



Journal of Didactic Studies

Published by: Primary Teacher Education and Early Childhood Education study program
Universitas Pendidikan Indonesia, Cibiru Campus
Journal homepage: <https://ejournal.upi.edu/index.php/jds>



Implementation of Indonesia's Free Nutritious Meal Program: Challenges in Standard Operating Procedure Compliance and Its Implications for Early Childhood Health

Atria Eka Azzahra¹, Ira Anggraeni²

¹ Institut Agama Islam Tasikmalaya, Indonesia

² Universitas Muhammadiyah Tasikmalaya, Indonesia

Correspondence: E-mail: azzahraazh08@gmail.com

ABSTRACT

Indonesia's Free Nutritious Meal Program is a strategic policy aimed at improving children's nutritional status and supporting human capital development. However, food safety and compliance with *Standard Operating Procedures (SOPs)* remain major implementation challenges. This study aimed to analyze the implementation of the MBG program by examining SOP compliance and its implications for early childhood health. A *Systematic Literature Review (SLR)* following the *PRISMA 2020* guidelines was conducted using peer-reviewed journal articles, government regulations, and policy reports published between 2020 and 2026. The findings indicate that programme effectiveness depends on governance quality, intersectoral coordination, monitoring systems, and consistent implementation of SOPs throughout food procurement, preparation, and distribution. The conclusions suggest that weaknesses in institutional coordination, monitoring systems, human resource capacity, and food safety management remain major challenges that may compromise programme effectiveness and increase health risks. This study highlights SOP compliance as a strategic governance mechanism and recommends strengthening governance, monitoring, and institutional capacity to improve programme sustainability and protect early childhood health.

ARTICLE INFO

Article History:

Submitted/Received 10 Feb 2026

First Revised 06 Mar 2026

Accepted 04 May 2026

First Available online 28 May 2026

Publication Date 01 Jun 2026

Keyword:

Early childhood health,
Food safety governance,
Free nutritious meal program.

1. INTRODUCTION

Adequate nutrition is a fundamental prerequisite for children's physical growth, cognitive development, immune function, and learning readiness, particularly during early childhood. The first years of life represent a critical developmental period during which nutritional deficiencies may lead to irreversible consequences for brain development, educational attainment, and future productivity (Cohen Kadosh et al., 2021). Consequently, school feeding programmes have become one of the most widely implemented social protection strategies to improve children's nutritional status while promoting educational participation and human capital development. Recent global evidence indicates that school meal programmes currently reach approximately 466 million children worldwide and contribute significantly to improved dietary diversity, school attendance, classroom participation, learning outcomes, and social protection (Alderman et al., 2024).

Indonesia continues to face a complex nutritional challenge characterized by the triple burden of malnutrition, including undernutrition, micronutrient deficiencies, and overweight or obesity among children. These nutritional problems remain significant barriers to achieving sustainable human development and educational equity (Lameky, 2024). In response, the Government of Indonesia introduced the Free Nutritious Meal Program (MBG) as a strategic national policy designed to improve children's nutritional status, reduce health inequalities, and strengthen the quality of human resources. The programme is expected to support several Sustainable Development Goals (SDGs), particularly Zero Hunger (SDG 2), Good Health and Well-being (SDG 3), and Quality Education (SDG 4). UNICEF further emphasizes that the MBG programme is intended to strengthen nutrition interventions through schools and community-based platforms while accelerating improvements in child health and human capital development.

Although the MBG programme offers considerable opportunities to improve child nutrition and educational outcomes, its implementation presents substantial operational and governance challenges. Recent studies emphasize that the effectiveness of school feeding programmes depends not only on the availability of food but also on implementation quality, intersectoral coordination, monitoring systems, stakeholder engagement, and institutional governance (Ali et al., 2025; Bessie et al., 2025). Several reports have also highlighted concerns regarding food safety management, quality assurance, and governance mechanisms during programme implementation. These findings suggest that the success of MBG depends on robust governance systems capable of ensuring both nutritional adequacy and food safety throughout programme implementation.

A crucial component of programme implementation is compliance with Standard Operating Procedures (SOPs) throughout the food supply chain. SOPs regulate food procurement, storage, preparation, cooking, transportation, distribution, sanitation, hygiene, and quality assurance. Consistent adherence to these procedures minimizes food safety risks, prevents contamination, and ensures that meals meet established nutritional standards. Within public administration, SOP compliance also reflects the principles of good governance, including accountability, transparency, effectiveness, participation, and operational efficiency. Therefore, implementation fidelity should be regarded as a key determinant of programme success rather than merely an administrative requirement (Ginsburg et al., 2021).

The importance of food safety becomes even more critical in early childhood education settings. Children under six years of age possess developing immune systems and are physiologically more vulnerable to foodborne pathogens than older children and adults. Unsafe food consumption may lead not only to acute illnesses such as diarrhoea and food

poisoning but also to impaired cognitive development, reduced school attendance, decreased classroom participation, and long-term adverse health consequences. Recent evidence from Indonesian school feeding programmes confirms that adequate nutritional intake improves dietary diversity, nutrition knowledge, hygiene behaviour, and learning readiness among school children (Afifudin et al., 2025). Consequently, food safety should be recognized as an essential component of child protection and educational quality within school feeding programmes.

Previous studies have extensively examined the nutritional benefits of school feeding programmes, their contribution to educational achievement, and the policy implications of Indonesia's MBG initiative. Nevertheless, relatively few studies have specifically investigated Standard Operating Procedure compliance as a determining factor influencing food safety, programme effectiveness, and the protection of early childhood health. Existing literature has focused predominantly on policy objectives, nutritional outcomes, governance structures, or implementation management, while the relationship between implementation fidelity and child health protection remains underexplored (Bessie et al., 2025). This gap indicates the need for a more comprehensive synthesis of evidence concerning operational implementation and food safety governance.

Therefore, this study aims to review the implementation challenges of Indonesia's Free Nutritious Meal Program by focusing on compliance with Standard Operating Procedures and examining its implications for early childhood health. Through a comprehensive literature review, this study synthesizes current evidence regarding governance challenges, implementation barriers, food safety risks, and policy recommendations to strengthen programme effectiveness. The findings are expected to contribute to the development of evidence-based policies that ensure the MBG programme not only achieves its nutritional objectives but also protects children's health and supports sustainable educational development.

2. METHODS

This study employed a Systematic Literature Review (SLR) method based on the framework developed by Rethlefsen and Page (2022). This method was used to identify, select, critically evaluate, and systematically synthesize relevant scientific evidence regarding the implementation of the Free Nutritious Meals Program (MBG) in Indonesia. The review specifically focused on the extent to which compliance with Standard Operating Procedures (SOPs) influences food safety governance and its implications for early childhood health. The PRISMA 2020 framework was adopted to ensure methodological transparency, reproducibility, and rigor throughout the review process, enabling a structured identification, screening, eligibility assessment, and inclusion of relevant studies while minimizing potential selection bias (Page et al., 2021). This methodological approach is considered appropriate for synthesizing evidence from diverse empirical studies and policy documents to generate comprehensive insights into complex public health and education interventions.

The literature search was conducted systematically across several international and national electronic databases, including Scopus, Web of Science, PubMed, ScienceDirect, SpringerLink, ERIC, and Google Scholar, complemented by official publications from the World Health Organization (WHO), United Nations Children's Fund (UNICEF), World Food Programme (WFP), Food and Agriculture Organization (FAO), and Indonesia's National Nutrition Agency (Badan Gizi Nasional). The search strategy employed Boolean operators (AND, OR) using combinations of the keywords "Free Nutritious Meal Program," "School Feeding Program," "Standard Operating Procedure," "Food Safety," "Food Safety

Governance," "School Nutrition," "Early Childhood Health," "Nutrition Policy," and "Indonesia." To ensure that the review reflected the most current scientific evidence and policy developments, only publications published between 2020 and 2026 in English or Indonesian were considered. Studies were included if they addressed programme implementation, food safety management, governance mechanisms, SOP compliance, or health outcomes related to school feeding programmes. Editorials, opinion papers, conference abstracts, duplicate publications, and studies lacking methodological transparency or direct relevance to the research objectives were excluded from the review.

Following the identification stage, all retrieved records underwent title and abstract screening, followed by full-text eligibility assessment based on predefined inclusion and exclusion criteria. Information extracted from each eligible study included bibliographic characteristics, research objectives, methodological approaches, study settings, participant characteristics, governance dimensions, implementation barriers, food safety issues, compliance with Standard Operating Procedures, and reported health or educational outcomes. The methodological quality of the selected studies was critically appraised to ensure the credibility and reliability of the synthesized evidence before data extraction was completed. Subsequently, the extracted data were analyzed using thematic analysis, following the procedures proposed by (Braun et al., 2022), involving familiarization with the data, initial coding, theme generation, theme refinement, and interpretation. The synthesis was undertaken to identify recurring patterns regarding governance challenges, operational constraints, implementation fidelity, food safety risks, and policy implications. The final findings were interpreted within the framework of public health, food safety governance, and educational policy to formulate evidence-based recommendations aimed at strengthening SOP compliance and improving the effectiveness of Indonesia's Free Nutritious Meal Program in protecting the health and well-being of young children.

3. RESULTS AND DISCUSSION

3.1. Characteristics of the Reviewed Literature

Based on the literature identification process using the PRISMA 2020 guidelines, articles were obtained from various international and national scientific databases discussing the implementation of the Free Nutritional Meals Program (MBG), food security, program governance, and early childhood health (Nur et al., 2024). After going through the process of identification, screening, eligibility assessment, and selection based on inclusion and exclusion criteria, a number of articles were identified that met the requirements for in-depth analysis. The reviewed literature consisted of empirical articles, policy studies, systematic literature reviews, and international organization reports published during the 2020–2026 period (Jeong et al., 2021).

The results of the synthesis indicate that most research still focuses on the benefits of school meal programs on improving nutritional status, academic achievement, and equitable access to nutritious food. Conversely, research specifically addressing compliance with Standard Operating Procedures (SOPs) as a determinant of food security and successful program implementation is relatively limited (Anggraeni et al., 2025). This situation indicates a research gap, particularly in linking aspects of governance, SOP compliance, and early childhood health protection. This finding aligns with (Nugroho et al., 2025) stated that the success of the school meal program is not only determined by the provision of food, but also by policy stability, multi-stakeholder coordination, food management systems, and ongoing evaluation mechanisms.

3.2. Challenges in Implementing the Free Nutritional Meal Program

The review shows that the implementation of the Free Nutritional Meal Program is a cross-sectoral policy involving the central government, local governments, the National Nutrition Agency, educational institutions, food providers, health workers, and the community. This complexity of actors means that program implementation requires strong institutional coordination to ensure effective food distribution, quality control, and compliance with food safety standards (BP et al., 2025).

Various studies indicate that the main implementation challenges include unprepared infrastructure, limited human resource capacity, weak inter-agency coordination, suboptimal monitoring systems, and varying capacities of local governments to implement national policies. MBG governance still faces challenges in the form of an overly centralized approach, necessitating strengthened coordination, transparency, and accountability in its implementation (Kuswantoro & Anggraeni, 2022). Successful coordination between schools and the Nutrition Fulfillment Service Unit (SPPG) is greatly influenced by clear role divisions, inter-agency communication, and integrated reporting mechanisms (Sede et al., 2025).

These findings show that the success of MBG implementation is not only determined by the size of the budget or the amount of food distributed, but also by the quality of governance, organizational readiness, and the effectiveness of the monitoring system (Marliani et al., 2021).

3.3. Compliance with Standard Operating Procedures as a Pillar of Food Safety

The literature synthesis shows that compliance with Standard Operating Procedures (SOP) is the main factor in ensuring food safety in the Free Nutritious Meal Program. SOP covers all stages of implementation, starting from food procurement, storage, processing, distribution, presentation, to food sanitation and hygiene. Consistent implementation of SOPs plays an important role in preventing biological, chemical and physical contamination that can endanger the health of beneficiaries (Fikri, 2025).

Several studies report that various implementation obstacles are still found in aspects of food quality control, staff competency, and supervision of food providers. Sibuea et al. (2025) shows that there are still serious challenges in implementing food safety standards due to non-compliance with operational procedures in several MBG organizing units, thereby potentially increasing the risk of foodborne diseases. Raamdhani et al. (2025) also emphasized that strengthening food safety governance must be carried out through kitchen certification, officer training, food safety audits and a sustainable monitoring system. From a good governance perspective, SOP compliance is a form of public accountability because it guarantees that every stage of service is carried out in accordance with standards of quality, safety and protection of the community (Anggraeni, 2024b).

3.4. Implications for Early Childhood Health

The literature reviewed shows that young children are the group most vulnerable to food safety risks because their immune system and digestive organs have not developed optimally (Azwinfadhlani et al., 2023). Food that does not meet food safety standards can cause diarrhea, food poisoning, impaired absorption of nutrients, and inhibit children's growth and cognitive development (Sibuea et al., 2025).

On the other hand, various studies show that if the school meal program is implemented according to food safety standards, the benefits obtained are very significant, including improving nutritional status, diversity of food consumption, learning concentration, readiness to participate in learning, and children's cognitive development. Evaluation of school meal

programs in Indonesia also shows that quality implementation can improve the learning environment and healthy living behavior of students (Achmad et al., 2025).

Thus, food safety must be positioned as the main component in the implementation of the Free Nutritious Meal Program. The success of the program is not only measured based on the number of beneficiaries, but also the program's ability to ensure food safety so that the goal of improving the quality of children's health and education can be achieved in a sustainable manner (Anggraeni, 2024).

4. CONCLUSION

This study concludes that the successful implementation of Indonesia's Free Nutritious Meal Program is determined not only by the provision of nutritious meals but also by the effectiveness of governance and strict compliance with Standard Operating Procedures (SOPs) throughout the food supply chain. The literature synthesis demonstrates that weaknesses in institutional coordination, monitoring systems, human resource capacity, and food safety management remain major challenges that may compromise programme effectiveness and increase health risks, particularly for early childhood, who are physiologically more vulnerable to foodborne diseases.

The novelty of this study lies in positioning SOP compliance as a central governance determinant that integrates food safety, programme implementation, and early childhood health protection, an aspect that has received limited attention in previous studies, which have primarily emphasized nutritional outcomes and policy implementation. This perspective extends the existing body of knowledge by proposing that food safety governance should become an integral component of school feeding policies rather than merely an operational requirement. Therefore, strengthening intersectoral governance, institutional accountability, standardized food safety monitoring, and continuous capacity building for programme implementers is essential to improve programme quality and sustainability. Future research is recommended to validate this conceptual framework through empirical studies assessing the relationship between SOP compliance, food safety performance, and health outcomes among beneficiaries across different regions of Indonesia.

5. AUTHORS' NOTE

The authors declare that there are no conflicts of interest regarding the publication of this article. This manuscript is an original work that has not been published previously and is not under consideration for publication elsewhere. All data and information presented in this study were obtained from publicly available scientific publications and official policy documents, which have been appropriately cited in accordance with academic standards.

6. REFERENCES

- Achmad, I. A., Emirati, E., dan Basra, J. (2025). Polemik program makan bergizi gratis (MBG) dan kesenjangan akses pada sekolah nonformal: Studi kasus PKBM dalam program paket A. *Jurnal Ilmiah Multidisiplin Mahasiswa dan Akademisi*, 1(4), 24–32.
- Afifudin, A. F. M., Pramesti, H. N., Irawanto, R., Sari, A., Soegianto, A., Affandi, M., and Payus, C. M. (2025). Spatial distribution and risk assessment of heavy metal contamination in western Madura strait sediments. *Results in Engineering*, 26, 105157.
- Alderman, H., Bundy, D., and Gelli, A. (2024). School meals are evolving: has the evidence kept up?. *The World Bank Research Observer*, 39(2), 159-176.

- Ali, A., Rosniati, R., Ifadah, E., Sari, N. M. S., Sujati, N. K., Larasati, A. D., Suantika, P. I. R., dan Pendet, N. M. D. P. (2025). *Buku ajar keperawatan medikal bedah*. PT. Sonpedia Publishing Indonesia.
- Anggraeni, I. (2024b). Pengelolaan komposter untuk anak usia dini: Mengubah kesadaran lingkungan dan pengurangan sampah. *WISDOM: Jurnal Pendidikan Anak Usia Dini*, 5(1), 15–27.
- Anggraeni, I., Ramdani, A., and Hidayah, C. (2025). Eco-literacy in ECE: A case study of climate change awareness in Indonesia. *EduBase: Journal of Basic Education*, 6(1), 126–135.
- Azwinfadhlan, A., Rahmiwati, A., Windusari, Y., dan Novrikasari, N. (2023). Study literature tentang dampak pendidikan keamanan pangan terhadap kesehatan anak usia sekolah dasar di Indonesia. *Jurnal Keperawatan*, 15(4), 125-132.
- Bessie, E. O., Kase, P., Fallo, A., and Wijayanti, N. S. (2025). Implementation of the supplementary feeding program for toddlers experiencing stunting. *JIAP: Jurnal Ilmu Administrasi dan Pemerintahan Indonesia*, 6(1), 74-86.
- BP, S. M., Darmawan, R. A., Muhadz, M. L., Soerjatisnanta, H., dan Prayoga, S. (2025). Strategi pencegahan risiko potensial pada program makanan bergizi gratis: Peran dasar hukum formal dan supervisi kualitas pangan yang komprehensif dan berkelanjutan. *Jurnal Pendidikan Sejarah dan Riset Sosial Humaniora*, 5(2), 433-442.
- Braun, V., Clarke, V., and Hayfield, N. (2022). A starting point for your journey, not a map: Nikki Hayfield in conversation with Virginia Braun and Victoria Clarke about thematic analysis. *Qualitative Research in Psychology*, 19(2), 424–445.
- Cohen Kadosh, K., Muhandi, L., Parikh, P., Basso, M., Jan Mohamed, H. J., Prawitasari, T., Samuel, F., Ma, G., and Geurts, J. M. (2021). Nutritional support of neurodevelopment and cognitive function in infants and young children—an update and novel insights. *Nutrients*, 13(1), 199.
- Fikri, A. (2025). Program makan bergizi gratis (MBG) dalam perspektif konstitusionalisme. *Justicia Sains: Jurnal Ilmu Hukum*, 10(2), 437–459.
- Ginsburg, L. R., Hoben, M., Easterbrook, A., Anderson, R. A., Estabrooks, C. A., and Norton, P. G. (2021). Fidelity is not easy! Challenges and guidelines for assessing fidelity in complex interventions. *Trials*, 22(1), 372.
- Jeong, J., Franchett, E. E., de Oliveira, C. V, Rehmani, K., and Yousafzai, A. K. (2021). Parenting interventions to promote early child development in the first three years of life: A global systematic review and meta-analysis. *PLoS Medicine*, 18(5), e1003602.
- Kuswanto, A., and Anggraeni, I. (2022). Pengelolaan arsip kartografi di dinas kearsipan dan perpustakaan Provinsi Jawa Tengah. *EVOKASI: Jurnal Kajian Administrasi dan Sosial Terapan*, 1(2), 81–89.
- Lameky, V. Y. (2024). Stunting in Indonesia: Current progress and future directions. *Journal of Healthcare Administration*, 3(1), 82-90.
- Marliani, L., Sukmawati, I. K., Juanda, D., Anjani, E., dan Anggraeni, I. (2021). Penapisan fitokimia, kadar kurkuminoid dan aktivitas antibakteri temu hitam (*Curcuma aeruginosa* (Christm Roscoe.), temu putih (*Curcuma zedoaria* Roxb.) dan temulawak (*Curcuma*

- xanthorrhiza Roxb.). *Herb-Medicine Journal: Terbitan Berkala Ilmiah Herbal, Kedokteran Dan Kesehatan*, 4(1), 57–64.
- Nugroho, A. A., Sudrajat, A., Azmi, I. F., Ardiansyah, F., and Prasetyanti, R. (2025). Collaborative governance in Indonesia's nutritious food policy: A multi-stakeholder implementation model. *Jurnal Borneo Administrator*, 21(2), 203-218.
- Nur, M., Anggraeni, I., dan Risna, I. (2024). Persepsi orang tua PAUD dalam mempersiapkan anak memasuki jenjang pendidikan dasar. *Jurnal Inovasi dan Teknologi Pendidikan*, 3(1), 199–207.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *Bmj*, 372.
- Raamdhani, F. A., Cornelis, V. I., Astutik, S., and Handayati, N. (2025). The legal impact of free nutritious food programs due to mass poisoning in East Java region reviewed from a human rights perspective. *Eduvest-Journal of Universal Studies*, 5(12), 10527-10555.
- Rethlefsen, M. L., and Page, M. J. (2022). PRISMA 2020 and PRISMA-S: common questions on tracking records and the flow diagram. *Journal of the Medical Library Association: JMLA*, 110(2), 253.
- Sede, R., Waso, A., Sunbanu, C., Talonggoe, D., Jehamat, L., Nahak, I., dan Mite, P. S. (2025). Analisis sosiologi konflik akibat kasus keracunan program makan bergizi gratis: Antara kebijakan dan keselamatan. *Jurnal Sosiologi Kontemporer*, 5(2), 61–67.
- Sibuea, P., Sihombing, D. R., Daniela, C., dan Pandiangan, M. (2025). Tata kelola penyelenggaraan makan bergizi gratis untuk mencegah keracunan makanan. *Jurnal Riset Teknologi Pangan dan Hasil Pertanian (RETIPA)*, 26-39.
- UNICEF (2024). The state of food security and nutrition in the world 2024.