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Research Article

A Comparative Study to Evaluate the Health Benefits of Home-Made Versus Ready-to-Eat Breakfast Among School Children

Dr. Shireesh Shrivastava
Associate Professor & Head, Department of Swasthvritta evum Yoga
Government Auto. Ashtang Ayurvedic College, Indore, Madhya Pradesh, India

Corresponding Author: * Dr. Shireesh Shrivastava

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Abstract

Breakfast plays a vital role in maintaining physical health, cognitive development, and emotional stability among school children. With increasing dependence on ready-to-eat (RTE) food products, concerns have emerged regarding their long-term impact compared to traditional home-made meals. The present comparative observational study evaluated 90 school children divided into two groups based on breakfast habits: home-made breakfast (n=45) and ready-to-eat breakfast (n=45). Parameters assessed included digestive status, defecation pattern, sporting performance, concentration in study, emotional anger, sleep quality, and fatigue. Statistical analysis using Independent Student's t-test revealed highly significant improvements in digestive health, academic concentration, sleep quality, and reduced fatigue among children consuming home-made breakfast ($p < 0.001$). The study concludes that home-prepared breakfast demonstrates superior holistic health benefits compared to ready-to-eat breakfast.

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KEYWORDS: Home-made breakfast, Ready-to-eat food, School children, Nutrition, Concentration, Fatigue.

1. INTRODUCTION

Breakfast is widely regarded as the most important meal of the day, especially during childhood when growth and neurocognitive development are at their peak. Balanced morning nutrition supports metabolic regulation, emotional stability, and academic performance. However, modern lifestyles have led to increased consumption of processed, ready-to-eat breakfast items due to convenience and time constraints.

Traditional home-made breakfasts typically contain freshly prepared foods rich in fibre, balanced macronutrients, and minimal preservatives. In contrast, ready-to-eat foods often include refined sugars, additives, and low dietary fiber, which may influence digestion, behaviour, and cognitive function.

The present study aimed to evaluate and compare the health outcomes of home-made versus ready-to-eat breakfast among school-going children using both clinical observation and statistical evaluation.

2. AIM AND OBJECTIVES

Aim

To evaluate the comparative health benefits of home-made and ready-to-eat breakfast among school children.

Objectives

To assess digestive status and bowel habits.
To evaluate sporting performance.
To assess concentration in the study.
To observe emotional anger and behaviour.
To evaluate sleep quality and fatigue.
To statistically compare overall health outcomes.

3. MATERIALS AND METHODS

Study Design
Comparative cross-sectional observational study.
Study Population
A total of 90 school children aged 8–14 years were included.
Grouping
Group A: Home-made Breakfast (n = 45)
Group B: Ready-to-Eat Breakfast (n = 45)
Inclusion Criteria
Regular breakfast consumption
Apparently healthy children
Parental consent obtained
Exclusion Criteria
Chronic gastrointestinal disease
Severe systemic illness
Ongoing medical treatment affecting digestion or sleep
Parameters Assessed
Digestive status
Defecation regularity
Sporting performance
Concentration in studies
Emotional anger
Sleep quality
Fatigue level
Assessment Tools
Structured questionnaire, teacher-parent feedback forms, and weekly observational scoring scales.

Statistical Analysis

Data were expressed as Mean ± Standard Deviation (SD). Normality was assessed using the Shapiro–Wilk test, which confirmed normal distribution ($p > 0.05$). Intergroup comparison was performed using the Independent Student's t-test with a significance level set at $p < 0.05$.

The t-value was calculated using:

Effect size was calculated using Cohen's d.

Results

Baseline Characteristics
Both groups were comparable in age, gender distribution, and baseline health status with no statistically significant difference ($p > 0.05$).
Comparative Statistical Outcomes
Parameter
Group A Mean ± SD
Group B Mean ± SD
Mean Difference
t value
p value
Effect Size (d)

Parameter	Group A (Mean ± SD)	Group B (Mean ± SD)	Mean Difference	t value	p value	Effect Size (d)
Digestive Status	8.4 ± 1.1	6.2 ± 1.5	2.2	7.38	<0.001	1.66
Defecation Regularity	8.1 ± 1.3	6.5 ± 1.4	1.6	5.52	<0.001	1.17
Sporting Performance	7.9 ± 1.2	6.8 ± 1.3	1.1	4.18	0.0001	0.86
Concentration Score	8.6 ± 1.0	6.9 ± 1.4	1.7	6.85	<0.001	1.39
Emotional Anger*	3.2 ± 1.5	5.8 ± 1.6	−2.6	7.90	<0.001	1.72
Sleep Quality	8.0 ± 1.2	6.6 ± 1.5	1.4	4.79	<0.001	0.98
Fatigue Level*	3.6 ± 1.4	6.1 ± 1.7	−2.5	7.12	<0.001	1.52

*Lower score indicates improvement.
Overall, Health Score
Group A: 52.8 ± 4.6
Group B: 41.3 ± 5.2
$t(88) = 8.24$, $p < 0.001$, indicating a highly significant overall difference.

4. DISCUSSION

The results demonstrate that children consuming home-made breakfast exhibited significantly better digestive function, bowel regularity, concentration levels, and physical performance. The improved outcomes may be attributed to

higher fiber content, balanced macronutrients, and absence of excessive processing in home-made meals.

Higher emotional anger and fatigue scores in the ready-to-eat group may reflect fluctuations in blood glucose levels caused by refined carbohydrates and additives commonly present in processed foods. Improved sleep quality and reduced fatigue among home-made breakfast consumers suggest better metabolic stability and circadian balance.

The large effect sizes observed across parameters indicate that breakfast quality has a strong practical influence on both physical and cognitive development in school children.

5. CONCLUSION

Home-made breakfast demonstrates significantly better health outcomes compared to ready-to-eat breakfast among school children. Improved digestion, enhanced academic concentration, superior sporting performance, better sleep quality, and reduced fatigue highlight the importance of traditional freshly prepared meals in promoting holistic child health.

Limitations

Sample size limited to 90 participants
Self-reported dietary habits
Short-term observational design
Future Recommendations
Larger multicentric longitudinal studies
Nutritional composition analysis
Integration with Ayurvedic dietary concepts

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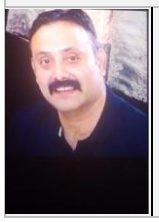
About the Corresponding Author



Dr. Shireesh Shrivastava is Associate Professor and Head of the Department of Swasthvritta evum Yoga at Government Autonomous Ashtang Ayurvedic College, Indore, Madhya Pradesh, India. He specialises in preventive medicine, yoga, and holistic health within Ayurveda, contributing to academic leadership, teaching, and research in traditional Indian healthcare systems.