

ASSOCIATION BETWEEN HEALTHY EATING HABITS AND ACADEMIC ACHIEVEMENT IN MATHEMATICS AMONG NINTH STANDARD STUDENTS IN PUDUKKOTTAI DISTRICT

B. Prabakaran

Associate Professor and HOD

Department of Education, Government College of Education,
Pudukkottai- Tamilnadu (India)

ABSTRACT

Aims: The primary aim of the study was to examine the statistical association between healthy eating habits and academic achievement in Mathematics among ninth-standard students in the Pudukkottai District. The study specifically aimed to analyze how dietary practices such as eating meals at the right time and consuming food mainly at home influence students' performance in Mathematics. Furthermore, the research sought to determine whether students who consistently follow healthy eating behaviours demonstrate higher levels of academic achievement compared to students with irregular or unhealthy eating habits.

Research Approach: A sample of 1,500 ninth-standard students was selected from 60 schools through a simple random sampling technique using the lottery method, ensuring equal representation and minimizing selection bias. The research instrument used for data collection was the Healthy Food Habits Scale, a researcher-developed five-point Likert-type scale comprising 30 statements related to dietary behaviour and eating practices. The scale included response categories ranging from "Always" to "Never" and was designed to measure dimensions such as timely eating, consumption of home-cooked food, and regular healthy dietary practices. The collected data were systematically classified and analyzed using percentage analysis and the chi-square test of independence to determine the statistical association between healthy eating habits and academic achievement in Mathematics.

Findings: The findings revealed a strong and statistically significant association between healthy eating habits and academic achievement in Mathematics. The chi-square analysis demonstrated that students, who consistently practiced healthy eating behaviours, particularly eating meals at the right time and consuming food primarily at home, achieved substantially higher scores in Mathematics compared to students with irregular or unhealthy dietary habits. Students categorized under "Always" and "Most of the Time" responses were predominantly concentrated in the higher achievement ranges (61–80 and 81–100), whereas students who "Rarely" or "Never" followed healthy eating practices were largely represented in the lower achievement categories (0–20 and 21–40). The findings analytically establish that nutritional discipline positively influences cognitive functioning, academic concentration, problem-solving ability, and mathematical performance among adolescents.

Validity & Reliability: The validity of the study was ensured through a systematic and scientifically structured research process. Content validity of the Healthy Food Habits Scale was established by incorporating major dimensions of healthy dietary practices relevant to adolescents, including meal timing, home-based food consumption, and balanced eating behaviour. The instrument was carefully designed in alignment with the objectives and hypotheses of the study. The obtained reliability coefficient indicated satisfactory internal consistency of the scale, confirming that the items consistently measured healthy eating habits among students. In addition, the use of standardized half-yearly Mathematics examination scores as indicators of academic achievement increased the objectivity and reliability of the dependent variable.

KEYWORDS Home-Cooked Food Consumption; Cognitive Performance; Adolescents; Ninth-Standard Students; Pudukkottai District Healthy Eating Habits; Academic Achievement in Mathematics; Nutritional Behaviour; Timely Eating Practices.

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1. INTRODUCTION

Eating practices play a vital role in promoting health, longevity, and overall well-being, as they provide the essential energy required for the functioning of all cells in the human body. Healthy eating habits encompass several important dimensions, including the timely consumption of food, adherence to a balanced and nutrient-rich diet, and the use of locally available and natural food sources. In addition, practices such as consuming home-cooked meals, eating slowly, chewing food thoroughly, maintaining adequate hydration, and engaging in mindful eating are essential components of a healthy lifestyle. The inclusion of fiber-rich foods and healthy fats further enhances nutritional quality. Both the quantity and quality of food intake significantly influence an individual's lifestyle and health status. Consistent adherence to these dietary practices contributes to improved well-being and reduces the likelihood of illness and disease.

Academic achievement is a key indicator of educational success and is widely used to assess the extent to which learners attain their educational goals. According to Wikipedia, academic achievement refers to the degree to which a student, teacher, or institution accomplishes short-term and long-term objectives. It reflects the acquisition of knowledge, comprehension, application, and skills that are essential for both present and future life. Educational attainment plays a significant role in shaping individuals' economic and social well-being, and success in education is often considered a systematic and measurable pathway to personal and professional advancement. Furthermore, academic achievement serves as an important indicator for evaluating socioeconomic status, particularly in relation to educational qualifications and performance outcomes.

Mathematics is a systematically developed, human-constructed discipline that facilitates problem-solving through logical and sequential reasoning. It is widely regarded as a foundational subject that supports scientific thinking and analytical skills. Mathematics involves structured methods of acquiring, processing, and applying knowledge in a coherent manner. Mathematical achievement, therefore, refers to the measurable level of an individual's proficiency in terms of knowledge, understanding, application, and skills within the domain of Mathematics. It plays a critical role in determining students' overall academic performance and their ability to apply mathematical concepts in real-life situations.

2. NEED, IMPORTANCE & SCOPE OF THE STUDY

Healthy eating habits play a major role in sustaining an active and long life by preventing illness and disease. Successful learning is closely associated with a healthy body and a peaceful mind. Health-related issues can negatively affect concentration, thereby hindering the acquisition of knowledge and subject understanding. Eating habits and academic achievement are interrelated, as proper nutrition influences cognitive functioning, learning capacity, and skill development. The significance of the present study lies in examining how healthy eating habits contribute to increased academic achievement in mathematics among ninth-standard students in Pudukkottai district.

The study focuses exclusively on examining the association between healthy eating habits and academic achievement in Mathematics among ninth-standard students in Pudukkottai District. It does not consider other subjects, grade levels, or districts.

3. OBJECTIVES OF THE STUDY

1. To determine the association between eating at the right time and high academic achievement in Mathematics among ninth-standard students in Pudukkottai district.
2. To examine the association between eating at home and high academic achievement in Mathematics among ninth-standard students in Pudukkottai district.

4. OPERATIONAL DEFINITIONS OF VARIABLES

- (i) **Association:** Association refers to the statistical dependency or relationship between two or more variables. In this study, it denotes the relationship between healthy eating habits and academic achievement in Mathematics.
- (ii) **Healthy Eating Habits:** Healthy eating habits refer to the conscious practice of consuming nutritious and balanced food, including home-cooked meals, indigenous foods, and natural food items. It also includes maintaining regular meal timings, eating slowly with proper chewing, ensuring adequate hydration, practicing mindful eating, and consuming fiber-rich foods and healthy fats, along with maintaining appropriate quantity and quality of food intake.
- (iii) **Academic Achievement In Mathematics:** Academic achievement in mathematics is measured using the half-yearly examination scores of ninth-standard students from selected schools in Pudukkottai Educational District.
- (iv) **Ninth-Standard Students:** This refers to students currently studying in the ninth standard in Government and Government-Aided schools in Pudukkottai District.
- (v) **Pudukkottai District:** Pudukkottai District is divided into two educational districts: Pudukkottai and Aranthangi. Together, they comprise 233 Government And Government-Aided High And Higher Secondary Schools.

5. RESEARCH METHODOLOGY

- (i) **Descriptive Study:** The study adopts a descriptive research design to examine the association between healthy eating habits and academic achievement in Mathematics.
- (ii) **Survey Method:** A survey method was employed, targeting ninth-standard students. Data were collected directly from students using a structured questionnaire administered in person.
- (iii) **Research Tool:** The research instrument used was the *Healthy Food Habits Scale*, a five-point Likert scale consisting of 30 statements with response options: Always, Most of the Time, Sometimes, Rarely, and Never. The questionnaire comprised two parts: Part I (bio-data) and Part II (scale items).
- (iv) **Sample of The Study:** Simple random sampling was employed using the lottery method. Out of 233 schools, 60 government and government-aided schools were selected. The final sample consisted of 1,500 ninth-standard students from these schools.
- (v) **Data Collection Procedure:** Data were collected through direct, face-to-face administration of the questionnaire, which ensured a high response rate and allowed clarification of doubts. Prior permission was obtained from school authorities. Students were informed about the purpose of the study, assured confidentiality, and encouraged to respond honestly. A supportive environment was maintained to ensure reliable data collection. Academic achievement data were obtained from students' half-yearly examination scores.

6. DELIMITATIONS OF THE STUDY

- (i) The study is limited to an associative research design.
- (ii) Data were collected through face-to-face interaction.
- (iii) The sample consisted of 1,500 ninth-standard students.
- (iv) Only 60 schools were selected from 233 schools.

- (v) Simple random sampling technique was used.
- (vi) The study focused only on ninth-standard students.
- (vii) Half-yearly examination marks were used for academic achievement.
- (viii) The healthy food habits scale was developed by the researcher.
- (ix) A normative survey method was employed.
- (x) The Chi-square test was used for data analysis.

7. HYPOTHESES OF THE STUDY

H1: There is no significant association between eating at the right time and academic achievement in Mathematics among ninth-standard students in Pudukkottai district.

H2: There is no significant association between eating at home and academic achievement in Mathematics among ninth-standard students in Pudukkottai district.

8. DATA ANALYSIS AND INTERPRETATION OF RESULTS

Hypothesis 1: There is no statistically significant association between the statement ‘I eat at the right time every day’ and academic achievement in Mathematics among ninth-grade students in the Pudukkottai District.

Table-1: Chi-Square Distribution for ‘I eat at the right time every day’ and academic achievement in Mathematics

Eating Habit	Always	Most of Times	Some Times	Rearly	Never	Total
Marks						
0-20	4 (94.967)	21(93.1)	20(37.567)	124(50.867)	181(73.5)	350
21-40	18(68.647)	37(67.298)	41(27.155)	55(36.769)	102(53.13)	253
41-60	20(61.05)	83(59.85)	80(24.15)	23(32.7)	19(47.25)	225
61-80	115(68.647)	108(67.298)	12(27.155)	10(36.769)	8(53.13)	253
81-100	250(113.689)	150(111.454)	8(44.973)	6(60.895)	5(87.99)	419
Total	407	399	161	218	315	1500

Note : Bold numbers are observed value and numbers in brackets are expected value

Source: Calculated by the author after data analysis

$$\chi^2 = 87.135 + 37.367 + 27.602 + 31.299 + 163.436 + 55.837 + 13.64 + 8.954 + 24.617 + 13.331 + 8.214 + 7.058 + 129.16 + 8.458 + 30.396 + 105.147 + 9.039 + 2.877 + 19.489 + 49.486 + 157.228 + 44.952 + 16.89 + 38.335 + 78.274$$

$$\chi^2 = 1168.2219$$

The Table -1 shows that the chi-square test of independence yielded $\chi^2(16) = 1168.22$, $p < .05$. Therefore, the null hypothesis was rejected, indicating a statistically significant association between the statement ‘I eat at the right time every day’ and academic achievement in Mathematics among ninth-grade students in the Pudukkottai District. This finding suggests that healthy food habits are significantly related to students’ academic achievement in Mathematics. Therefore, percentage analysis was employed for further analysis.

- 1) Percentage of students for “Always I eat at the right time every day and he got mathematics mark from 0 to 20” is 0.27
- 2) Percentage of students for “Always I eat at the right time every day and he got mathematics mark from 21 to 40” is 1.2
- 3) Percentage of students for “Always I eat at the right time every day and he got mathematics mark from 41 to 60” is 1.3
- 4) Percentage of students for “Always I eat at the right time every day and he got mathematics mark from 61 to 80” is 7.67
- 5) Percentage of students for “Always I eat at the right time every day and he got mathematics mark from 81 to 100” is 16.67
- 6) Percentage of students for “Most of the time I eat at the right time every day and he got mathematics mark from 0 to 20” is 1.4

- 7) Percentage of students for “Most of the time I eat at the right time every day and he got mathematics mark from 21 to 40” is 2.47
- 8) Percentage of students “Most of the time I eat at the right time every day and he got mathematics mark from 41 to 60” is 5.53
- 9) Percentage of students for “Most of the time I eat at the right time every day and he got mathematics mark from 61 to 80” is 7.2
- 10) Percentage of students for “Most of the time I eat at the right time every day and he got mathematics mark from 81 to 100” is 10
- 11) Percentage of students for “Sometimes I eat at the right time every day and he got mathematics mark from 0 to 20” is 1.33
- 12) Percentage of students for “Sometimes I eat at the right time every day and he got mathematics mark from 21 to 40” is 2.73
- 13) Percentage of students for “Sometimes I eat at the right time every day and he got mathematics mark from 41 to 60” is 5.33
- 14) Percentage of students “Sometimes I eat at the right time every day and he got mathematics mark from 61 to 80” is 0.8
- 15) Percentage of students for “Sometimes I eat at the right time every day and he got mathematics mark from 81 to 100” is 0.53
- 16) Percentage of students for “Rarely I eat at the right time every day and he got mathematics mark from 0 to 20” is 8.27
- 17) Percentage of students for “Rarely I eat at the right time every day and he got mathematics mark from 21 to 40” is 3.67
- 18) Percentage of students for “Rarely I eat at the right time every day and he got mathematics mark from 41 to 60” is 1.53
- 19) Percentage of students for “Rarely I eat at the right time every day and he got mathematics mark from 61 to 80” is 0.67
- 20) Percentage of students for “Rarely I eat at the right time every day and he got mathematics mark from 81 to 100” is 0.4
- 21) Percentage of students for “Never I eat at the right time every day and he got mathematics mark from 0 to 20” is 12.07
- 22) Percentage of students for “Never I eat foods at home only and he got mathematics mark from 21 to 40” is 6.8
- 23) Percentage of students for “Never I eat at the right time every day and he got mathematics mark from 41 to 60” is 1.27
- 24) Percentage of students for “Never I eat at the right time every day and he got mathematics mark from 61 to 80” is 0.53
- 25) Percentage of students for “Never I eat at the right time every day and he got mathematics mark from 81 to 100” is 0.33

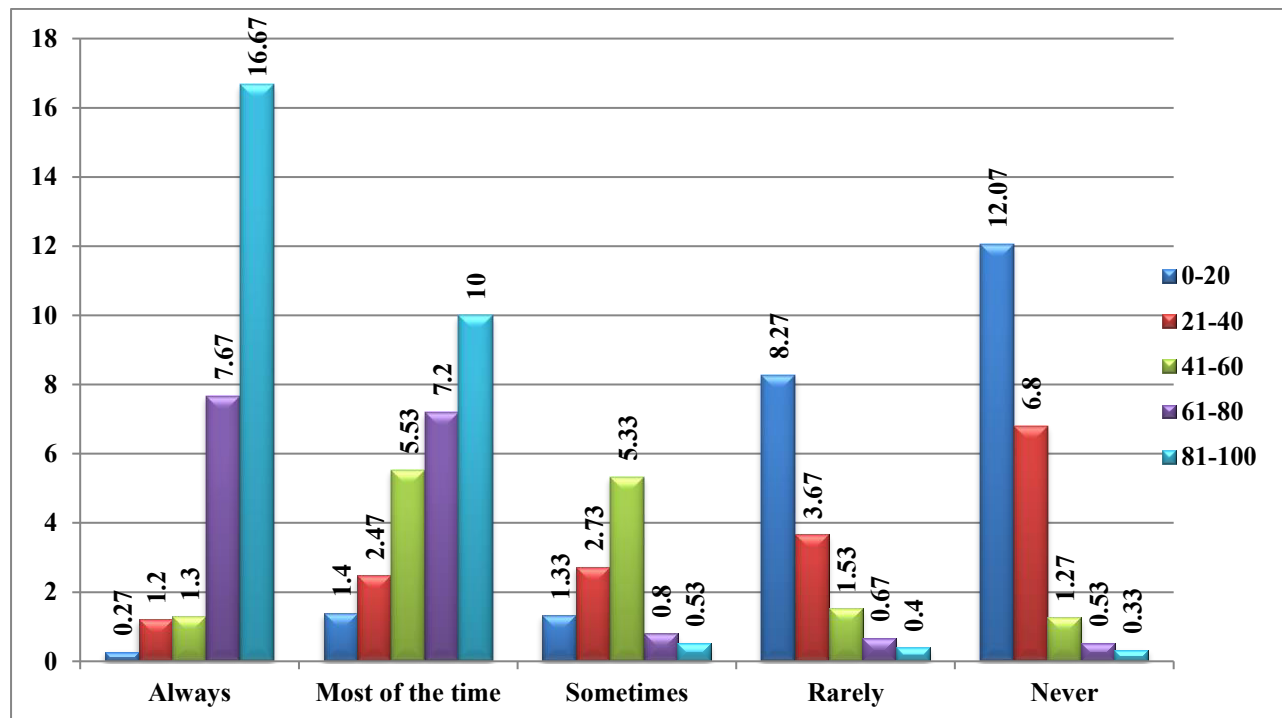
Table-2: Percentage Distribution of I eat at the right time every day and Academic Achievement in Mathematics

Eating Habit Marks	Always	Most of Times	Some Times	Rearly	Never	Total
0-20	0.27	1.40	1.33	8.27	12.07	23.34
21-40	1.20	2.47	2.73	3.67	6.80	16.87
41-60	1.33	5.53	5.33	1.53	1.27	14.99
61-80	7.67	7.20	0.80	0.67	0.53	16.87
81-100	16.67	10.00	0.53	0.40	0.33	27.93
Total	27.14	26.60	10.72	14.54	21.00	100.00

Note. :Values are expressed as percentages.

Source: Calculated by the author after data analysis

As shown in Table-2, students who reported that they always eat at the right time exhibited higher academic achievement in Mathematics, with a greater percentage scoring in the 81–100 (16.67%) and 61–80 (7.67%) ranges. Similarly, students who reported eating at the right time most of the time also demonstrated moderate to high achievement levels. In contrast, students who rarely or never ate at the right time were predominantly concentrated in the lower score ranges (0–20 and 21–40), indicating poorer academic performance. Students who sometimes ate at the right time were mainly distributed in the average achievement category (41–60: 5.33%). Overall, the findings suggest that regular eating habits are positively associated with higher academic achievement in Mathematics, whereas irregular eating habits are associated with lower levels of achievement among ninth-grade students in the Pudukkottai District.”



Graph-1: Percentage Distribution of I eat at the right time every day and Academic Achievement in Mathematics

Hypothesis-2: There is no statistically significant association between the statement ‘I eat foods only at home’ and academic achievement in Mathematics among ninth-grade students in the Pudukkottai District.

Table-3: Chi-Square Distribution for ‘I eat foods only at home’ and academic achievement in Mathematics

Eating Habit Marks	Always	Most of Time	Some Times	Rearly	Never	Total
0-20	10(99.167)	19(84.933)	15(37.567)	136(56.233)	170(72.1)	350
21-40	27(71.683)	33(61.395)	29(27.155)	48(40.649)	116(52.118)	253
41-60	41(63.75)	56(54.6)	75(24.15)	37(36.15)	16(46.35)	225
61-80	125(71.683)	89(61.395)	24(27.155)	11(40.649)	4(52.118)	253
81-100	222(118.717)	167(101.677)	18(44.973)	9(67.319)	3(86.314)	419
Total	425	364	161	241	309	1500

Note: Bold numbers are observed value and numbers in brackets are expected value

Source: Calculated by the author after data analysis

$$\chi^2 = 80.175 + 51.184 + 13.556 + 113.149 + 132.932 + 27.853 + 13.132 + 0.125 + 1.329 + 78.301 + 8.119 + 0.036 + 107.069 + 0.02 + 19.873 + 39.656 + 12.412 + 0.367 + 21.625 + 44.425 + 89.856 + 41.967 + 16.177 + 50.523 + 80.418$$
$$\chi^2 = 1044.2805$$

The Table -3 shows that The chi-square test of independence indicated a statistically significant association between the statement 'I eat foods only at home' and academic achievement in Mathematics among ninth-grade students in the Pudukkottai District, $\chi^2(16) = 1044.28$, $p < .05$. Therefore, the null hypothesis was rejected. This finding suggests that healthy food habits are significantly associated with students' academic achievement in Mathematics. Consequently, percentage analysis was employed for further analysis."

- 26) Percentage of students for "Always I eat foods only at home and he got mathematics mark from 0 to 20" is 0.67
- 27) Percentage of students for "Always I eat foods only at home and he got mathematics mark from 21 to 40" is 1.8
- 28) Percentage of students for "Always I eat foods only at home and he got mathematics mark from 41 to 60" is 2.73
- 29) Percentage of students for "Always I eat foods only at home and he got mathematics mark from 61 to 80" is 8.33
- 30) Percentage of students for "Always I eat foods only at home and he got mathematics mark from 81 to 100" is 14.8
- 31) Percentage of students for "Most of the time I eat foods only at home and he got mathematics mark from 0 to 20" is 1.27
- 32) Percentage of students for "Most of the time I eat foods only at home and he got mathematics mark from 21 to 40" is 2.2
- 33) Percentage of students for "Most of the time I eat foods only at home and he got mathematics mark from 41 to 60" is 3.73
- 34) Percentage of students for "Most of the time I eat foods only at home and he got mathematics mark from 61 to 80" is 5.93
- 35) Percentage of students for "Most of the time I eat foods only at home and he got mathematics mark from 81 to 100" is 11.13
- 36) Percentage of students for "Sometimes I eat foods only at home and he got mathematics mark from 0 to 20" is 1
- 37) Percentage of students for "Sometimes I eat foods only at home and he got mathematics mark from 21 to 40" is 1.93
- 38) Percentage of students for "Sometimes I eat foods only at home and he got mathematics mark from 41 to 60" is 5
- 39) Percentage of students for "Sometimes I eat foods only at home and he got mathematics mark from 61 to 80" is 1.6
- 40) Percentage of students for "Sometimes I eat foods only at home and he got mathematics mark from 81 to 100" is 1.2
- 41) Percentage of students for "Rarely I eat foods only at home and he got mathematics mark from 0 to 20" is 9.07
- 42) Percentage of students for "Rarely I eat foods only at home and he got mathematics mark from 21 to 40" is 3.2
- 43) Percentage of students for "Rarely I eat foods only at home and he got mathematics mark from 41 to 60" is 2.47
- 44) Percentage of students for "Rarely I eat foods only at home and he got mathematics mark from 61 to 80" is 0.74

- 45) Percentage of students for “Rarely I eat foods only at home and he got mathematics mark from 81 to 100” is 0.6
- 46) Percentage of students for “Never I eat foods only at home and he got mathematics mark from 0 to 20” is 11.33
- 47) Percentage of students for “Never I eat foods only at home and he got mathematics mark from 21 to 40” is 7.74
- 48) Percentage of students for “Never I eat foods only at home and he got mathematics mark from 41 to 60” is 1.07
- 49) Percentage of students for “Never I eat foods only at home and he got mathematics mark from 61 to 80” is 0.27
- 50) Percentage of students for “Never I eat foods only at home and he got mathematics mark from 81 to 100” is 0.2

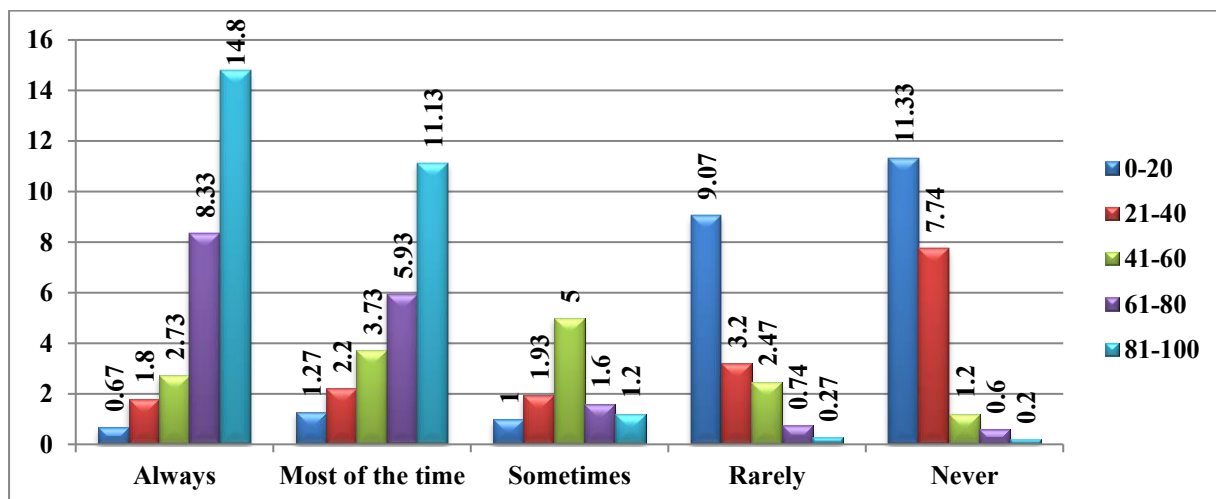
Table-4: Percentage Distribution of I eat foods only at home and Academic Achievement in Mathematics

Eating Habit Marks	Always	Most of Times	Some Times	Rearly	Never	Total
0-20	0.67	1.27	1.00	9.07	11.33	23.34
21-40	1.80	2.20	1.93	3.20	7.74	16.87
41-60	2.73	3.73	5.00	2.47	1.06	14.99
61-80	8.33	5.93	1.60	0.74	0.27	16.87
81-100	14.80	11.13	1.20	0.60	0.20	27.93
Total	28.33	24.26	10.73	16.08	20.60	100.00

Note. Values are expressed as percentages

Source: Calculated by the author after data analysis

As shown in Table- 4, students who reported that they always eat food only at home demonstrated higher academic achievement in Mathematics, with a greater proportion scoring in the 81–100 (14.80%) and 61–80 (8.33%) ranges. Similarly, students who reported eating food at home most of the time were also distributed across moderate to high achievement levels (81–100: 11.13%; 61–80: 5.93%). In contrast, students who rarely or never eat food only at home were predominantly concentrated in the lower score ranges (0–20: 11.33% and 21–40: 7.74%), indicating comparatively lower academic performance. Students who sometimes eat food only at home were mainly distributed in the average achievement category (41–60: 5.00%). Overall, the findings suggest that consuming food at home is positively associated with higher academic achievement in Mathematics, whereas not following this habit is associated with lower levels of achievement among ninth-grade students in the Pudukkottai District.



Graph 2: Percentage Distribution of I eat at the right time every day and Academic Achievement in Mathematics

9. FINDINGS OF THE STUDY

- (i) There is a statistically significant association between timely eating habits and academic achievement in Mathematics among ninth-grade students in the Pudukkottai District.
- (ii) There is a statistically significant association between consuming home-cooked food and academic achievement in Mathematics among ninth-grade students in the Pudukkottai District.
- (iii) Healthy eating habits are significantly associated with improved academic achievement in Mathematics among ninth-grade students in the Pudukkottai District.
- (iv) The exceptionally high chi-square values obtained in the study confirmed that the association between healthy eating habits and academic achievement in Mathematics was highly significant and not due to chance.
- (v) Percentage analysis further indicated that healthy eating behaviors contribute positively to students' concentration, learning efficiency, and sustained academic engagement in Mathematics.
- (vi) The study established that healthy eating habits serve as an important educational and behavioral factor influencing academic achievement among adolescents. Students who consistently practiced healthy dietary behaviors, particularly eating meals at the right time and consuming home-cooked food, demonstrated significantly higher levels of achievement in Mathematics.
- (vii) The findings clearly indicated that disciplined eating patterns positively influence students' cognitive functioning, concentration, memory retention, and learning efficiency, thereby contributing to improved mathematical performance.
- (viii) Students with irregular, unhealthy, or inconsistent eating habits were predominantly associated with lower levels of academic achievement, suggesting that poor nutritional practices adversely affect scholastic performance.

10. IMPLICATIONS OF THE STUDY

The present study has profound educational, psychological, nutritional, and policy implications, as it empirically demonstrates that healthy eating habits are significantly associated with higher academic achievement in Mathematics among ninth-standard students. The findings strongly indicate that academic success is not determined solely by intellectual ability or classroom instruction, but is also deeply influenced by students' lifestyle and nutritional practices. Regular meal timings and the consumption of home-cooked, nutritious food appear to enhance students' concentration, cognitive efficiency, memory retention, analytical thinking, and sustained attention, which are essential for effective learning and mathematical problem-solving.

The study emphasizes the urgent need for schools to view nutrition as an integral component of educational development rather than merely a health-related concern. Educational institutions should therefore incorporate nutrition education, healthy eating awareness programmes, and scientifically designed school health initiatives into the curriculum and co-curricular activities. Teachers can play a transformative role by identifying unhealthy eating behaviors among students and motivating them toward disciplined dietary practices that support both physical well-being and academic excellence.

The findings further underline the critical responsibility of parents in cultivating healthy food habits during adolescence, a developmental stage that significantly influences lifelong behavior patterns and educational outcomes. Parents should be encouraged to provide balanced, hygienic, and home-prepared meals while minimizing students' dependence on unhealthy processed foods and irregular eating schedules. Collaborative efforts between schools and families may create a supportive nutritional environment that positively impacts learning achievement.

From a broader policy perspective, the study highlights the necessity for educational planners, health departments, and policymakers to design integrated school nutrition policies and strengthen existing health and midday meal programmes.

11. CONCLUSION

The present study provides strong empirical evidence that healthy eating habits have a substantial and statistically significant association with academic achievement in Mathematics among ninth-standard students in the Pudukkottai District. The findings demonstrate that students, who consistently practiced disciplined dietary behaviors, particularly consuming meals at the right time and regularly eating home-cooked food, were disproportionately represented in the higher achievement categories, whereas students with irregular and unhealthy eating patterns were concentrated within the lower score ranges. The exceptionally high chi-square values obtained in the study indicate that the relationship between nutritional practices and Mathematics achievement is not incidental but educationally meaningful and behaviorally influential. The study therefore reinforces the view that nutrition directly contributes to cognitive efficiency, concentration, memory retention, logical reasoning, and sustained academic engagement, all of which are essential for success in Mathematics. By establishing healthy eating habits as a significant academic predictor, the study extends the understanding of student achievement beyond conventional classroom and socio-economic factors and highlights the critical importance of integrating nutritional awareness into educational planning and adolescent development programmes. Consequently, the research underscores the need for coordinated efforts among schools, parents, health professionals, and policymakers to cultivate scientifically informed dietary practices that can enhance both student well-being and academic excellence.

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