakung Gresik provides clear evidence of the importance of a healthy breakfast in improving learning concentration among young children. In this study, the researchers adopted a quantitative method with correlation analysis techniques to assess the relationship between breakfast consumption and children's classroom concentration. The statistical analysis revealed a correlation coefficient of 0.743, indicating a strong and positive relationship. This means that the more frequently children consume a nutritious breakfast, the better their concentration during classroom learning activities.

Furthermore, the obtained significance value of p = 0.000 indicates that the relationship is highly significant in statistical analysis, suggesting that the likelihood of this result occurring by chance is very small. In other words, the available data support the existence of a real relationship between breakfast habits and children's learning concentration (M. Luthfillah & Aryanto, 2022). This also shows that a simple step such as habituating children to consume a nutritious breakfast can have a significant effect on their readiness to receive lessons, especially during the golden phase of cognitive development (Hidayat & Nurhayati, 2021).

Differences in these findings may be caused by several factors, such as

the research methods used, sample sizes, and the variables controlled within each study. In addition, other factors such as nutritional status, sleep habits, and the learning environment can also influence children's concentration. Overall, these studies indicate that a healthy breakfast plays a significant role in supporting early childhood learning concentration (Barokah et al., 2022). Therefore, it is very important for parents and educators to ensure that children receive a nutritious breakfast every morning to support their learning process.

In the context of early childhood, breakfast plays a crucial role because between the ages of 3 and 6, children's brain development occurs rapidly and requires adequate energy and micronutrients such as iron, iodine, and B-complex vitamins that support brain performance (Diana et al., 2025). A deficiency in energy and nutrients, even in the short term such as when children skip breakfast, can cause disturbances in focus, memory, and problem-solving abilities. Furthermore, these findings also emphasize the important role of parents and early childhood education institutions in ensuring that children do not go to school in a hungry state. Children who skip breakfast tend to become easily tired, irritable, and have difficulty concentrating during learning activities, which can ultimately hinder their social and cognitive development.

Thus, this study provides strong evidence that the habit of consuming a nutritious breakfast needs to be promoted as part of efforts to improve the quality of early childhood education. This research is also in line

with recommendations from WHO and UNICEF, which emphasize the importance of nutritional interventions for preschool children in order to improve learning readiness and educational achievement in the long term.

Conclusion

The results of the review presented in this article indicate a strong and positive relationship between healthy breakfast consumption and concentration ability in early childhood. Children who regularly consume a nutritious breakfast generally demonstrate better ability to focus and pay attention during learning activities. Several studies have found that breakfast that meets energy needs and contains essential nutrients such as protein, vitamins, and minerals is highly important in supporting children's cognitive development during critical stages of brain growth. Although some studies did not find a significant relationship, this may be due to differences in research methods, subject characteristics, or other uncontrolled factors. However, overall, the reviewed sources affirm the importance of healthy breakfast habits in preparing young children for learning. Therefore, collaboration among parents, teachers, and the school environment is essential in habituating children to consume a nutritious breakfast every morning as part of efforts to improve the quality of education and children's holistic development.

References

Adolphus, K. (2013). The effects of breakfast on behavior and academic performance in children and adolescents. *Frontiers in Human Neuroscience*, *7*, 425. https://doi.org/10.3389/fnhum.2013.00425

Adolphus, K. (2019). The Relationship Between Habitual Breakfast Consumption Frequency and Academic Performance in British Adolescents. *Frontiers in Public Health*, *7*, 283. https://doi.org/10.3389/fpubh.2019.00283

Arora, S. K. (2022). Effects of Breakfast on Cognitive Function of Children. *Acta Scientific Nutritional Health*, *6*(4), 75–79. https://doi.org/10.31080/ASNH.2022.06.1027

Barokah, L., Jaenudin, & Pratiwi, A. (2022). HUBUNGAN SARAPAN PAGI TERHADAP KONSENTRASI BELAJAR SISWA. *Nusantara Hasana Journal*, *2*(6).

Booth, A., Sutton, A., & Papaioannou, D. (2016). *Systematic Approaches to a Successful Literature Review* (2nd ed.). SAGE Publications.

Diana, R., Setyaningtyas, S. W., & Agnessia Nanda Arimb. (2025). Preferensi Makanan, Kebiasaan Makan, dan Status Gizi Anak Sekolah Full-day di Perkotaan. *Amerta Nutrition*, *9*(1). https://doi.org/10.20473/amnt.v9i1.2025.169-175

Hastriati, A. Y. (2024). Hubungan Antara Sarapan Dengan Daya Tangkap Anak kelompok A Usia 4-5 Tahun di TK Sekecamatan Binawidya Pekanbaru. *Jurnal Pendidikan Tuntas*, *2*(2).

Hazizah, A. W., Embrik, I. S., & Pratiwi, A. (2024). Pengaruh Sarapan Pagi Terhadap Konsentrasi Belajar Pada Anak Kelas V Di SDN 04 Tigaraksa. *Gudang Jurnal Ilmu Kesehatan*, *2*(2). https://doi.org/https://doi.org/10.59435/gjik.v2i2.864

Hidayat, M. F., & Nurhayati, F. (2021). Hubungan kebiasaan sarapan dengan konsentrasi belajar. *Bima Loka : Journal of Physical Education*, *1*(2). https://doi.org/https://doi.org/10.26740/bimaloka.v1i2.11489

Hoyland, A., McWilliams, K. A., & Dye, L. (2016). Breakfast consumption and cognitive performance in children and adolescents: A systematic review. *Nutrition Research Reviews*, *29*(2), 214–245. https://doi.org/10.1017/S095442241600010X

Lestari, L. (2024). HUBUNGAN POLA MAKAN PAGI TERHADAP KONSENTRASI BELAJAR ANAK USIA DINI. *Doctoral*

Disesrtasion Universitas Pendidikan Indonesia.

Liu, J. (2021). Breakfast Consumption Habits at Age 6 and Cognitive Ability at Age 12: A Longitudinal Study. *Nutrients*, *13*(6), 2080. https://doi.org/10.3390/nu13062080

Luthfillah, M., & Aryanto, S. J. (2022). PENGARUH SARAPAN PAGI TERHADAP KOSENTRASI BELAJAR ANAK USIA DINI DI RA ROUDHOTUT THOLIBIN MOROBAKUNG GRESIK. *JCE (Journal of Chilhood Education)*, *5*(2). https://doi.org/10.30736/jce.v5i2.727

Luthfillah, R., & Aryanto, D. (2021). Pengaruh sarapan bergizi terhadap konsentrasi belajar anak usia dini. *Jurnal Childhood Education*, *5*(2), 101–109.

Nova, R. E., & Marlina, S. (2023). HUBUNGAN PEMBIASAAN PEMBERIAN SARAPAN TERHADAP ANAK USIA 4-5 TAHUN DI KENAGARIAN KOTO KACIAK KABUPATEN PASAMAN. *Jurnal Pemikiran Dan Penelitian Pendidikan Islam Anak Usia Dini*, *5*(1). https://doi.org/10.52266/pelangi.v5i1.1099

Pebriana, P. H. (2017). Analisis Penggunaan Gadget terhadap Perkembangan Sosial dan Emosional Anak Usia Dini. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, *1*(1), 1–11. https://doi.org/10.31004/obsesi.v1i1.26

UNICEF. (2021). *Early childhood nutrition and learning readiness*. United Nations Children's Fund.

WHO. (2020). *Nutrition for school-aged children and adolescents*. WHO Press.

Wulandari, S., & Sari, N. (2022). Video lagu Islami dan retensi doa anak usia dini. *Jurnal Seni Dan Pendidikan Anak*, *5*(2), 83–91.

Yuniarsih, D. P. (2021). Hubungan Pengetahuan Gizi dan Kebiasaan Sarapan terhadap Prestasi Belajar Siswa di SMA Negeri 12 Kota Bekasi. *Journal Healthsains*, *2*(11). https://doi.org/https://doi.org/10.46799/jhs.v2i11.261