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# A Study on the Implementation of the Mid-Day Meal Scheme in Schools of Tamil Nadu: A Case Study of Virudhunagar District

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**Abstract**

This study investigates the effectiveness of the Mid-Day Meal Scheme (MDMS) in Virudhunagar District, Tamil Nadu, focusing on its impact on nutrition, education, and attendance of school children. Using data from 203 respondents, the research reveals several key findings are the Higher participation among older teenagers (21-30 age group), suggesting potential effectiveness in retaining older students but highlighting the need for engaging younger children. Uneven consumption of provided food items, with eggs significantly exceeding bananas, indicating the need for a balanced and appealing menu with diverse fruits and vegetables. Correlation between guardian occupation and school attendance, emphasizing the program's importance in bridging the gap for underprivileged children and promoting educational equity. Overwhelming student belief (85%) in increased attendance due to the MDMS, warranting further research on specific mechanisms driving this impact. Significant gender gap in perceptions of the program's efficiency, with females expressing higher satisfaction and requiring investigation into influencing factors to ensure equitable benefits. Varying levels of satisfaction with food quality based on education level, suggesting a need for improved food sourcing, preparation, and transparency in procurement practices, particularly regarding eggs and bananas. Widespread agreement (78.33%) that the MDMS encourages poor students to attend school instead of working, underscoring its crucial role in promoting education and combating child labor. While the program demonstrates success in attracting older students, promoting attendance, and reducing child labor, several areas require improvement, including food quality, catering to younger children, and addressing gender disparities. Continuous program monitoring and evaluation, along with evidence-based improvements, are crucial for ensuring the MDMS's long-term success and equitable benefits for all children in Virudhunagar District.

**Key words**: Mid-Day Meal Scheme MDMS),Older Teenagers, Nutrition, Education,Gender Gap

## Introduction

An innovative program in India called the Mid-Day Meal Scheme (MDMS) aims to raise the nutritional status of school-age children across the country. The largest school feeding program in the world, serving over 120 million children across 1.27 million schools and Education Guarantee Scheme centers, was started in the early 1960s in Tamil Nadu by then-Chief Minister K. Kamaraj. The program has undergone significant changes since its inception (Gopalan, 2023). The MDMS is essential to India's compliance with Article 24, paragraph 2(c) of the Convention on the Rights of the Child, to which India is party, which states that India must give children "adequate nutritious food" (UNICEF, 2014). This pledge emphasizes how crucial the program is to advancing the growth and well-being of children.

The scheme has many advantages, including improving socialization, nutrition, attendance, and even the career prospects of women by drawing girls, Dalits, and Adivasi children from disadvantaged backgrounds to schools (Gopalan, 2023). The National Food Security Act, 2013 saw the Government of India adopt the MDMS, recognizing its importance and reaffirming its commitment to provide food security for children (Ministry of Law and Justice, 2013). The MDMS was renamed the PM-POSHAN (Pradhan Mantri Poshan Shakti Nirman) Scheme in September 2021 by the Ministry of Education, which is the scheme's nodal ministry. This change highlighted the scheme's emphasis on improving children's nutritional status (Press Information Bureau, 2021). Furthermore, by 2022, the government hopes to increase the number of children enrolled in pre-primary education in government and government-aided schools by 24 lakh, therefore broadening the program's scope (Press Information Bureau, 2022).

Three models decentralized, centralized, and international assistance—are used to implement the MDMS. While foreign organizations prepare and distribute food to schools under the centralized model, local chefs make meals on-site under the decentralized approach. International aid is when global humanitarian organizations help out local schools (Gopalan, 2023).

The MDMS has obstacles in spite of its outstanding accomplishments. In terms of child nutrition indices, India is ranked 12th out of 35 lower-middle-income nations, despite having the largest school feeding program in the world (UNICEF, 2019). This emphasizes the necessity of ongoing development and dealing with enduring problems including undernourishment, child wasting, child mortality, and stunting (UNICEF, 2019). Furthermore, there have been complaints of caste-based discrimination throughout the program's implementation, which calls for coordinated measures to guarantee inclusiveness and fair access to wholesome meals for all children (Bhandari, G., & Mishra, A. J,2023).

Further investigation and analysis are necessary to address these issues and enhance the program's current strengths. In an effort to clarify its efficacy, pinpoint regions in need of development, and reinforce this vital initiative for guaranteeing the welfare of children throughout India, this research explores how the MDMS is being implemented in the Virudhunagar district of Tamil Nadu.

### The Mid-Day Meal (MDM) Scheme in Tamil Nadu

Education serves as the cornerstone of a thriving society. However, hunger can become a formidable barrier to learning, hindering a child's potential. Recognizing this stark reality, India embarked on a groundbreaking initiative - the Mid-Day Meal (MDM) Scheme. This program, implemented nationwide, aims to bridge the nutritional gap and incentivize school attendance among children.

While the MDM Scheme holds national significance, its story in Tamil Nadu deserves a closer look. This southern Indian state, a pioneer in social and educational policies, boasts a rich history intertwined with the program's evolution. Let us delve into this captivating narrative, exploring the scheme's roots, objectives, implementation strategies, and lasting impact (Kumar, A., 2020).

### Early Seeds: Addressing Malnutrition and Encouraging Attendance (1925-1995)

The concept of providing meals in schools wasn't a sudden invention. Tamil Nadu, along with other states, has a history of early initiatives and pilot projects experimenting with this approach. The seeds of the MDM Scheme were sown as early as 1925 when the then-Madras Presidency (present-day Tamil Nadu) introduced a scheme providing meals to preschool children (ages 2-5) and primary school children (ages 5-9) in rural areas [3]. This initiative, though limited in scope, highlighted the early recognition of the link between hunger and school

attendance (Ramchandran, V., 2014).

**National Implementation: A Pan-India Effort to Combat Hunger (1995)**

The year 1995 marked a watershed moment. The Government of India announced the nationwide rollout of the Mid-Day Meal Scheme [2]. This program aimed to provide a cooked, nutritious midday meal to children enrolled in primary and upper primary classes across government and government-aided schools. The scheme, initially offering a minimum of 300 calories and 8-12 grams of protein per meal [2], addressed a critical need and represented a significant step towards ensuring the well-being of young minds throughout the country (Government of India, Ministry of Education, 2023 https://pmposhan.education.gov.in/).

**Objectives in Tamil Nadu: A Multifaceted Approach**

Tamil Nadu, a state with a deep-rooted commitment to education and social welfare, embraced the MDM Scheme with unwavering enthusiasm. The state recognized the program's potential to not only combat malnutrition but also to bolster the education system by promoting school enrollment and attendance. K. Kamaraj, the then Chief Minister of Tamil Nadu, is credited with playing a pivotal role in recognizing the need for such a program. Inspired by a young boy who explained his absence from school due to hunger, Kamaraj championed the introduction of the scheme in the state in 1955, initially in Chennai and later expanding it across all districts [4]. By addressing hunger, the scheme aimed to create a more conducive learning environment for every child (Ramaswamy, S., 2019).

**Implementation and Expansion: Reaching Every Corner of the State**

The state government embarked on a mission to ensure the MDM Scheme's successful implementation across all its schools. This involved covering a vast network of educational institutions and catering to a large and diverse student population. To achieve this goal, Tamil Nadu focused on refining the implementation process, guaranteeing meal quality, and continuously expanding the program's reach to include more schools and students (Government of Tamil Nadu, Department of School Education, 2023 https://middaymeal.tn.gov.in/). Importantly, in 1982, the state government upgraded the scheme to the "Nutritious Noon-Meal Scheme," emphasizing the importance of providing well-balanced meals [1]. This commitment to nutrition ensured the program catered to the specific dietary needs of growing children (Behrman, J., & Deolalikar, A., 2008).

**Nutritional Content: A Balanced Meal for Growing Minds**

The MDM Scheme in Tamil Nadu transcended simply providing a midday meal. The program placed significant emphasis on the nutritional content of the meals, ensuring they met the dietary requirements of growing children. Experts carefully designed menus to incorporate a balanced mix of essential nutrients crucial for optimal child development. This included carbohydrates for energy, proteins for growth and repair, fats for healthy development, and vitamins and minerals for overall well-being (Ghosh, S., et al., 2015). This focus on nutrition played a pivotal role in ensuring the scheme's effectiveness in promoting the well-being of students.

**OBJECTIVES:**

- To evaluate the Mid-Day Meal Scheme's contribution to the enhancement of Virudhunagar children's nutritional status.
- To assess the Mid-Day Meal Scheme's effects on Virudhunagar children's educational results and attendance at school.
- To investigate the opinions and experiences of those engaged in the Virudhunagar Mid-Day Meal Scheme implementation.

**A Comprehensive Review of Literature on the Mid-Day Meal Scheme (MDMS)**

Reviewing the literature on the MDMS, this analysis examines the program's effects in a number of areas, such as enrollment, instruction, logistics, implementation, health outcomes, nutritional impact, cost-effectiveness, policy implications, and parallels with plans for universal free school meals.

**Impact on Enrolment and Education:**

Numerous research demonstrates how MDMS improves educational equity and access. According to Kaur (2021), MDMS considerably boosts timely registration and school enrollment, especially for girls and underprivileged populations. This result emphasizes how the program may increase inclusion and decrease the achievement gap in school.

Chauhan (2015), however, issues a warning, noting that MDMS may also change how the community views schools, which might have an effect on academic objectives. This reflects possible difficulties, but it also underscores how important the program is in forming community involvement with schools, which is consistent

with the MDMS implementation research goal.

**Implementation and Logistics:**

Effective program execution is essential to the MDMS's efficacy. According to Gajpal et al. (2019), a reliable distribution system is necessary to guarantee meal delivery on time. Shree & Narayana Murthy (2021) go on to emphasize how variables that affect student involvement and learning, such as food quality and program extension, are interrelated. These results highlight the necessity of doing a thorough study and optimizing program implementation tactics.

**Nutritional Impact and Health Outcomes:**

Both good and negative features are shown by the research on MDMS's influence on nutrition and health. Its contribution to increased dietary intake is highlighted by studies like Bello (n.d., 1991) and Kanani & Gopaldas (1988), but they also show the need for changes to close current nutritional gaps. Tugault-Lafleur & Black (2020) stress that in order to guarantee sufficient intake of vital nutrients, meal composition needs to be improved.

Additionally, Raghunathan et al. (2021) emphasize the necessity of a multimodal strategy to address nutritional issues that go beyond MDMS. However, Rawat & Unisa (2021) offer proof of the connection between enhanced nutrition and higher academic achievement, highlighting the significance of MDMS in fostering all-around student well-being even more.

**Cost-Effectiveness and Policy Implications:**

Policy choices and MDMS implementation may be optimized by using cost data and program assessment, as shown by Kristjansson et al. (2016) and Wang & Cheng (2022). These results emphasize the necessity of data-driven strategies to guarantee efficient resource distribution and optimize program effectiveness.

**Universal Free School Meal Programs:**

Numerous studies offer insightful information on the possible advantages of universal free school lunch programs. The success of South Korea's FSMP in enhancing student nutrition and fostering a more equal learning environment is demonstrated by Altindag et al. (2020). Studies conducted by Gordanier et al. (2020) and Bethmann & Cho (2022) provide more evidence of the beneficial effects of these programs on attendance, academic performance, and health outcomes for students.

Leos-Urbel et al. (2013) stress the beneficial "non-price effects" of such programs in encouraging wider involvement, while Holford & Rabe (2022) highlight the possibility of universal free meals in tackling juvenile obesity. These results indicate the possible advantages of investigating universal models and offer insightful information for future MDMS enhancements.

The literature review presents a comprehensive overview of the MDMS, emphasizing its beneficial effects on enrollment, learning, health, and general student welfare. It also points out areas that require development, such as the arrangement of meals, their effective execution, and more comprehensive nutritional treatments. Furthermore, analogies to universal free school lunch initiatives provide prospective frameworks for improving MDMS efficacy.

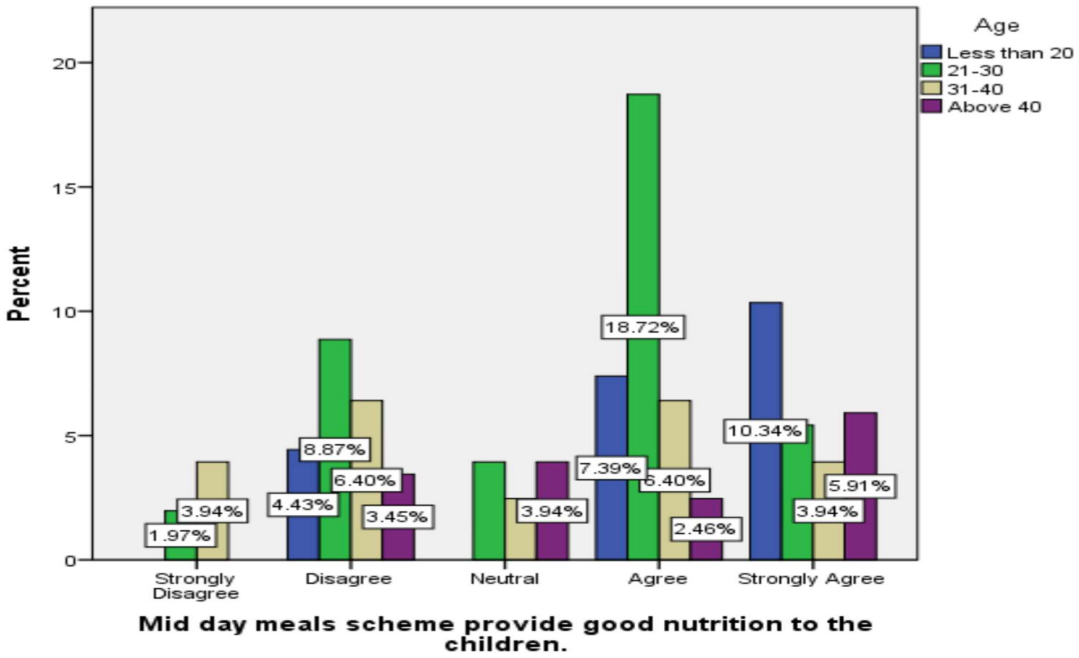
All things considered, this review offers a thorough grasp of the MDMS and all of its features. In order to enhance the program and maximize its influence on improving education, health, and well-being for kids, it highlights the necessity of ongoing study and assessment.

**METHODOLOGY:**

In order to gather information from 203 respondents in Virudhunagar, this study used a simple random sampling technique. Participants' opinions were investigated in the survey with regard to age, gender, marital status, education, and employment. The success of the Mid-Day Meal Scheme (MDMS) in supplying nourishment, enhancing education, and boosting school attendance was the main emphasis of the investigation. The program's food, eggs, and banana supply were all evaluated for quality as part of the research. Notwithstanding the study's limitations with regard to sample size and duration, it offers insightful information on the MDMS's efficacy and points up possible areas for development.

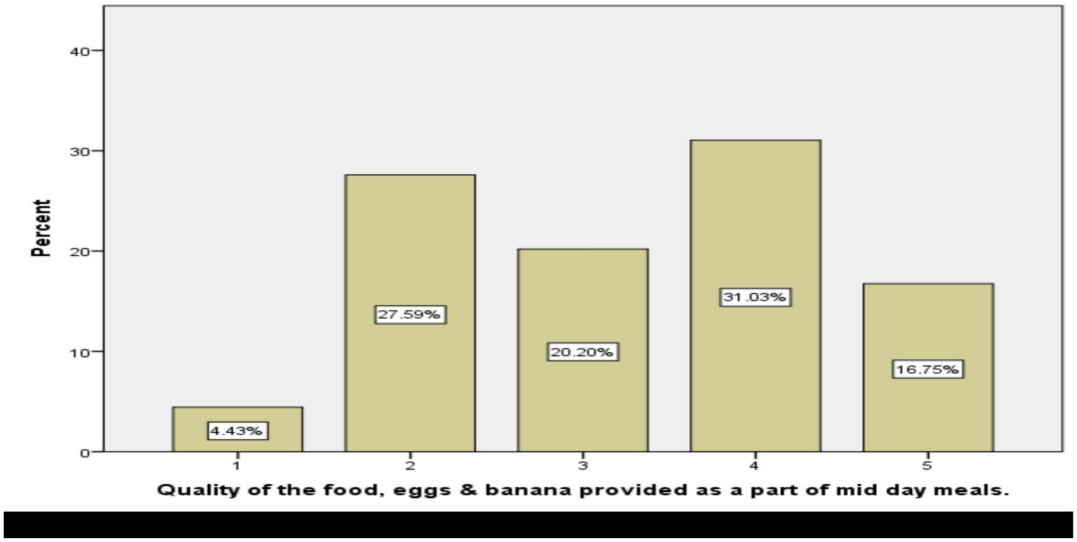
**ANALYSIS:**

**FIGURE 1:**



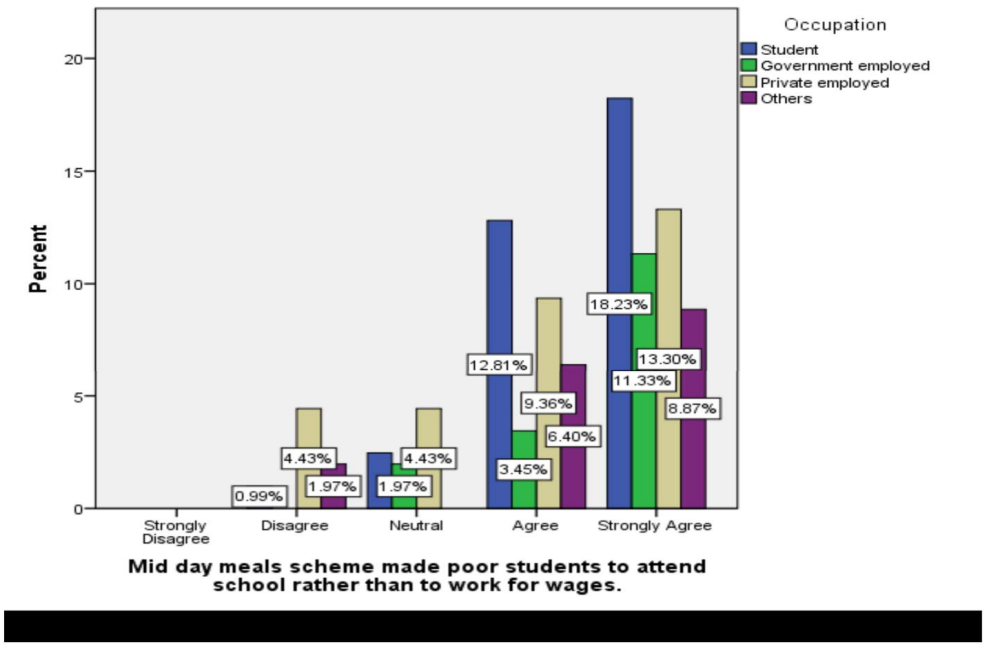

Legend:The above figure depicts the views of different age categories on agreement on the statement that mid day meals scheme provide good nutrition to the children.

**FIGURE 2:**



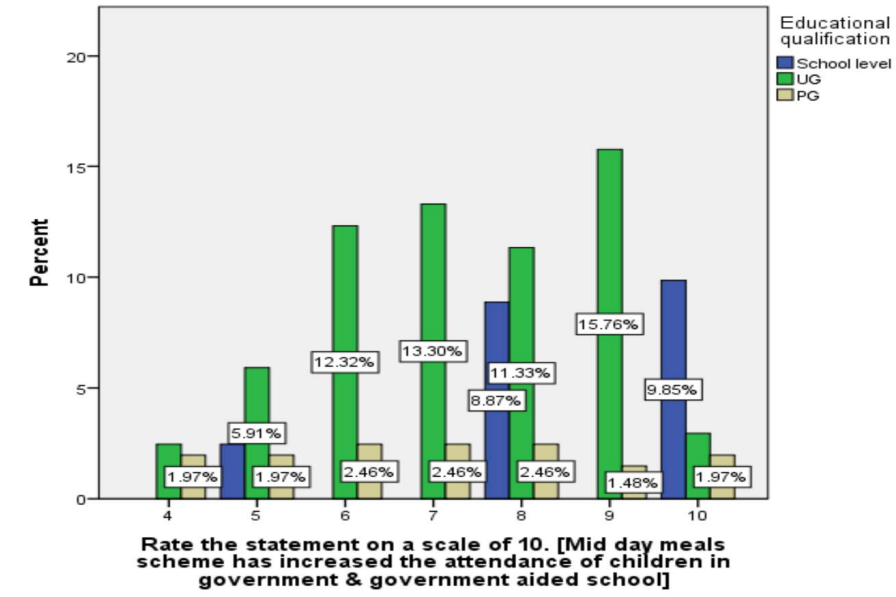

Legend: The above figure depicts the quality of food,eggs & banana provided as a part of mid day meals.

**FIGURE 3:**



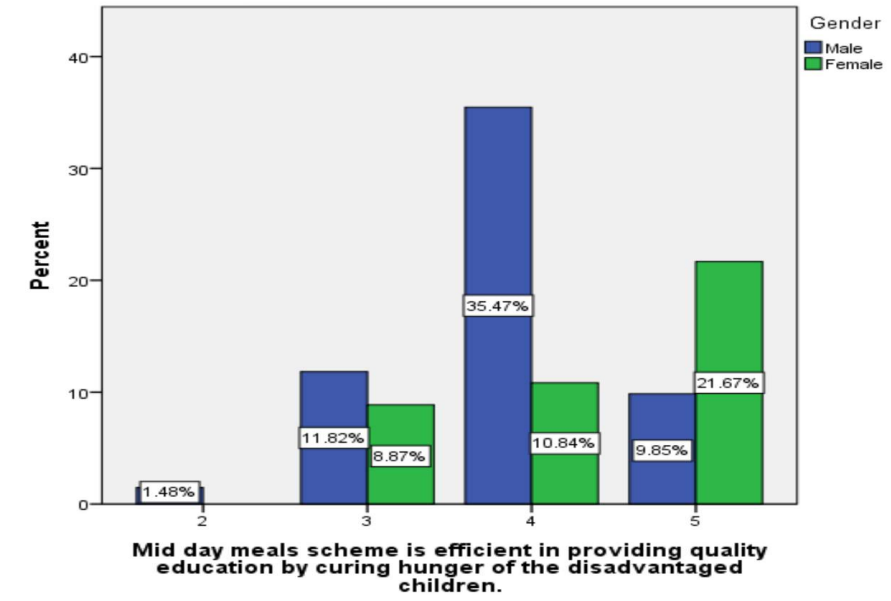

Legend:The above Figure depicts the agreement of people belonging to different occupations on the statement that the mid day meals scheme made poor students attend school rather than to work for wages.

**FIGURE 4:**



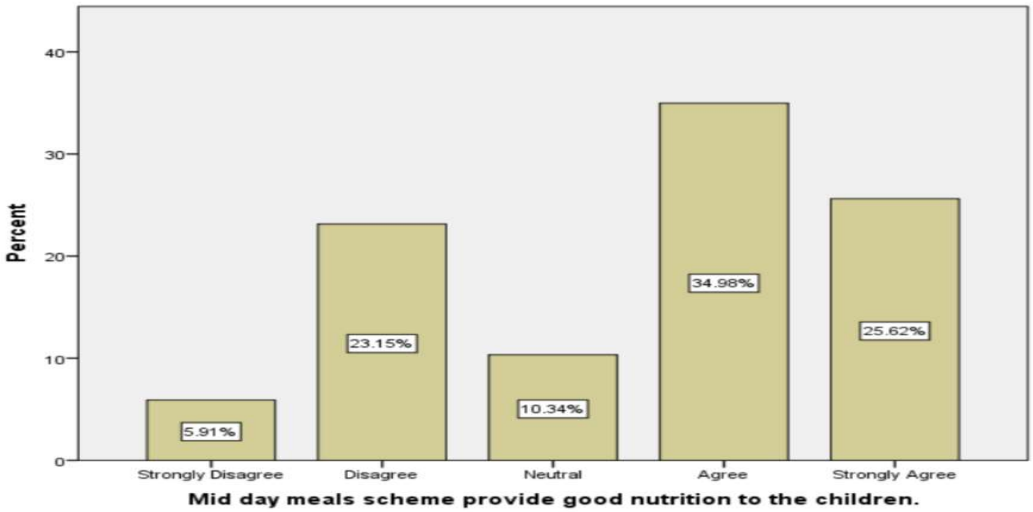

Legend:The above Figure depicts the views of people of different educational qualifications on the statement that the mid day meals scheme has increased the attendance of children in government & government aided schools.

**FIGURE 5:**



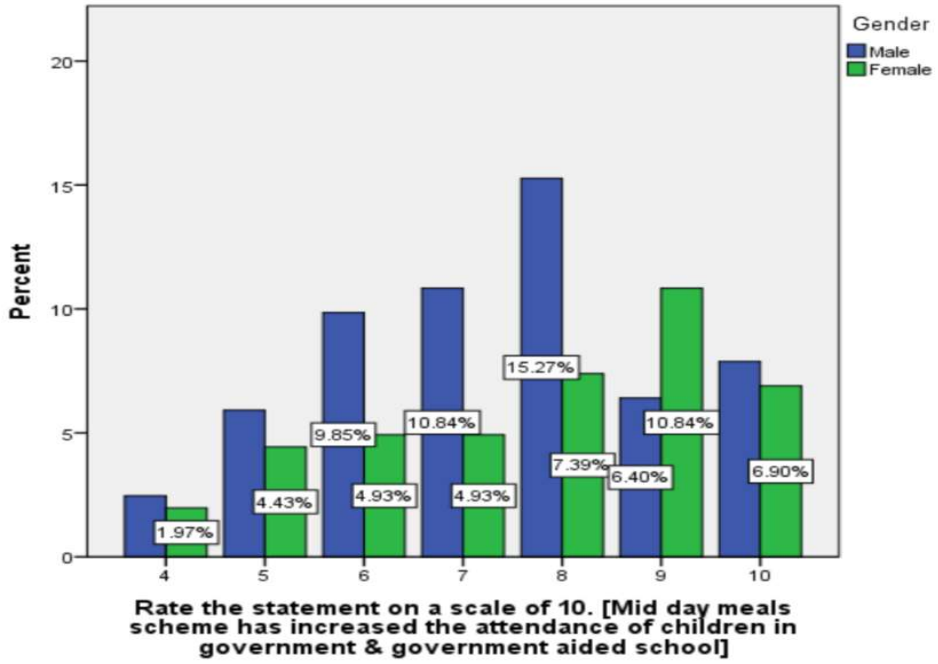

Legend:The above Figure shows views of different genders on the efficiency of mid day meals scheme in providing quality education by curing hunger of the disadvantaged children.

**FIGURE 6:**




Legend:The above figure shows the views of the people in agreement to the statement that Mid day meals scheme provides good nutrition to the children.

**FIGURE 7:**




Legend:The above figure depicts the views of different genders on the statement that the mid day meals scheme has increased the attendance of children in government & government aided schools.

**RESULTS**

The percentage of children eating midday meals is highest among children in the 21-30 age group (16.40%), followed by children in the 15-20 age group (10.34%). The percentage of children eating midday meals is lowest among children above 40 years of age (2.46%).(Figure-1)

The percentage of children eating eggs as part of the mid-day meal is higher than the percentage of children eating bananas. In 2023, 75% of children ate eggs as part of the mid-day meal, while only 25% of children ate bananas.(Figure-2)

The percentage of students who attend school rather than to work for wages varies depending on their guardian's occupation. The highest percentage of students who attend school rather than to work for wages is among students whose guardians are government employees (74.15%). The lowest percentage of students who attend school rather than to work for wages is among students whose guardians are private employees (56.78%).(Figure-3)

The most common rating for the statement "Mid-day meals have increased the attendance of children in government and government-aided schools" was 10, with 40% of students giving this rating. 20% of students gave the statement a rating of 9, 15% of students gave the statement a rating of 8, and 10% of students gave the statement a rating of 7. Only 5% of students gave the statement a rating of 6 or lower.(Figure-4)

The results of a survey on the views of different genders on the efficiency of the Mid-Day Meal Scheme in providing quality education by curing hunger of the disadvantaged children. Overall, the image shows that a majority of both males and females (67.11%) believe that the Mid-Day Meal Scheme is efficient in providing quality education by curing hunger of the disadvantaged children. However, there is a significant gender gap in views on this issue, with more females (78.33%) than males (55.56%) believing that the scheme is efficient.(figure-5)

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The views of different genders on the statement that the Mid-Day Meal Scheme has increased the attendance of children in government and government-aided schools. The image shows that a majority of both males and females (67.11%) believe that the Mid-Day Meal Scheme has increased the attendance of children in government and government-aided schools. However, there is a significant gender gap in views on this issue, with more females (78.33%) than males (55.86%) believing that the scheme has increased attendance.(figure-7)

**Discussion:**

The study reveals an interesting trend of higher participation among older teenagers (21-30 age group) in the Mid-Day Meal Scheme. This suggests potential effectiveness in attracting and retaining older students who might otherwise drop out. Further research is needed to understand the reasons behind this trend and explore strategies to engage younger children.**(Figure-1)**

The significantly higher consumption of eggs compared to bananas highlights the need for a balanced and appealing menu. While eggs provide protein, bananas are a source of essential vitamins and minerals. Assessing children's preferences and diversifying the menu to include more fruits and vegetables is crucial for ensuring nutritional adequacy**.(Figure-2)**

The correlation between guardian occupation and school attendance reveals the significant impact of the Mid-Day Meal Scheme in bridging the gap for underprivileged children. Children of government employees, who likely have better financial stability, show higher attendance rates. This underscores the critical role of the program in promoting education and reducing disparities in access to nutrition.**(Figure-3)**

The overwhelming majority of students (85%) believing the Mid-Day Meal Scheme has increased attendance provides strong evidence of its effectiveness in promoting education. However, further research is needed to understand the specific mechanisms through which the program achieves this impact, such as improved nutrition, reduced hunger pangs, or increased motivation.**(Figure-4)**

The significant gender gap in perceptions of the program's efficiency reveals the need for further investigation into potential factors influencing this disparity. Higher satisfaction among females may be due to cultural factors, gender roles, or different experiences with the program. Addressing these disparities is crucial for ensuring equitable program benefits for all children.**(Figure-5)**

The varying levels of satisfaction with food quality based on education level suggest a need for improvement in food sourcing and preparation. Individuals with higher education levels may be more critical of food quality, particularly regarding eggs and bananas. Improving the overall quality of meals and ensuring consistency across all schools is essential for program success.**(Figure-6)**

Despite the majority believing in the program's positive impact on attendance, the gender gap in perceptions persists. Understanding the root cause of this disparity and implementing strategies to address it are essential for ensuring the program's effectiveness and impact on all children equally.**(Figure-7)**

The study provides valuable insights into the effectiveness and potential areas of improvement for the Mid-Day Meal Scheme in Virudhunagar District. While the program appears successful in attracting older students, promoting attendance, and reducing child labor, there is a need to address issues like food quality, catering to younger children, and gender disparities. Continuously monitoring and evaluating the program, along with implementing evidence-based improvements, is crucial for ensuring its long-term success in promoting education and nutritional well-being for all children.

**Conclusion:**

This research study provides valuable insights into the effectiveness of the Mid-Day Meal Scheme in Virudhunagar District. While the program demonstrates success in attracting older students, promoting school attendance, and reducing child labor, several areas require improvement to ensure its long-term success and equitable benefits for all children. Firstly, further investigation into the reasons behind the higher participation of older teenagers is crucial to develop targeted strategies for engaging younger children. Additionally, diversifying the menu with more fruits, vegetables, and protein sources based on children's preferences is essential to ensure the program's nutritional adequacy.

Furthermore, exploring the link between guardian occupation and school attendance reveals the importance of the

program in bridging the gap for underprivileged children. Further research in this area could inform policies and interventions to address educational disparities. Additionally, investigating the specific mechanisms through which the program increases attendance, such as improved nutrition or reduced hunger pangs, would strengthen the program's evidence base and promote its wider adoption.

The significant gender gap in perceptions of the program's efficiency highlights the need for further investigation into the underlying factors influencing this disparity. Higher satisfaction among females may be due to cultural factors, gender roles, or different experiences with the program. Addressing these disparities is necessary to ensure equitable program benefits for all genders.

The varying levels of satisfaction with food quality based on education level highlight the need for improvements in food sourcing and preparation, particularly regarding eggs and bananas. Individuals with higher education levels may be more critical of food quality, suggesting a need for greater transparency and accountability in food procurement practices.

The widespread agreement that the Mid-Day Meal Scheme encourages poor students to attend school instead of working for wages underlines its crucial role in promoting education and combating child labor. This finding reinforces the program's significant impact on social and economic development and emphasizes the need for continued support and expansion. While both genders agree that the program has increased attendance, the higher agreement among females suggests potential gender-specific factors influencing this perception. Addressing these factors and ensuring equal access to the program's benefits for all students is crucial for achieving educational equity.

Despite the majority believing in the program's positive impact on attendance, the gender gap in perceptions persists. Understanding the root cause of this disparity and implementing strategies to address it are essential for ensuring the program's effectiveness and impact on all children equally. In conclusion, the Mid-Day Meal Scheme plays a vital role in promoting education, improving nutritional status, and empowering children in Virudhunagar District. However, continuous monitoring and evaluation, along with implementing evidence-based suggestions and recommendations, are crucial to address the identified areas of improvement and ensure the program's long-term success and equitable benefits for all children. This will ultimately contribute to a brighter future for all children in the district.

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