

THE MID-DAY MEAL SCHEME IN KARNATAKA (2015-2025): A COMPREHENSIVE EVALUATION OF IMPLEMENTATION, IMPACT, AND CHALLENGES

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ABSTRACT

The Mid-Day Meal Scheme (MDMS), now part of the PM POSHAN initiative, has been a critical social protection and nutrition program in India since its inception. This comprehensive study evaluates the implementation and impact of the MDMS in Karnataka state over the last decade (2015-2025). Through systematic analysis of government reports, academic studies, and monitoring data, this research examines the scheme's effectiveness in improving school enrollment, attendance, retention, and nutritional outcomes. During the study period, Karnataka served approximately 53.48 lakh (5.348 million) students across 54,839 government and aided schools, representing 92% of total student enrollment. The findings reveal that the MDMS has been highly effective in improving academic outcomes, particularly enrollment (increased consistency), attendance (92% average compliance), and retention rates. However, challenges persist in fully addressing malnutrition and ensuring consistent nutritional improvements. The state

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invested approximately Rs. 1,465 crores annually (2018-19), representing significant fiscal commitment. This study concludes that while the MDMS remains a cornerstone of educational equity and nutrition security in Karnataka, targeted interventions addressing quality, monitoring, and nutritional adequacy are essential for maximizing its potential benefits.

KEYWORDS: Mid-Day Meal Scheme, School Nutrition, Educational Outcomes, Nutritional Status, Karnataka, School Enrollment, Retention.

1. Introduction

1.1 Background And Context

The Mid-Day Meal Scheme (MDMS) represents one of the world's largest school feeding programs, serving millions of children across India daily. Initiated with the primary objectives of improving nutritional status, enhancing school attendance and enrollment, and promoting gender and social equity, the scheme has evolved significantly over its implementation period. In Karnataka, the MDMS was implemented to address the dual challenges of child malnutrition and educational access, particularly among economically disadvantaged populations.

1.2 Rationale And Objectives

The MDMS operates on the premise that malnutrition and food insecurity create significant barriers to school attendance and learning outcomes. By providing a hot, cooked meal to all school children, the scheme aims to: (a) ensure nutritional security for school-age children, (b) improve school attendance and reduce dropout rates, (c) enhance learning outcomes and academic performance, (d) promote social equity and inclusion, and (e) supplement household food security. The scheme is particularly critical in Karnataka, given regional variations in

nutritional status and disparities in educational access across rural and urban areas.

1.3 Scope And Significance

This study focuses on the decade from 2015 to 2025, a period marked by significant policy modifications, increased financial allocations, and expanded coverage under the National Program of Midday Meal Scheme in Schools (later renamed PM POSHAN). The study is significant because it provides a comprehensive evaluation of implementation outcomes at the state level, identifying both successes and persistent challenges that require policy attention.

1.4 Research Questions

This study addresses the following key questions:

- What has been the extent of MDMS coverage and implementation in Karnataka during 2015-2025?
- How has the MDMS impacted school enrollment, attendance, and retention rates?
- What improvements in nutritional status have been achieved among beneficiary children?
- What are the key factors facilitating or hindering effective implementation?
- What recommendations emerge for strengthening the scheme's effectiveness?

2. Observations And Current Status (2015-2025)

2.1 Coverage And Scale Of Implementation

During the study period, the MDMS in Karnataka demonstrated unprecedented scale and reach. The scheme covered approximately 53.48 lakh children across 54,839 educational institutions, including Lower Primary Schools (LPS), Higher Primary Schools (HPS), and High Schools.

This coverage represented 92% of total student enrollment in government and aided educational institutions, indicating near-universal reach. The expansion was particularly notable in secondary classes (9th and 10th), which were included in the scheme's scope during this period through dedicated budgetary allocation from state resources.

2.2 Nutritional Provision And Quality

The scheme provided hot, fresh, cooked meals meeting prescribed nutritional standards. Government of India guidelines specified a minimum of 450 calories and 12 grams of protein for primary classes and 700 calories and 20 grams of protein for upper primary classes. In addition to midday meals, Karnataka implemented the "Kshira Bhagya Yojana," providing 150 ml of hot milk daily to all students using state government resources, demonstrating commitment to micronutrient supplementation. This additional provision was critical for addressing widespread anemia and micronutrient deficiency disorders prevalent in the region.

2.3 Financial Allocation And Budget

Financial investment in the MDMS expanded significantly during the study period. During 2018-19, the state allocated approximately Rs. 1,465 crores for the scheme's implementation. This substantial investment reflected the government's recognition of the program's importance for both social protection and human capital development. Fund utilization rates generally remained above 90% in most years, though a decline was observed in 2017-18, suggesting occasional implementation challenges.

2.4 Institutional And Administrative Framework

The scheme's implementation was managed through a multi-level administrative structure involving state-level coordination, district administration, and block and school-level execution. Each school maintained a School Development

and Management Committee (SDMC) responsible for program oversight. Head Teachers reported daily MDMS attendance to the National Informatics Centre (NIC), with 88% compliance to reporting requirements observed. The framework included provisions for monitoring and supervision at multiple levels, with nodal teachers designated at school level and higher administrative officials responsible for periodic inspections.

3. Key Factors Affecting Implementation

3.1 Facilitating Factors

3.1.1 Strong Administrative Support

Government of Karnataka demonstrated consistent political will and administrative support for the scheme throughout the study period. The existence of dedicated budgetary allocation, even for supplementary provisions like the Kshira Bhagya Yojana, indicated institutional commitment. Regular monitoring exercises, including Joint Review Missions by national authorities, provided external validation and corrective feedback.

3.1.2 Compliance Monitoring

The state implemented systematic monitoring through multiple mechanisms including daily attendance recording, regular school inspections, community participation, and video documentation of meal distribution. Compliance to Standard Operating Procedures (SoP) averaged 76% across sampled schools, with some divisions (particularly southern districts) achieving scores of 74-82%, indicating reasonably effective standardization.

3.1.3 Community Engagement

School Development and Management Committees, parents, and community members were engaged in program oversight. SDMC meeting attendance averaged 57%, providing community-level accountability. The involvement

of multiple stakeholders created a participatory framework for quality assurance.

3.2 Challenging Factors

3.2.1 Record-Keeping And Documentation

Significant variations existed in record maintenance across schools. While some schools maintained comprehensive documentation, others, notably in districts like Raichur, showed minimal compliance with register maintenance requirements. This inconsistency affected data reliability and program accountability.

3.2.2 Quality Assurance And Taste

While student satisfaction with meal taste averaged 94%, ensuring consistent quality across thousands of schools presenting logistical challenges. Central kitchens versus on-site preparation raised questions about meal quality and nutritional retention. Regular monitoring of taste and quality proved resource-intensive.

3.2.3 Video Documentation And Advanced Monitoring

The expectation for video documentation of MDMS conduct showed only 18% compliance, revealing gaps in implementing advanced monitoring technologies. This limitation affected the ability to remotely assess meal quality and process adherence.

3.2.4 Nutritional Content Verification

While prescribed nutritional standards existed, verifying actual nutritional content of meals across all schools proved challenging. Variations in food preparation, ingredient quality, and cooking methods could result in actual nutrient delivery differing from theoretical specifications.

3.3 Socio-Economic Contextual Factors

The effectiveness of MDMS was influenced by broader

socio-economic context. In rural areas with significant poverty and food insecurity, the scheme's impact was more pronounced. In urban areas, alternative food access and higher family incomes reduced relative benefit. School infrastructure, particularly kitchen facilities and water supply, influenced implementation feasibility. Teacher workload and support staff availability affected supervision quality.

4. Results And Key Findings

4.1 Impact On Academic Outcomes

4.1.1 School Enrollment

The MDMS demonstrated consistently positive impact on school enrollment throughout the study period. Baseline data from the period 2015-16 showed gradual but steady enrollment increases. In studied schools, enrollment increased from 90 students (2015-16) to 105 students (2019-20) in primary classes, with Class III-VI showing growth of 154 students (2018-19) to 159 students (2019-20). While growth rates appeared modest in absolute terms, relative growth rates and trend analyses demonstrated sustained improvement compared to pre-scheme periods. State-level data corroborated these findings, with multiple studies confirming MDMS implementation correlated with increased enrollment across beneficiary schools.

4.1.2 School Attendance And Dropout Reduction

Perhaps the most significant achievement of MDMS in Karnataka was its impact on attendance and dropout reduction. Average attendance rates reached 92% among MDMS beneficiary students, substantially above pre-scheme levels. The scheme's role in reducing chronic absenteeism was particularly pronounced in low-income households, where food insecurity previously contributed to irregular attendance. Dropout rates declined significantly following MDMS implementation, with retention rates improving noticeably. A

comprehensive evaluation by Karnataka Evaluation Authority noted that retention rates improved substantially, particularly for girls and scheduled caste/tribe students, addressing equity objectives.

4.1.3 Educational Performance And Learning Outcomes

Students receiving regular MDMS access demonstrated better classroom concentration and engagement. Teachers reported that hunger-related distractions reduced considerably post-MDMS implementation, allowing greater focus on academic content. While direct impact on standardized test scores showed mixed results in literature, qualitative improvements in classroom engagement and reduced hunger-related behavioral issues were consistently observed.

4.2 Impact On Nutritional Status

4.2.1 Anthropometric Measurements

Results on nutritional impact were mixed, consistent with broader national findings. Some studies showed marginal improvements in height and weight measurements following MDMS implementation. Height and weight assessments across studied schools revealed significant positive outcomes in approximately 60% of studies, while 40% showed only marginal improvement. Comparisons to Indian Council of Medical Research (ICMR) standards indicated that while MDMS provided nutritional supplement, many children still remained below standards for optimal growth.

4.2.2 Micronutrient Status

Mid-Upper Arm Circumference (MUAC) measurements, a sensitive indicator of protein-energy malnutrition, showed more consistent improvement. One study demonstrated marginal improvement, while another reported significant improvement in MUAC following MDMS implementation. The supplementary milk provision through Kshira Bhagya

Yojana particularly targeted micronutrient deficiencies, with potential impact on anemia reduction, though comprehensive impact evaluation data remained limited.

4.2.3 Underweight And Stunting Prevalence

Stunting (low height for age) and underweight status were evaluated in multiple studies. The findings suggested that while MDMS provided caloric supplementation, addressing underlying causes of chronic malnutrition (inadequate household diet quality, repeated infections, poor sanitation) required integrated interventions beyond meal provision alone. The prevalence of stunting and underweight remained higher than WHO standards in many beneficiary populations, indicating MDMS as necessary but insufficient standalone intervention.

4.3 Impact On Food Security And Household Economics

The MDMS provided daily nutrition security for nearly 5.35 million school-age children in Karnataka, representing critical food security support for vulnerable households. For low-income families, the scheme effectively provided one substantial meal daily, particularly important during school days when children would otherwise lack nutritious food. This nutritional security likely contributed to better health, reduced infections, and improved school engagement.

4.4 Gender And Equity Outcomes

The MDMS achieved important gender equity outcomes, particularly in districts with previously low girls' enrollment. Improved enrollment and retention of girls was documented, contributing to educational equity objectives. The scheme's universal coverage ensured that scheduled caste and scheduled tribe children, historically marginalized in educational access, benefited equally, promoting social equity.

5. Challenges And Gaps

Despite significant achievements, several challenges persisted:

- **Nutritional Adequacy:** While MDMS provided nutritional supplementation, it could not fully bridge nutritional gaps without simultaneous improvement in household dietary diversity and complementary interventions.
- **Quality Consistency:** Variations in meal quality and taste across thousands of schools created inconsistent beneficiary experience and potentially differential nutritional benefits.
- **Monitoring Limitations:** Advanced monitoring mechanisms remained underutilized, limiting real-time quality assurance and corrective action implementation.
- **Record Documentation:** Inconsistent record-keeping across schools affected accountability and impact evaluation.
- **Addressing Underlying Causes:** The scheme targeted symptoms (hunger, malnutrition) rather than underlying causes (poverty, inadequate household resources), requiring integration with broader poverty reduction and development programs.

6. Conclusion

The Mid-Day Meal Scheme in Karnataka (2015-2025) represents a successful large-scale social protection and nutrition program with demonstrated positive impacts on educational outcomes and food security. The achievement of near-universal coverage (92% of student population) across 54,839 institutions, serving 53.48 lakh children daily, reflects substantial institutional capacity development and sustained resource allocation. The scheme's most significant achievement lies in improving school enrollment, attendance, and retention, particularly among disadvantaged populations. Attendance rates reaching 92% and notable reductions in

dropout rates establish MDMS as effective intervention for educational access and equity. The provision of daily nutrition also reduced classroom hunger-related distractions, supporting improved learning environments. Nutritional impacts, while positive, were more modest than ideally sought. Improvements in micronutrient status and marginal gains in anthropometric measures suggest that while the scheme provides important nutritional supplementation, comprehensive malnutrition reduction requires integrated approaches addressing underlying socio-economic factors. For maximum impact in the next decade (2025-2035), policy recommendations include: (1) strengthening quality assurance mechanisms through improved monitoring and documentation, (2) enhancing nutritional adequacy through better meal design and quality control, (3) integrating MDMS with complementary health and development interventions, (4) expanding coverage to include pre-primary and vocational students, (5) leveraging technology for real-time monitoring and feedback, and (6) strengthening community participation in accountability mechanisms. The MDMS remains a cornerstone of Karnataka's commitment to social protection, educational equity, and child nutrition. Continued investment, coupled with strategic improvements in implementation quality and program integration, can enhance the scheme's effectiveness in contributing to sustainable development goals related to poverty reduction, health, and education.

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