

## THE RELATIONSHIP BETWEEN EXCLUSIVE BREASTFEEDING HISTORY TO STUNTING INCIDENCE IN CHILDREN AGED 6-24 MONTHS IN THE WORKING AREA OF THE GUNUNG ANYAR COMMUNITY HEALTH CENTER, SURABAYA, INDONESIA

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### ABSTRACT

*Stunting is a linear growth disorder caused by malnutrition from chronic nutrient intake or recurrent chronic infectious diseases, shown by the standard deviation value (SD) unit z (Z-Score) height according to age:  $< -2 SD \geq -3 SD$ . A quantitative cross-sectional design was used for this study. All mothers who visited posyandu in the vicinity of the Gunung Anyar Health Centre, Surabaya, Indonesia with infants aged 6 to 24 months comprised the study sample. Non-probability sampling was done using sequential sampling as the sampling technique. Cut-off points for univariate data analysis were used. Stunting and exclusive breastfeeding had an association with  $p=0.000$ . Stunting was significantly affected by exclusive breastfeeding. According to these findings, there was a lower incidence of stunting in children who were exclusively breastfed (2.0%) than in children who were not exclusively breastfed (30.6%). Babies who were not stunted are more prevalent (53.1%) than babies who were stunted (14.3%) for exclusive breastfeeding in the good category. In conclusion, exclusively breastfed children aged 6 to 24 months in Gunung Anyar Health Center scored well in good category. Exclusive breastfeeding has a significant impact on the incidence of stunting.*

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### INTRODUCTION

Stunting is a linear growth disorder caused by chronic malnutrition and/or recurrent chronic infectious diseases, as indicated by the standard deviation (SD) unit z (Z-Score) height for age  $< -2 SD \geq -3 SD$ .<sup>1</sup> More than 165 million (25%)

children under the age of five were found to be stunted in 2012, with 90% of these children living in developing nations, according to the World Health Assembly (WHA). Demographically speaking, according to the United Nations Children's Fund (UNICEF), the rate of stunting in

2012 was 40% higher in more rural than in urban areas.<sup>1</sup> According to information from the Indonesian Nutrition Case Study in 2022, the prevalence of stunting is currently 26% in Indonesia, whereas it is 28.9% in Surabaya. Based on the prevalence of stunting, Indonesia's incidence of stunting is a concern because it continues to be higher than the World Health Organisation's tolerance level.<sup>2</sup>

The short-term negative effects include disruptions in brain development and intelligence, problems with physical growth, and metabolic diseases in the body. Meanwhile, long-term negative effects include lowered immunity that makes the children more prone to illness, decreased cognitive ability and learning achievement, increased risk of diabetes, obesity, heart and blood vessel disease, cancer, stroke, and disability in old age, as well as low-quality, uncompetitive employment that damages economic productivity.<sup>3,4</sup>

Stunting can be avoided through a variety of methods, including exclusive breastfeeding, feeding children nutritious foods based on their needs, encouraging healthy lifestyle choices, engaging in physical activity to balance nutrient intake and energy expenditure, and routinely monitoring children's growth and development. According to survey findings from Riskesdas (2018), only 37.3% of infants aged 6 months in Indonesia were exclusively breastfed. The Millennium Development Goals (MDGs), which set an upper maximum of 80% for exclusive breastfeeding, have still not been met. The data also demonstrates that Indonesia still has a role to play in achieving the UN's Sustainable Development Goals (SDGs), particularly Goal 16: End all forms of child malnutrition by 2030.<sup>5</sup> Moreover, 40.05%

of babies in the East Java region and about 40% in Surabaya are exclusively breastfed.<sup>6</sup>

The authors were interested in researching the relationship of a history of exclusive breastfeeding to stunting incidence in children aged 6-24 months in the working area of the Gunung Anyar health center, Surabaya, Indonesia due to the high incidence of stunting and the relatively low success rate of exclusive breastfeeding.

## MATERIAL AND METHODS

A cross-sectional research design was used in this quantitative study, which employed both primary and secondary data. Purposive sampling was used according to preset inclusion and exclusion criteria. Mothers who visited Gunung Anyar Public Health Center, aged between 20 and 50, at least completed elementary school, and willing to participate in the study met all the inclusion requirements. Mothers who refused to have their data collected were excluded from the study. A sample of 50 respondents was obtained after applying the Slovin formula to calculate the sample.

GEA Medical Microtoise Staturemeter and Onemed 7230 Pediatric Digital Weight Scales were the instruments employed in this investigation to measure stunting. A questionnaire instrument with three categories of questions on knowledge, attitudes, and practices with ten items was utilized for exclusive breastfeeding. From September to November 2022, this study was conducted in the operating area of the Gunung Anyar Regional Health Center. The chi-square test was used for univariate and bivariate analysis of the data.

## RESULTS

According to Table 1, the mothers' age category of 30-39 years had the highest percentage of responses, with a total of 28 respondents (57.1%). While 30 respondents, or 61.2%, informed that they had graduated from senior high school. Then, with a total of 37 respondents (75.5%), the category of mother's occupation with the largest percentage was homemaker.

**Table 1. Demographic Characteristics of Mother**

Variable	Frequency (n)	Percentage (%)
Mother's age		
20-29	14	28.6
30-39	28	57.1
40-49	7	14.3
Mother's Education		
Junior High School	4	8.2
Senior High School	30	61.2
Associate's Degree	2	4.1
Bachelor	13	26.5
Mother's Occupation		
Housewife	37	75.5
Private Employers	6	12.2
Teacher	2	4.1
Civil Servant	1	2.0
Editor	1	2.0
Software Developer	1	2.0
Business Person	1	2.0

**Table 2. Variables' Frequency Distribution of the Children**

Variables	Frequency (n)	Percentage (%)
Childrens' Age (months)		
6-12	17	34.7
13-24	32	65.3
Exclusive Breastfeeding		
Yes	33	67.3
No	16	32.7
Stunting		
Yes	22	55.1
No	27	44.9

**Table 3. Bivariate Analysis between Exclusive Breastfeeding and Stunting**

Exclusive Breastfeeding	Stunting		Total	P-Value
	No	Yes		
No	1	15	16	0.000
Yes	26	7	33	

With a total of 32 responses (65.3%), Table 2 summarized the respondents based on the common childrens' age categories, which were 13-24 months. The majority of the children, 67.3%, were exclusively breastfed, and 55.1% were stunted.

With a significance threshold of < 0.05, this study discovered a strong correlation between exclusive breastfeeding and stunting.

## DISCUSSION

Age, education, and occupation of the mother are among the traits of the respondents in this study. The respondent's mother's age ranged from 30-39 years old in this study's sample, comprising up to 57.1%. Adolescent women are still undergoing physical development, which causes a nutritional competition between the mother and fetus. Children will become short if their height does not increase in the first two years.<sup>7</sup> The mother's age during pregnancy has a significant impact on the fetus and the mother's growth and development.

Based on the mother's primary occupation, most of the mothers were homemakers (75.5%). According to a research by Fitriani et al. (2018), 59.8% of the respondents did not have a job.<sup>6</sup> According to Reni (2020), efforts to provide exclusive breastfeeding for mothers who are actively working frequently encounter obstacles because of the brief maternity leave, which causes the

end of exclusive breastfeeding before they must return to their routine at work. Many working mothers also believe that their breast milk cannot meet the needs of the baby, so mothers prefer to provide additional breast milk. On the other hand, if the mother is unemployed, there is a significant likelihood that she will exclusively breastfeed because she will have a lot of free time to devote to caring for her infant and producing breast milk to meet her nutritional needs and lower the risk of stunting.<sup>8</sup> In addition, breastfeeding has advantages for moms because it is a safe feeding practice that can lower obesity rates and minimize ovarian and breast cancer risks.<sup>9</sup>

Based on the children's age category, the results showed that 13 to 24 months comprised the highest percentage of the respondents (65.3%). This finding was similar to study conducted by Hadi et al. (2021), where the respondents were compromised mostly of babies aged 12 to 24 months and under 12 months old (57.4% and 22.44%, respectively). It is the mother who decides how much breast milk to give to their children based on their ages to promote healthy growth and development and prevent stunting.<sup>10</sup> According to Saputra (2016), nutritional factors, such as exclusive breastfeeding up until the age of six months have an impact on a child's growth and development.<sup>11</sup> Sampe, et al. (2020) found that formula-fed infants are 5 times more likely than breastfed infants to have poor growth in the 0 to 6 month age range. Genetic and environmental factors both have an impact on growth and development. Hence, mothers must give their infants the finest nourishment possible from the start of their lives.<sup>12</sup>

According to the study's findings, 67.3% of the respondents exclusively

breastfed their infants. The research findings of Husna and Farisni (2022) also demonstrated that more toddlers (90.69%) received exclusive breastfeeding than those who did not (9.31%). Optimal exclusive breastfeeding protects infants against a variety of health issues, including nutritional issues.<sup>13</sup> The breastfeeding mother's involvement has a significant impact on the growth and development of the child.<sup>8</sup> Because breast milk contains vital immunoglobulins and growth factors, breastfeeding is the healthiest form of nourishment for neonates. As a result, nursing is crucial for premature babies both immediately after birth and over the few months.<sup>14</sup> If breast milk is provided to a baby correctly and until they are six months old, there is enough breast milk composition for their growth and development.<sup>8</sup> Because calcium from breast milk is more effectively absorbed than calcium from the formula, the advantages of exclusive breastfeeding include supporting children's growth, particularly their height. The child's needs can be addressed and their nutritional status can return to normal as they grow in height and weight if breast milk nutrition is given sufficiently during their developmental process.<sup>15</sup>

Based on the non-stunting category, the results showed that they comprised 55.1% of the respondents. According to Sugiyanto in his research findings from 2019, 68% of respondents' characteristics were classified as normal based on their nutritional state.<sup>16</sup> Stunting is a condition when toddlers suffer from chronic malnutrition, and typically youngsters require time to grow and develop to reach a state of normal height for their age group, according to research conducted by Yuliana et. al (2022), the intergenerational cycle of

malnutrition refers to the possibility that mothers with stunting may give birth to children who will also be stunted.<sup>16</sup> Stunting starts while the child is still in the womb and doesn't manifest until they are two years old. Toddler stunting requires special attention because it might impair a child's physical and mental development. Stunting is linked to a higher risk of morbidity and mortality as well as impaired development of the motor and cognitive systems. Also, there is a chance that it will affect intellectual capacity, productivity, and the likelihood of developing degenerative diseases. Children with stunts are also more likely to contract infectious infections.<sup>17</sup>

The findings of this study are consistent with those of Taufiqoh, et al. (2017), who found a strong correlation between the incidence of stunting and a history of exclusive breastfeeding ( $p=0.040$  OR 2.595). These findings suggest that stunting is three times more likely to occur in children under five who do not have a history of exclusive breastfeeding. The risk factors of gender and history of birth weight have less of an impact on the occurrence of stunting in children than exclusive breastfeeding.<sup>18</sup> Wijaya (2019) claims that the majority of the nutrients required for newborn growth are found in breast milk. This is because breast milk contains vitamins, proteins, calcium, and fat, all of which are nearly ideal for providing babies with the nutrition they require to grow. Also, compared to the minerals in cow's milk, they are of higher quality and are more readily absorbed.<sup>19</sup> Additionally, in low-income nations where exclusive breastfeeding is socially and culturally accepted, promoting it can be a successful way to lower the prevalence of stunting.<sup>20</sup>

## CONCLUSION

The study's findings revealed a correlation between a history of exclusive breastfeeding and the incidence of stunting in children aged 6 to 24 months in the working area of the Gunung Anyar Community Health Center. The incidence of stunting was found to be 44.9%, while the majority of exclusive breastfeeding fell into the good category, at 67.3%.

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## CONFLICT OF INTEREST

All authors declare that there is no conflict of interest regarding the publication of this article.

## ETHICS CONSIDERATION

No ethnic approval was obtained or needed due to no human subjects were directly involved in this study.

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## AUTHOR CONTRIBUTION

Latiful Elisia, Risa Etika, Dwi Aprilawati, Pudji Lestari, and Hodimatun Mahiroh conceived and designed the research, collected the data analyzed, and wrote the paper.



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