

Optimizing the Demographic Bonus Through Quality Primary Education: A Pathway to Health and Nutrition Goals in Indonesia

Jimi Priyo Assidiq^{1*}

ABSTRACT

Indonesia is currently benefiting from a demographic bonus, marked by a larger proportion of the working-age population compared to non-productive age groups. This demographic window presents a strategic opportunity to accelerate national development through early investment in human capital. Primary education plays a vital role, not only in developing cognitive abilities but also in promoting health awareness and improving child nutrition. This study explores the contribution of quality primary education to national health and nutrition outcomes, the challenges of integrating these aspects into the education system, and collaborative strategies for enhancing cross-sectoral synergy. Using a literature review method, the study analyzes policy documents, research reports, and secondary data from national and international sources. The findings reveal that the integration of health literacy, inclusive nutrition programs, and adaptive learning models in primary education can foster greater health awareness in families and communities. However, significant challenges persist, including unequal access to education, limited teacher competencies in health and nutrition, inadequate infrastructure, and weak intersectoral coordination. Addressing these issues requires collaborative strategies that position primary education as not only an academic platform but also a vehicle for long-term health interventions. Strengthening the synergy between the education and health sectors is essential to building a healthy, productive generation in support of Indonesia's Golden Vision 2045.

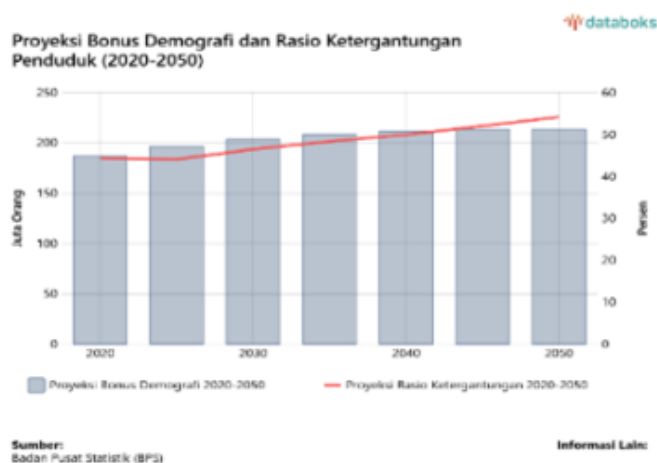
Keywords: Primary education, health literacy, child nutrition, demographic bonus, cross-sectoral strategy

1 Introduction

Indonesia is currently experiencing a demographic bonus phase, which is expected to peak in 2045, when the number of people of productive age will exceed those of non-productive age. This presents a strategic opportunity to accelerate national development through proper investment in human resource development from an early age. One such strategic investment is quality basic education, along with health, both of which are essential to improving individual productivity [1]. The projection of Indonesia's demographic bonus is shown in

¹ Universitas Muhammadiyah Malang

*Alamat korespondensi: priyojimmy91@gmail.com



Gambar 1. Projection of Demographic Bonus and Population Dependency Ratio

Basic education plays a crucial role not only in developing children's academic and cognitive skills but also in instilling healthy habits and nutritional awareness. Health and nutrition literacy introduced in basic education can promote clean and healthy living behaviors, prevent stunting, and encourage family and community participation in building a healthy environment. Investment in quality education is necessary to fully leverage the demographic bonus [3], aiming to produce competent, healthy, and highly competitive human resources. Children's behavior is shaped significantly by basic education (microsystem), which influences health behavior through cross-system interactions [4].

Improving Indonesia's education system is essential for developing human resources, with a focus on competency-based training and skills development to meet future economic challenges [5]. In addition to education, improving health and nutrition is a key factor in achieving the vision of Golden Indonesia 2045. The success of the demographic bonus depends on good health and quality education [6]. Nutrition education at the elementary level is critical for forming healthy eating habits from an early age [7], enabling children to lead healthier lives. Health education is vital to reducing stunting prevalence and improving overall health, which directly contributes to productivity [8].

This research aims to analyze the role of quality basic education in improving national health and nutrition through cross-sectoral collaboration. The method used is a literature review, analyzing policy documents, research reports, and secondary data from relevant national and international sources.

2 Result and Discussion

Based on the initial search results, several articles and journals were found that align with the theme and can be reviewed in this research. However, this study requires criteria to homogenize various different articles to avoid an overwhelming number of sources that could hinder the research's success.

Tabel 1. Inclusion Criteria for Research

Criteria	Inclusion
Timeframe	Publications from the last 5 years (2019 to 2024)
Language	Indonesian / Foreign Language
Subject	Education, child health and nutrition, demography
Article Type	Full-text articles
Article Theme	Optimization of the Demographic Bonus Through Quality Basic Education as a Path Toward Health and Nutrition Goals in Indonesia

This study uses secondary data from previous research, including books and scientific articles. Data was collected through document analysis of literature published within the last five years, focusing on optimizing the demographic bonus through quality basic education for health and nutrition goals in Indonesia. Sources were selected from credible databases like Google Scholar, ResearchGate, and other trusted journals through a systematic review process.

Literature Search: Using keywords such as "basic education," "demography," and "child health and nutrition" in both English and Indonesian.

After determining the criteria for the articles to be used, the researcher selected four articles related to the theme, which are presented in Table 1.2.

Tabel 2. Selected Studies

No	Title	Writer & Year	Results
1	Meta Analisis Pengaruh Makanan Bergizi Terhadap Stunting pada Balita di Indonesia	Hasna Ula Nur Azizah & Setyabudi Indartono (2019)	The demographic bonus will not yield significant results if a country makes minimal investments in human resources, as the key to success lies in improving the quality of education and health conditions. Efforts should focus on providing broad educational opportunities and easy access to education and healthcare, supported by adequate infrastructure.[9]
2	Meta Analisis Pengaruh Makanan Bergizi Terhadap Stunting pada Balita di Indonesia	Sahala Antoni Purba, Hardiansjah Sugiana, Fatma Tresno Ingtyas, Laurena Ginting (2025)	Various factors are interrelated, such as diet, nutritional intake, and parenting patterns in contributing to the increase in stunting, several things must be considered in reducing stunting Optimal infant nutrition Continued nutritional assistance Calorie intake and diversity Frequency and quality of meals Social and economic factors Synergy between family, health workers and community is key in ensuring children get optimal nutrition [10]
3	Potensi Inovasi Indonesia di Tengah Bonus Demografi : Menjawab Tantangan Global	Syakirul Niam, Budi Utami (2024)	Policy reforms must be carried out in depth in the areas of education, technology and research and development. These investments are crucial for improving workforce skills, strengthening technological infrastructure and encouraging innovation through forward-looking policies. [11]
4	Improving Child Nutritional Status in Order to Fill the Demographic Dividend in East Java Province, Indonesia	Lutfi Agus Salim (2020)	One of the efforts that has a significant impact and serves as a key factor in improving the quality of human resources is enhancing nutritional status. At the individual level, nutritional status is influenced by nutrient intake and related infections, while at the family and community levels, it is affected by knowledge, attitudes, and skills. Nutrition problems occur throughout all stages of the human life cycle, with the first two years of life being especially critical for a child's growth [12]

Based on the results of the article search related to the theme, four articles were found that align with the current topic. It can be concluded that basic education, health, and policy reform are crucial in addressing the demographic bonus era Indonesia is currently experiencing.

The first article, The demographic bonus cannot be fully utilized without strong investment in human resources. Key success factors include improving education and health to produce a productive young generation. Policies may include expanding access to education, providing adequate infrastructure, and promoting healthy families with proper nutrition as a foundation for quality human resources.

The second article discusses the rise of stunting among Indonesian toddlers due to poor nutrition. Contributing factors include irregular eating habits, inadequate nutrient intake, and parenting styles. To reduce stunting, focus is needed on proper infant nutrition, meal quality and frequency, and addressing social and economic issues. Stunting must be tackled as it has long-term impacts on child development.

The third article focuses on Indonesia's potential in the demographic bonus era, emphasizing the need for deep policy reform in education—particularly basic to secondary education—advancement of technology across all regions, and conducting research on human resource development to unlock potential. This investment is crucial for enhancing the skills of the current productive-age workforce, strengthening technological infrastructure, and promoting innovation through forward-looking policies.

The fourth article emphasizes that children's nutritional status is crucial for developing quality human resources. It is influenced by nutrient intake, illness, and family knowledge and skills in providing nutritious food. The first two years of life are critical, as poor nutrition during this period can cause lasting health and development problems.

3 Conclusion

Based on the literature review, several key conclusions have been drawn:

1. Basic education should promote health by integrating health literacy into the curriculum, making schools key to shaping a healthy generation.
2. Inclusive nutrition programs improve student health and learning, addressing issues like malnutrition and stunting, and should be implemented equitably in schools.
3. Health and nutrition education must adapt to local cultures and needs to be effective.
4. Cross-sector collaboration—through shared planning and resources—is vital for schools to become community health hubs.
5. Key challenges include limited access, lack of teachers, poor facilities, and weak coordination, all of which must be addressed to strengthen schools' role in health promotion.

Basic education plays a highly strategic role as the main platform for promoting children's health and nutrition. This includes integrating health literacy into the curriculum and implementing inclusive nutrition programs. Cross-sector collaboration between the education and health sectors—through joint planning, resource sharing, and policy alignment—is critically important. However, various challenges such as unequal access, limited teacher capacity, and weak coordination must be addressed. With strong commitment and synergy among stakeholders, schools can become effective health service centers and contribute to shaping a future generation that is healthy, intelligent, and productive.

References

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