



Establish The Policy Target to Reduce Stunting Among Indonesian Toddlers with Single Mothers

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Abstract

Single mothers bear two significant burdens: domestic responsibilities and earning an income. The role of a mother determines the nutritional status of a toddler. Until now, policies about stunting have not focused on specific target areas. The study aims to establish a policy target for reducing stunting among Indonesian toddlers with single mothers. The cross-sectional study examined 5,387 toddlers. Eight independent factors were considered: place of residence, mother's age, occupation, education, socioeconomic status, antenatal care (ANC), children's age, and sex. A binary logistic regression test was used for data analysis. 20.0% of Indonesian toddlers who had single mothers were stunted. Rural youths were 1.171 times more likely to be stunted (95%CI 1.149-1.192). All maternal ages were more likely to have stunted kids than ≥ 45 . Lower education increases the risk of stunted toddlers. Unemployed mothers were 1.170 times more likely to have stunted kids (95%CI 1.148-1.192). The wealthier the household, the less likely the under-fives are to be stunted. Mothers without ANC were 1.194 times more likely to have stunted toddlers (95%CI 1.116-1.278). Toddlers were more likely than infants (0-11 months) to be stunted, and girls had a higher risk of stunting. The policy targeted rural areas, low-income families with young, uneducated, unemployed mothers, no ANC, older toddlers, and girls.

INTRODUCTION

Stunting is a failure of linear growth, the most common form of malnutrition globally, causing growth retardation from an early age. Stunting has a significant impact on morbidity, brain development disorders, metabolic disorders, and intellectual capacity and economic productivity later in life (Prendergast and Humphrey, 2014). This impact, including its effects on the nation's future, will become even more pronounced in the years to come. Potential long-term impacts

include decreased immunity and cognitive and learning abilities, and increased susceptibility to diseases such as obesity, diabetes, cancer, heart and blood vessel disease, stroke, and increased risk in elderly people (Ministry of National Development Planning of the Republic of Indonesia, 2018).

The World Bank estimates that losses due to stunting account for between 3% and 11% of a country's gross domestic product (GDP). In Indonesia, with a GDP of 11,000 trillion rupiah in 2015, economic losses due to stunting are estimated

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ted to range between 300 trillion rupiah and 1,210 trillion rupiah each year. Significant losses were incurred due to increased government spending on public health insurance, particularly for conditions related to degenerative diseases. Children who experience stunting quickly become overweight and are more susceptible to degenerative diseases. Stunting hampers the potential for demographic transition in Indonesia because the ratio of the non-working age population decreases. Not to mention the risk of reducing intelligence levels by 5-11 points (Indriani, Nurdin and Rodiani, 2022).

Although stunting rates have decreased over the past decades, an estimated 21.3% (144 million) of children under 5 years of age globally experienced stunting. This is one of the challenges faced by young children around the world (Vaiyada *et al.*, 2020) maternal nutrition during pregnancy, morbidity in infants, and lack of nutrition in infants. Family characteristics are one of the causes of stunting. The purpose of this study was to determine the description of the characteristics of families in stunting toddlers. This type of research is a quantitative, descriptive study with cross sectional approach. The sample of this research is 118 parents who have stunting children in the UPTD Patean Puskesmas Kendal City with random sampling technique. The research tools used were questionnaires and midline measuring devices. Data analysis uses univariate analysis of central tendency and frequency distribution. The results showed that the average age of parents: fathers 32.23 years with a range of 20 to 50 years, mothers 29.67 years with a range of 20 to 47 years, education of parents with elementary school education: fathers as much as 56 (47.5%). Indonesia is the third most affected country in the Southeast Asia region, according to the World Health Organization (WHO). The average prevalence of stunted babies in Indonesia was 36.4% from 2005 to 2017 (Kusuma *et al.*, 2022). The prevalence of stunting is very high in Indonesia, including East Nusa Tenggara (51.7%), West Sulawesi (48.0%), and West Nusa Tenggara (45.3%). The lowest percentages were Jakarta (27.5%), Yogyakarta (27.2%), and Riau Islands Province (26.3%) (The Ministry of Health of The Republic of Indonesia, 2023).

Stunting begins during pregnancy, even conception, because the growth of the fetus in the womb is greatly influenced by the nutritional and health conditions of the mother (Saleh *et al.*, 2021). The role of a mother determines the nutritional status of a toddler. Until now, policies about stunting have not focused on specific target

areas. Previous research has provided information about the relationship between fathers' and mothers' education and the incidence of stunting in toddlers, highlighting how this affects family income and the knowledge of fathers and mothers in caring for children (Noor *et al.*, 2022). Apart from that, maternal parenting patterns are also known to be related to the incidence of stunting (Saleh *et al.*, 2021; Sriatmi, *et al.*, 2021). Other research also states that working mothers who live in rural areas have a higher chance of having children who are stunted or severely stunted. Apart from that, it is also known that marital status can play a significant role in the incidence of stunting (Laksono *et al.*, 2022).

Additionally, several studies revealed a relationship between the age (in months) of the stunted child, gender, the number of meals the family consumes each day, and family income and the welfare level of the family (Latifah *et al.*, 2023; Suratri *et al.*, 2023). The parents' jobs and the area in which they reside are linked to the family's income because of limited access to healthcare (Kusumawardani *et al.*, 2023). There are a few medical facilities in rural areas. Families with a large number of members tend to have more stunting, and pregnant women receive fewer than four checkups (Titaley *et al.*, 2019). A mother's level of education, the length of her birth, early delivery, and inclusive breastfeeding all have an impact on stunting (Beal *et al.*, 2018).

Furthermore, married mothers in Indonesia are unlikely to give birth to babies with stunting. As part of the Indonesian social system, men are responsible for survival, and women are responsible for the household (Kiram, 2024). Unmarried working mothers have multiple responsibilities and limited time to devote to their children. On the other hand, divorce disrupts livelihoods and affects household food availability (Laksono *et al.*, 2022). Regarding the background context, the study established the policy target to reduce stunting among Indonesian toddlers with single mothers.

METHOD

Study Design and Data Source

This research is a quantitative study using secondary data from the 2022 Indonesian Nutritional Status Survey (*Survei Status Gizi Indonesia Tahun 2022*). An Indonesian Ministry of Health conducted a cross-sectional study across the country. Meanwhile, all toddlers in Indonesia with single mothers were included in the study. To filter single mothers in SSGI data, there is a variable that indicates whether the mother

is married, divorced, widowed, or unmarried. This variable can be named something like marital status. The value indicating “single mother” is categorized as “married”, “divorced”, or “widowed”. Mothers were the survey respondents, while children under five (those younger than 59 months) were the analysis unit. A total of 5,387 children with single mothers were selected for the survey using a multi-stage cluster random selection technique, resulting in a weighted sample of 91.4% of the participants. To access secondary data from the 2022 Indonesian Nutritional Status Survey (SSGI), visit the official data service portal of the Ministry of Health at the following address: <https://layanandata.kemkes.go.id/katalog-data/ssgi/ketersediaan-data/ssgi-2022>. This portal provides various documents related to SSGI 2022, including guidebooks, variable codes, survey reports, and data, which can be accessed or requested officially.

Setting

The sampling method used in the 2022 Indonesian Nutritional Status Survey (SSGI) is a two-stage stratified, cross-sectional sampling design. The first stage is the selection of census blocks by stratification in each district/city. The second stage involves selecting toddler households (RUTA Balita) within the designated census blocks. Samples were taken from 34,500 selected census blocks in 514 districts/cities in 33 provinces of Indonesia (except East Nusa Tenggara, which uses the prediction method).

The total sample that was successfully measured and interviewed was 334,848 infants and toddlers. Data collection was conducted through anthropometric measurements and interviews using standardized tools. This method enables the survey to produce nationally and regionally representative data that describes the nutritional status of toddlers, including stunting, wasting, underweight, and overweight conditions.

Dependent Variable

In this study, the dependent variable was stunting status, a measure of a child's nutritional status based on their age or height over a specified period. WHO growth standards are used to generate the height indicator, often referred to as the z-score or height deviation from the average size. In the study, stunting was split into two categories: normal (≥ -2.0 standard deviation) and stunting (< -2.0 standard deviation), representing the upper limit height/age index (Wulandari, Laksono, Kusrini, *et al.*, 2022).

Independent Variables

We examined eight independent characteristics: mother's age, education level, marital status, employment position, ANC, sex of the child, children's age, and place of residence. The survey divided the dwellings into urban and rural locations. To establish the urban-rural criterion, we employed statistics from Indonesia. The 2022 Indonesian Nutrition Status Survey (SSGI) categorizes residential locations into urban and rural areas due to differences in social, economic, and environmental characteristics, as well as access to health services, which significantly impact the nutritional status of toddlers, including the prevalence of stunting and its determinants.

A study selected seven age groups of mothers: under 19, 20–24, 25–29, 30–34, 35–39, 40–44, and over 45. In this study, marital status included widowed, divorced, and married. On the other hand, the mother's employment status included employed and unemployed. Additionally, the study identified four levels of maternal education: elementary, junior high, senior high, and college.

One of the factors considered while grading families is the amount and variety of objects owned by the home. The study also utilized a range of objects, including televisions, bicycles, and vehicles, and their characteristics to determine the residents' wealth status. Drinking water supplies, bathroom facilities, and primary floor building components were all taken into consideration during the inspection. To calculate the scores, principal component analysis (PCA) was used. PCA generated national wealth quintiles, which were divided into twenty percent segments of the population, based on household scores for each participating household. The poll divided respondents' wealth status into five categories: Quintile 1 (poorest), Quintile 2 (poorer), Quintile 3 (middle), Quintile 4 (richer), and Quintile 5 (richest) (Wulandari, Laksono, Prasetyo, *et al.*, 2022).

Additionally, antenatal care (ANC) during pregnancy covers both received and missed ANC. For the study, children were categorized into five age groups (in months): 0–11, 12–23, 24–35, 36–47, and 48–59. However, the study differentiated between male and female children.

Data Analysis

The Chi-Square test was used first. Next, we conducted a collinearity test to determine if significant relationships existed among the independent variables. Following this, a binary logistic regression analysis was carried out. The statis-

tical analyses were performed using IBM SPSS Statistics 26. In addition, ArcGIS 10.3 (ESRI Inc., Redlands, CA, USA) was used to create a distribution map showing the number of stunted children living in impoverished households by province in Indonesia. The Indonesian Statistics agency supplied a shapefile containing administrative boundary polygons for this study.

Ethical Approval

This research has been declared ethically feasible by the Health Research Ethics Committee of the Faculty of Public Health, Universitas Airlangga, with number 02/EA/KEPK/2025.

RESULT AND DISCUSSION

According to the analysis, 20.0% of toddlers in Indonesia who have single mothers are stunted. Meanwhile, a distribution map of stunted toddlers in Indonesia with single mothers is shown in Figure 1. Figure 1 shows that stunting appears to be more prevalent in eastern Indonesia.

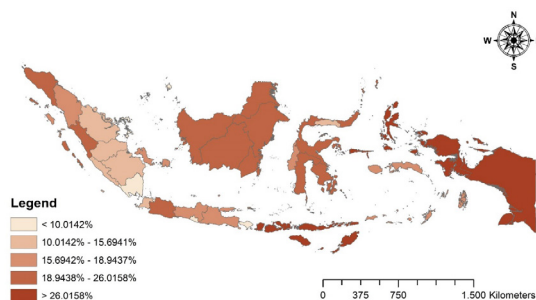


Figure 1. Distribution Map of Stunted Toddler with Single Mothers by Province in Indonesia
Source: Figure visualization by researchers

Table 1 displays descriptive information on the nutritional status of toddlers in poor households in Indonesia. According to the place of residence, stunted children under five in rural areas have a higher ratio than in urban areas. Regarding maternal age, ≥ 45 has the highest stunted toddler prevalence. Moreover, based on maternal education, the lower the education, the higher the stunted toddler ratio.

On the query mentioned above, the study conducted co-linearity tests. The experiment showed that the independent variables were not collinear. The results indicated that all variance inflation factor values for the variables were below 10.00, while all average tolerance values exceeded 0.10. Using the multicollinearity test as a basis for decision-making, the study confirmed that there were no significant relationships between two or more independent variables in the

regression model.

Table 2 provides the binary logistic regression findings of the nutritional status of Indonesian toddlers with single mothers. According to place of residence, toddlers in rural areas are 1.171 times more likely to be stunted than those in urban areas (1.171; 95% CI 1.149-1.192). Regarding maternal age, the results show that all ages are more likely to experience stunted growth than those aged 45 and above. Moreover, based on maternal education, the results indicate that the lower the education, the higher the possibility of having stunted toddlers.

Regarding maternal employment, Table 2 shows that unemployed mothers are 1.170 times more likely to have stunted kids than employed mothers (AOR 1.170; 1.148-1.192). According to wealth status, the wealthier the household, the lower the possibility of having stunted under-fives. Moreover, based on the performance of ANC during pregnancy, mothers without ANC are 1.194 times more likely to have stunted toddlers than those with ANC (AOR 1.194; 95% CI 1.116-1.278). Table 2 indicates that, regarding toddlers' age, all age groups are more likely to be stunted than those aged 0-11 months. Furthermore, according to toddlers' sex, girls are 1.036 times more likely than boys to be stunted (AOR 1.036; 1.018-1.054).

The National Strategy for Accelerating the Reduction of Stunting, outlined in the Regulation of the President of the Republic of Indonesia Number 72 of 2021, aims to achieve the following five objectives: first, to enhance food and nutritional security at the family, individual, and community levels; second, to improve behavior change communication and empower communities; third, to increase the coordination between specific and sensitive interventions across ministries, agencies, provincial governments, regional governments, districts/cities, and village administrations; and fourth, to strengthen leadership commitment and vision within these institutions (President of the Republic of Indonesia, 2021).

The result showed that toddlers in rural areas were more likely to be stunted than those in urban areas. These results are in line with several previous studies (Wulandari, Laksono, Kus-rini, et al., 2022; Ipa et al., 2023). The growth of stunted toddlers in rural areas is lower than the Z-score of stunted toddlers in urban areas. This is because the food intake of toddlers in urban areas is generally better. Toddlers in urban areas consume more high-quality protein than those in rural areas. The economic status of parents is one thing

Table 1. Descriptive Statistic of Nutritional Status of Indonesian Toddlers with Single Mothers ($n = 5,387$)

Variables	Nutritional Status		p-value
	Normal ($n = 4,207$)	Stunted ($n = 1,180$)	
Place of Residence			* < 0.001
• Urban	82.1%	17.9%	
• Rural	76.8%	23.2%	
Maternal age (in years)			* < 0.001
• ≤ 19	73.8%	26.2%	
• 20 – 24	79.7%	20.3%	
• 25 – 29	79.6%	20.4%	
• 30 – 34	80.4%	19.6%	
• 35 – 39	80.5%	19.5%	
• 40 – 44	80.6%	19.4%	
• ≥ 45	84.2%	15.8%	
Maternal Education			* < 0.001
• Primary school	74.3%	25.7%	
• Junior high school	77.4%	22.6%	
• Senior high school	82.5%	17.5%	
• College	86.6%	13.4%	
Maternal Employment Status			0.256
• Unemployed	78.0%	22.0%	
• Employed	81.4%	18.6%	
Wealth Status			
• Poorest	71.8%	28.2%	
• Poorer	76.5%	23.5%	
• Middle	79.0%	21.0%	
• Richer	87.2%	12.8%	
• Richest	89.0%	11.0%	
Perform ANC during Pregnancy			* < 0.001
• No	78.7%	21.3%	
• Yes	83.9%	16.1%	
Under five's age (in months)			* < 0.001
• 0 – 11	91.6%	8.4%	
• 12 – 23	78.9%	21.1%	
• 24 – 35	74.5%	25.5%	
• 36 – 47	81.2%	18.8%	
• 48 – 59	79.9%	20.1%	
Under five's sex			* < 0.001
• Boy	80.5%	19.5%	
• Girl	79.6%	20.4%	
* $p\text{-value} < 0.001$			

Table 2. Nutritional Status of Indonesian Toddlers with Single Mothers: A Binary Logistic Regression ($n = 5,387$)

Predictors	Stunting			
	p-value	AOR	95% CI	
			Lower Bound	Upper Bound
Place of Residence: Urban (ref.)	-	-	-	-
Place of Residence: Rural	* < 0.001	1.171	1.149	1.192
Maternal age: ≤ 19	* < 0.001	1.998	1.871	2.135
Maternal age: 20 – 24	* < 0.001	1.396	1.322	1.475
Maternal age: 25 – 29	* < 0.001	1.448	1.372	1.528
Maternal age: 30 – 34	* < 0.001	1.380	1.308	1.456
Maternal age: 35 – 39	* < 0.001	1.372	1.300	1.449
Maternal age: 40 – 44	* < 0.001	1.286	1.217	1.360
Maternal age: ≥ 45 (ref.)	-	-	-	-
Maternal Education: Primary school	* < 0.001	1.326	1.278	1.375
Maternal Education: Junior high school	* < 0.001	1.232	1.188	1.278
Maternal Education: Senior high school	0.400	1.015	.981	1.049
Maternal Education: College (ref.)	-	-	-	-
Employment: Unemployed	* < 0.001	1.170	1.148	1.192
Employment: Employed	-	-	-	-
Wealth: Poorest	* < 0.001	2.582	2.486	2.682
Wealth: Poorer	* < 0.001	2.080	2.006	2.157
Wealth: Middle	* < 0.001	1.912	1.842	1.985
Wealth: Richer	**0.001	1.065	1.025	1.107
Wealth: Richest	-	-	-	-
Perform ANC during pregnancy: No	* < 0.001	1.194	1.116	1.278
Perform ANC during pregnancy: Yes (ref.)	-	-	-	-
Under five's age: 0 - 11 (ref.)	-	-	-	-
Under five's age: 12 – 23	* < 0.001	3.170	3.033	3.312
Under five's age: 24 – 35	* < 0.001	3.787	3.514	4.081
Under five's age: 36 – 47	* < 0.001	2.550	2.365	2.748
Under five's age: 48 – 59	* < 0.001	2.755	2.556	2.969
Under Two's Sex: Boy	-	-	-	-
Under Two's Sex: Girl (ref.)	* < 0.001	1.036	1.018	1.054

Note: AOR: Adjusted Odds Ratio; CI: Confidence Interval; * $p < 0.001$; ** $p < 0.010$.

that influences it. Toddlers in urban areas have parents with a higher financial level compared to parents of toddlers in rural areas, thus affecting the quality of food consumed daily (Paramita et al., 2022; Tadesse et al., 2023). The lower rate of malnutrition in urban areas compared to rural areas is due to a series of better socio-economic conditions, which in turn lead to good parenting practices for children (Widyaningsih et al., 2022).

Regarding maternal age, the results show that all ages were more likely than those aged

45 or older to experience stunted growth. Early pregnancy can have a significant impact on the developing fetus because, at a time when it requires a substantial amount of nutrients, the mother also needs to consume enough to support the fetus's continued growth. In addition, because of their low educational attainment, young moms frequently do not use ANC services. Low-birth-weight babies can therefore be born to young mothers. Additionally, the psychological immaturity of young moms affects the parenting of

their children (Kusrini et al., 2021; Rohmah et al., 2022). Furthermore, due to a lack of breast milk, young moms run the risk of not providing exclusive breastfeeding, which could hinder their children (Slomian et al., 2016). The study's findings support earlier research that has shown a connection between maternal age and the prevalence of stunting (Kusrini and Laksono, 2020; Laksono et al., 2022).

Moreover, based on maternal education, the results indicate that the lower the education, the higher the possibility of having stunted toddlers. Higher-educated moms are more conscious of their kids' health since they are believed to be more knowledgeable about nutrition, which can lead to healthy feeding practices (Kusrini, Ipa and Laksono, 2019; Laksono and Wulandari, 2021). Better-educated mothers would also opt to use medical facilities to get knowledge on the dietary and medical requirements of their kids (Khan, Zaheer and Safdar, 2019). The study's findings support other studies showing that mothers with higher levels of education are less likely to have stunted children under the age of five (Nshimiyiryo et al., 2019; Yoto et al., 2020).

Regarding maternal employment, unemployed mothers were more likely to have stunted kids than employed mothers. This study reveals that having working parents is a significant risk factor for stunted growth. The results of this study showed that parents who were not employed had a higher likelihood of having undernourished children than parents who were employed. This is likely because children of unemployed parents have unstable food sources, inadequate care, and limited access to health care services because of financial constraints (Shaun et al., 2023). Unemployed mothers have a significant impact on family income, and families in these circumstances often experience food insecurity, because many people living below the poverty line have limited access to food due to socioeconomic constraints, for those with a low family income, it can make it harder to afford enough food. India, Ethiopia, and Ghana have all shown evidence of this pattern (Samuel et al., 2022; Danso and Appiah, 2023). This condition is in line with previous research, where the prevalence of stunting was found to be higher in children with mothers who did not work than in children with mothers who worked (Ahmed et al., 2022).

According to wealth status, the wealthier the household, the lower the possibility of having stunted under-fives. These results align with research findings in Cambodia and Peru, which indicate that household wealth status is a pro-

protective factor against the incidence of stunting in children under five (Curi-Quinto, Ortiz-Panozo). Likewise, research results in Pakistan state that children from affluent families have a lower chance of stunting (Waghmare, Chauhan and Sharma, 2022). Research on the determinants of stunting among toddlers in Madagascar also shows similar results (Rakotomanana et al., 2017). On the other hand, low household income is one of the factors that increase the risk of stunting in toddlers (Ahmed et al., 2023). Likewise, other research states that areas with low socio-economic status have a higher prevalence of toddler stunting (Alao et al., 2021). This may be related to the parents' inability to meet nutritional needs. They often lack sufficient funds to provide healthy and adequate food, leaving their children vulnerable to all forms of malnutrition (Bangoura et al., 2023). It is not surprising that toddlers from families with low wealth status are at greater risk of experiencing stunting (Beal et al., 2018).

Moreover, based on the performance of ANC during pregnancy, mothers without ANC were more likely to have stunted toddlers than those with ANC. These results confirm findings in Pakistan, which state that antenatal care at least 3 times during pregnancy reduces the risk of stunting in toddlers (Khan, Zaheer and Safdar, 2019). Likewise, research in Bangladesh stated that pregnant women who underwent antenatal care seven or more times during pregnancy had a positive relationship with the height-for-age score of their toddlers (Abdulla, Rahman and Hossain, 2023). Stunting, is a serious public health issue in many low and middle-income countries. This study aimed to investigate the heterogeneous effect of some child, maternal, household, and health-related predictors, along with the quantiles of the conditional distribution of Z-score for height-for-age (HAZ). Antenatal care during pregnancy protects the mother and child from various complications, such as infection, anemia, iron deficiency, and other complications of pregnancy and childbirth (Sharaf, MF; Mansour, El; Rashad, 2019). Antenatal care is a form of maternal health-seeking behavior that can affect the child's health (Khan, Zaheer and Safdar, 2019).

Regarding toddlers, all age groups are more likely to experience stunting compared to those aged 0-11 months. The results of this study are in line with findings in Myanmar, which state that older children have a greater chance of experiencing stunting, from 4 times at the age of 6-23 months to 9 times at the age of 24-59 months (Kang and Kim, 2019). Likewise, research results in Pakistan state that the risk of stunting in-

creases with increasing age of the child (Tariq et al., 2018). This may be related to the unsuccessful transition from exclusive breastfeeding to complementary feeding (Akombi et al., 2017). Children's nutritional needs increase with age (Danso and Appiah, 2023). Providing inappropriate complementary foods with breast milk can cause a lack of intake of essential nutrients, so toddlers experience stunting (Mistry et al., 2019). Another possibility is that the unhygienic preparation of complementary breast milk food causes toddlers to be susceptible to diarrhea (Geberselassie et al., 2018). Recurrent diarrhea, which can cause chronic malnutrition, has been proven to be a risk factor for stunting in toddlers (Islam et al., 2020).

Furthermore, according to toddlers' sex, girls were more likely than boys to be stunted. These results align with research in Ethiopia, which indicates that stunting in female toddlers is more prevalent than in male toddlers (Geberselassie et al., 2018). However, these results contradict research on toddlers in Guinea, Africa, which states that boys are more likely to experience stunting than girls (Bangoura et al., 2023). This may be related to cultural factors that cause differences in parenting patterns between boys and girls (Gewa and Yandell, 2012). Some people consider that boys are more important and have higher values than girls (Syafiq et al., 2022). The growing gender discrimination in society causes boys to be given priority over girls, including in terms of food allocation (Abdulla, Rahman and Hossain, 2023).

Children of single mothers are at a higher risk of stunting due to multiple interrelated factors. Research in Indonesia shows that the proportion of stunted children under 2 years old with single mothers is around 17%, and several maternal and socioeconomic factors influence this risk. Single mothers often prioritize meeting immediate economic needs to ensure household survival, which may inadvertently reduce the time, resources, and attention they can devote to their children's health and nutrition. This economic pressure can lead to compromises in childcare practices, including less frequent health check-ups, inadequate nutrition, and limited stimulation, which increases the risk of adverse outcomes, such as stunting, among their children (Mwamba, 2021).

Based on these findings, it is recommended that policy development should focus on integrated, multisectoral interventions with a convergent approach. The government needs to strengthen programs that enhance access to and improve the quality of maternal and child health services,

particularly in rural areas. This includes nutrition education, antenatal care (ANC), and monitoring of child growth and development. Additionally, policies should incorporate socioeconomic aspects by providing economic empowerment support for low-income families, nutrition assistance programs, and increased educational opportunities, particularly for young mothers. Empowering communities and enhancing the role of primary healthcare services are key to optimizing good parenting practices. Effective policy implementation requires comprehensive coordination across various sectors, including health, education, social services, and local governments, to address the risk factors of stunting more effectively and sustainably. This strategy aligns with the national guidelines outlined in Presidential Regulation Number 72 of 2021 on the Acceleration of Stunting Reduction, which emphasizes a convergent and area-based approach to prioritize regions with high stunting prevalence.

Strengths and Limitations

The study's strength lies in its extensive data analysis, which it uses to conclude toddlers in Indonesia who live with single mothers. The inquiry used only the factors included in the survey as an extra data source for this study. The study's results overlook several vital variables examined in earlier research. Stunting in children is associated with the mother's height, weight, anemia, diarrhea, and agri-food output during pregnancy (Amaha and Woldeamanuel, 2021; Castro-Bedriñana, Chirinos-Peinado and De La Cruz-Calderón, 2021).

In the meantime, we disregarded the other prominent cultural components found throughout Indonesia using the study's quantitative technique. Numerous further studies about the importance of children, foods to avoid, parenting, and eating habits impacted the associated conclusions (Kusrini, Ipa and Laksono, 2019).

CONCLUSION

The study found that eight factors were associated with stunted children in Indonesia who single mothers raised. These factors include the place of residence, antenatal care (ANC) attendance, the child's age and sex, as well as the mother's age, education level, employment status, and family wealth. Based on these findings, the study recommends that policies aimed at reducing stunting among toddlers with single mothers should prioritize those living in rural areas, young mothers, unemployed mothers, mothers with low education, families with low income,

those lacking ANC, older toddlers, and girls. The authors suggest crafting integrated and focused policies that build capacity and provide support specifically for single mothers, especially in rural settings. This could include improving access to ANC services, education, job opportunities, and social assistance programs to enhance the health and well-being of both mothers and children. Moreover, they emphasize the importance of coordinated efforts across multiple sectors—such as health, social welfare, and community empowerment—to effectively tackle the socioeconomic challenges contributing to stunting in this vulnerable group.

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