Trends in Stunting Prevalence in East Java (2019-2023):
A Comprehensive Analysis

Diana Sukmawati Hasan[*]
Faculty of Nursing, Universitas Airlangga, Surabaya, Jawa Timur, Indonesia

*Correspondence: diana.sukmawati.hasan-2022@fkp.unair.ac.id

Abstract:

This study aims to analyze the trends in stunting prevalence in East Java from 2019 to 2023. Using a quantitative approach, secondary data from the Monitoring Implementation of the Eight Convergence Actions for Integrated Stunting Reduction Interventions, provided by the Directorate General of Regional Development at the Ministry of Home Affairs, was employed. A descriptive quantitative analysis was conducted to interpret the data. The findings reveal a significant decline in stunting prevalence, particularly from 2021 onwards, highlighting the effectiveness of targeted interventions. Despite ongoing challenges in districts such as Pasuruan and Batu, which still report high stunting rates, the overall stunting prevalence in East Java decreased notably, from 11.5% in 2019 and 2020 to 6.9% in 2023. Urban areas like Surabaya and Mojokerto demonstrated the lowest stunting rates, offering evidence of the success of integrated strategies. These results emphasize the need to maintain and expand stunting reduction efforts, particularly in regions with persistently high rates. Policymakers are encouraged to tailor interventions based on regional needs, leveraging successful strategies from areas with low stunting prevalence. Additionally, cross-sectoral collaboration, including enhanced access to healthcare, nutrition, and early childhood development programs, is essential to sustaining recent progress.

Keywords: Stunting Prevalence, East Java, Stunting Reduction Strategies, Regional Disparities, Integrated Interventions.

1. Introduction

Stunting is one of the most pressing public health challenges in developing countries, particularly in regions where poverty, inadequate nutrition, and limited access to healthcare services persist. Stunting, as defined by the World Health Organization (WHO), occurs when a child's height-for-age is more than two standard deviations below the WHO Child Growth Standards median (Hasan & Muhammad, 2023; Marume et al., 2022; Onyango et al., 2007; Perumal et al., 2018). This condition, stemming from chronic malnutrition, often develops during the critical first 1,000 days of life, from conception to two years of age (Agosti et al., 2017; Islam et al., 2020; Pandey et al., 2017). Beyond its impact on physical growth, stunting significantly affects cognitive development, educational outcomes, and future productivity (Hasan & Muhammad, 2024; Mwene-Batu et al., 2020; Stein et al., 2023; Suryawan et al., 2022; Woldehanna et al., 2017). In the long term, stunted children face heightened risks of

chronic diseases and diminished quality of life, making the reduction of stunting essential for breaking cycles of poverty and fostering societal well-being.

Globally, stunting has garnered substantial attention due to its profound implications for human development, especially in low- and middle-income countries. International initiatives, such as the Sustainable Development Goals (SDGs) set by UNICEF and WHO, emphasize reducing stunting as a priority (Bhardwaj et al., 2017; Bhutta et al., 2020; Shekar et al., 2017). In Indonesia, stunting remains a critical concern, with historically higher rates than the global average. Recognizing its negative impact on human capital and national development, the Indonesian government has prioritized stunting reduction through various interventions (Indra & Khoirunurrofik, 2022; Prasetyo et al., 2023). While national rates have shown gradual improvement, stunting prevalence remains alarmingly high in specific regions, particularly rural areas where poverty, inadequate sanitation, and limited healthcare access persist. East Java, Indonesia's second most populous province with over 40 million inhabitants, represents a critical case in the national stunting landscape (Paramashanti et al., 2022; Roberts et al., 2019; Vermeulen et al., 2019). Despite its economic significance as a key contributor to Indonesia's agriculture, culture, and economy, disparities in health outcomes persist, particularly in rural and disadvantaged areas. Stunting rates in East Java highlight these inequalities, with factors such as poverty, food insecurity, maternal education, and healthcare access playing significant roles (De Silva & Sumarto, 2018; Rizal & van Doorslaer, 2019; Titaley et al., 2019). In 2019, East Java recorded a stunting prevalence rate exceeding 26%, higher than the national average, particularly in districts like Sumenep and Bondowoso, where rates surpassed 35% (Kresnawati et al., 2022). Despite various programs introduced at both national and provincial levels, recent trends in stunting prevalence remain unclear, underscoring the need for updated and detailed data analysis to evaluate progress and identify persistent gaps.

To address stunting, the Indonesian government has implemented multiple strategies, including nutrition supplementation, improved access to healthcare, and maternal health education (Hall et al., 2018; Noventi, 2020; Nurdin & Muhammad, 2022; Sufri et al., 2023). Local governments in East Java have also collaborated with international organizations and NGOs to tailor region-specific interventions, leveraging community health workers (Posyandu), local clinics (Puskesmas), and public health campaigns. Despite these efforts, stunting remains a significant public health issue in East Java, reflecting the multifactorial challenges associated with addressing this condition. This study focuses on analyzing stunting prevalence in East Java from 2019 to 2023, aiming to assess whether significant progress has been made and to identify key determinants influencing stunting trends. By exploring temporal dynamics and disparities within East Java—such as urban-rural differences and variations among socioeconomic groups—this research seeks to provide valuable insights for refining public health strategies. Particular attention will be given to district-level data to identify areas with significant progress versus those with persistent challenges. Additionally, this research will examine the interplay of household-level factors (e.g., food security, maternal education) and community-level factors (e.g., healthcare infrastructure, public health awareness) to provide a comprehensive understanding of stunting in East Java. Ultimately, the findings aim to inform policymakers and practitioners to ensure that interventions are evidence-based and targeted to the region's specific needs.

2. Findings and Discussion

The results of this study were obtained by analyzing secondary data from the Monitoring of the Implementation of the 8 Convergence Actions for Integrated Stunting Reduction Interventions, provided by the Directorate General of Regional Development - Ministry of Home Affairs. A descriptive analysis was conducted on this data, covering all regencies and cities in East Java Province from 2019 to 2023. The findings of this analysis are as follows:
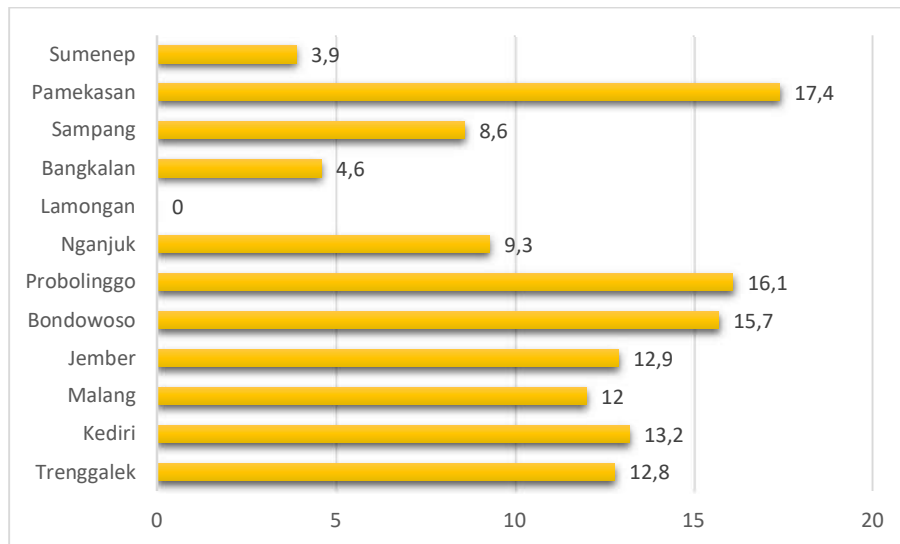
Figure 1. Stunting prevalence in each district/city of East Java in 2019.

Based on the analysis conducted, the stunting prevalence across various regencies and cities in East Java Province in 2019 showed significant variation. Pamekasan had the highest prevalence at 17.4%, followed by Probolinggo (16.1%) and Bondowoso (15.7%). On the lower end, Lamongan reported no stunting cases, while Sumenep recorded a low prevalence of 3.9%, and Bangkalan 4.6%. Other areas such as Trenggalek (12.8%), Kediri (13.2%), Malang (12%), Jember (12.9%), Nganjuk (9.3%), and Sampang (8.6%) fell within a moderate range. These findings reflect the diverse stunting challenges across the regencies and cities.
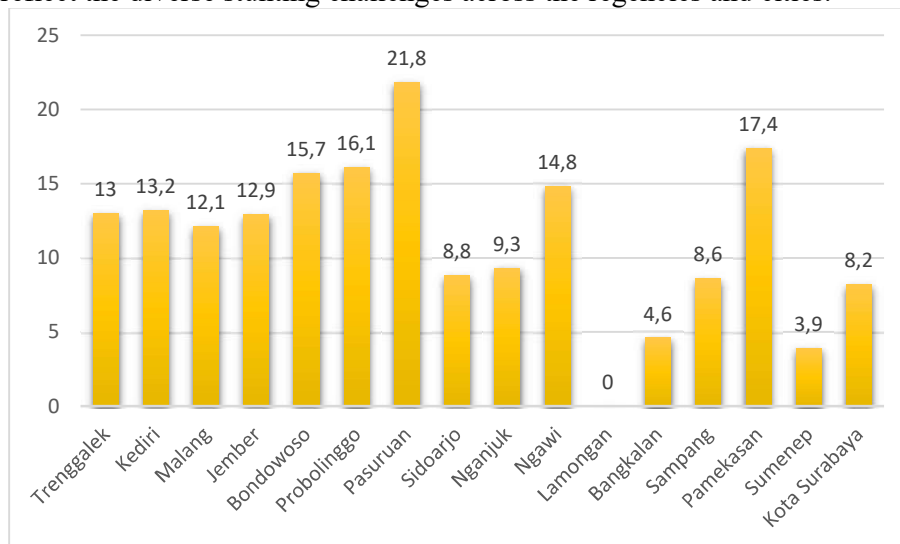

Figure 2. Stunting prevalence in each district/city of East Java in 2020.

As shown in Figure 2, the data analysis reveals significant variation in stunting prevalence across regencies and cities in East Java in 2020. Pasuruan recorded the highest prevalence at 21.8%, followed by Pamekasan at 17.4% and Probolinggo at 16.1%. Bondowoso and Ngawi also showed relatively high rates, with 15.7% and 14.8%, respectively. Meanwhile, Sidoarjo, Nganjuk, and the city of Surabaya had lower stunting rates at 8.8%, 9.3%, and 8.2%, respectively. Notably, Lamongan reported no stunting cases, with a prevalence of 0%, while Sumenep had the lowest rate at 3.9%. These findings illustrate the disparities in stunting rates across the region, with some areas experiencing significantly higher levels of stunting compared to others.
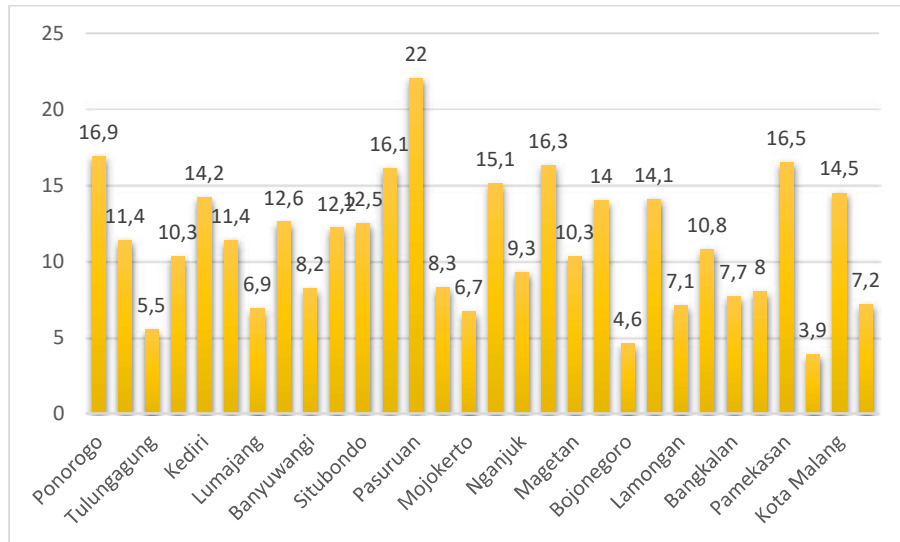
Figure 3. Stunting prevalence in each district/city of East Java in 2021.

The analysis for 2021 (see Figure 3) shows that the prevalence of stunting across the regencies and cities in East Java exhibited considerable variation. Ponorogo had a relatively high stunting rate at 16.9%, while Trenggalek and Malang both reported 11.4%. Tulungagung had one of the lowest rates at 5.5%, while Blitar recorded 10.3% and Kediri 14.2%. Lumajang and Jember had rates of 6.9% and 12.6%, respectively, while Banyuwangi was at 8.2%. Bondowoso, Situbondo, and Probolinggo had prevalence rates between 12.2% and 16.1%. Pasuruan recorded the highest stunting rate at 22%, whereas Bojonegoro and Sumenep showed the lowest rates at 4.6% and 3.9%, respectively. Cities like Malang and Surabaya exhibited lower stunting rates at 14.5% and 7.2%, respectively. This data highlights both regional disparities and significant stunting challenges, particularly in Pasuruan, which stood out with the highest prevalence.
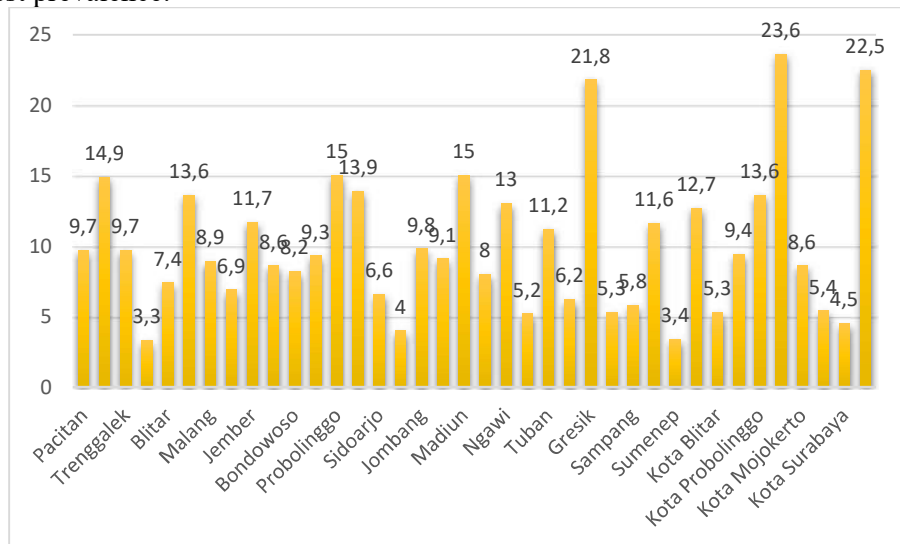

Figure 4. Stunting prevalence in each district/city of East Java in 2022.

Based on the findings presented in Figure 4, the prevalence of stunting across various regencies and cities in East Java Province in 2022 varied significantly. The highest prevalence was recorded in Kota Pasuruan (23.6%) and Kota Batu (22.5%), while Gresik also had a notably high rate (21.8%). In contrast, Tulungagung (3.3%) and Sumenep (3.4%) reported the lowest stunting prevalence. Other regions, such as Pacitan and Trenggalek, both had a prevalence of 9.7%, while Probolinggo and Madiun stood at 15%. Urban areas like Kota Surabaya (4.5%) and Kota Mojokerto (8.6%) showed relatively lower rates compared to rural

regions. These figures, highlight the disparity in stunting prevalence across the East Java province, emphasizing the need for targeted interventions.
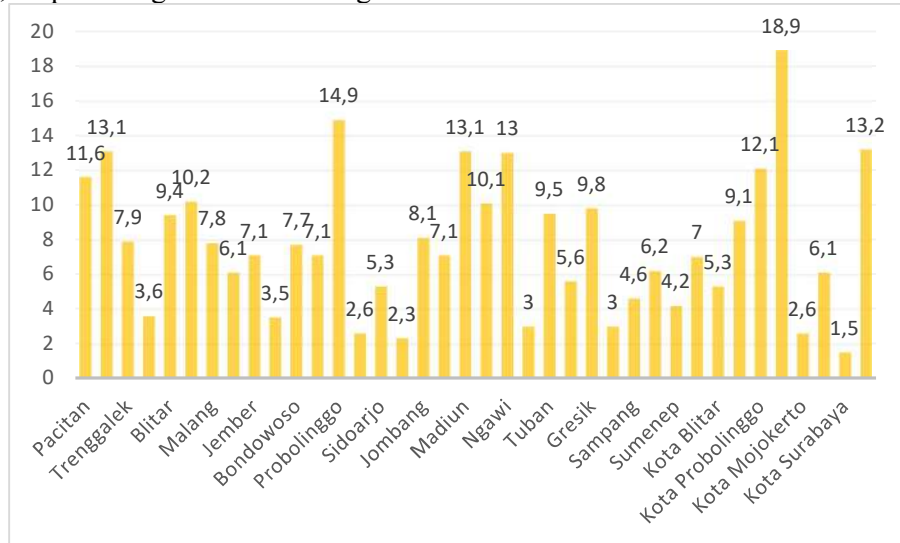

Figure 5. Stunting prevalence in each district/city of East Java in 2023.

The 2023 data analysis, as shown in Figure 5, indicates that stunting prevalence across regencies and cities in East Java Province varied significantly. The highest prevalence was observed in Kota Pasuruan at 18.9%, followed by Kota Batu at 13.2%, and Ponorogo and Madiun both at 13.1%. On the lower end, Kota Surabaya had the lowest prevalence at 1.5%, closely followed by Mojokerto at 2.3% and Pasuruan at 2.6%. Other regions, such as Tulungagung, Banyuwangi, and Bojonegoro, also reported relatively low rates, below 4%. This data demonstrates that while some areas have made substantial progress in reducing stunting, others still face challenges in addressing this issue.
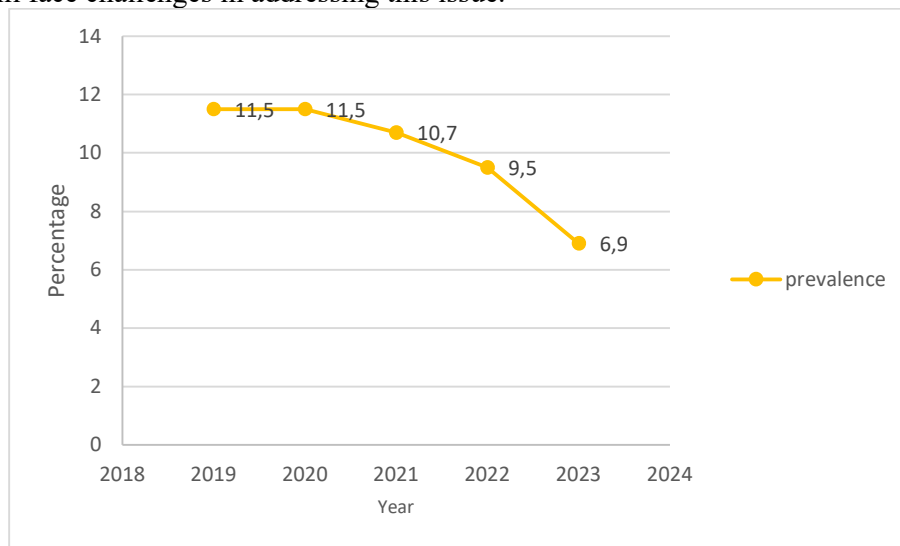

Figure 6. Stunting prevalence in East Java from 2019 to 2023.

The results of the stunting prevalence trend analysis in East Java, as shown in Figure 6, indicate a consistent decline over the five-year period from 2019 to 2023. In both 2019 and 2020, the prevalence rate remained steady at 11.5%, suggesting a stagnation in the stunting reduction efforts during those years. However, beginning in 2021, there was a noticeable improvement, with the rate dropping to 10.7%, reflecting the impact of more targeted interventions to address stunting. This downward trend continued in the following years, with a more significant reduction observed. In 2022, the prevalence rate decreased to 9.5%, and by 2023, it had fallen sharply to 6.9%. These results suggest that the integrated stunting reduction

programs and policies implemented during this period have been increasingly effective, particularly in the last two years, driving the substantial progress seen in reducing stunting rates in East Java.

3. Conclusion

The analysis of stunting prevalence trends in East Java from 2019 to 2023 indicates a significant decline, especially since 2021, demonstrating the effectiveness of targeted interventions. Despite regional disparities, with some areas like Pasuruan and Batu maintaining high rates, the overall stunting rate across East Java province has substantially decreased, from 11.5% in 2019 and 2020 to 6.9% in 2023. This downward trend suggests that the integrated stunting reduction strategies implemented by the government have had a positive impact, particularly in urban areas like Surabaya and Mojokerto, which have achieved the lowest prevalence rates.

These findings underscore the importance of maintaining and expanding stunting reduction programs in East Java, especially in districts that still have high stunting rates. Policymakers should focus on tailoring interventions to meet the specific needs of regions with high stunting prevalence, such as Pasuruan and Batu. Additionally, successful strategies employed in areas with low stunting rates, like Surabaya and Mojokerto, can be replicated or adapted in regions that continue to face challenges. Cross-sectoral collaboration, including improved access to healthcare, nutrition programs, and early childhood development education, must be prioritized to sustain the progress made in recent years.

While this study provides valuable insights into the trends and regional disparities in stunting prevalence in East Java, it is limited by its reliance on secondary data, which may not capture all local variables influencing stunting. Future research should focus on conducting in-depth field studies to explore the underlying socio-economic, cultural, and environmental factors contributing to stunting in specific areas. Furthermore, longitudinal studies that track the long-term impact of stunting reduction interventions across different regions will provide a more comprehensive understanding of their effectiveness and can inform future policy development.

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