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Univariate Analysis of Stunting *Determinant* Characteristics in Toddlers

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Abstract
Background. Stunting is a chronic nutritional problem that is still a public health challenge, especially in toddlers, because it has a long-term impact on physical growth, cognitive development, and productivity in the future.
Purpose. This study aims to determine the characteristics of stunting determinants in toddlers aged 6–59 months in Pekalipan Village, Cirebon City in 2025.
Method. The study used an analytical observational design with *a cross sectional approach*. The population in this study was all toddlers aged 6–59 months in the study area, with a sample of 153 respondents. Data analysis was carried out univariate to illustrate the distribution of characteristics of the research variables which included maternal education, maternal age at birth, birth weight, exclusive breastfeeding status, immunization completeness, history of infectious diseases, and feeding patterns.
Results. The results showed that most mothers had a high level of education (80.4%) and were at a non-risk age at childbirth (83.0%). The majority of toddlers were born with normal weight (92.8%), received exclusive breastfeeding (74.5%), and had complete immunization status (87.6%). Most of the toddlers had no history of infectious diseases (92.2%), but most respondents had improper feeding patterns (86.9%). The prevalence of stunting in toddlers aged 6-59 months in Pekalipan Village is 19.0%.
Conclusion. The conclusions of this study show that although most of the determinant characteristics are in the good category, improper feeding patterns are still the dominant problem that has the potential to contribute to the incidence of stunting. Therefore, it is necessary to strengthen nutrition education and proper parenting as an effort to prevent stunting in toddlers.

Keywords: stunting, toddlers, stunting determinants, feeding patterns, exclusive breastfeeding

INTRODUCTION

One of the health problems in children today is *stunting*. *Stunting* In children, it is a failure to grow and develop due to malnutrition, recurrent infections, and inadequate

psychosocial stimulation. Optimal early childhood growth and development is one of the important components of a nation's progress. To realize this, the government and parents need to pay special attention to growth and development problems in young children (stunting). The growth and development of toddlers can be assessed through the indicators of BB/TB, TB/U, and BB/U (Abdi, 2022). In 2021, 149.2 million (22%) children under the age of five were stunted. In addition, the number of children suffering from stunting in Southeast Asia reached 15.3 million (31.8%) in 2022, placing Indonesia in 10th place in the Southeast Asian region (WHO, 2023).

Children who do not receive immunizations are more susceptible to certain infectious diseases, which can lead to illness and a decline in nutritional status. This is because there is a close relationship between infectious diseases and immune function, which ultimately affects children's nutritional status. Complete immunizations are recommended for infants < 12 months old. Complete routine immunizations include HB0, BCG, polio, DPT-HB-HiB, and MR, with a schedule of administration adjusted to the child's age. One factor that can increase the risk of stunting during the First 1000 Days of Life (HPK) is incomplete immunization. This is due to an increased risk of infection in children who do not receive this passive immunity (Aprilia & Demand, 2023).

Diarrhea in young children often results in a lack of fluids, problems absorbing nutrients, and loss of electrolytes that are essential for maximum growth. When young children have diarrhea, they lose valuable fluids and nutrients that support their development. Problems in nutrient absorption due to infection also result in young children having difficulty obtaining enough energy to support optimal physical growth, which in turn can increase the risk of stunting. Acute respiratory tract infections, such as influenza, cough, and colds, often have a significant impact on the respiratory health of young children, ultimately affecting their body's metabolic processes. In addition, acute respiratory infections often lead to reduced appetite, resulting in inadequate nutrient intake, worsening the nutritional state of young children, and increasing the likelihood of *Stunting.* (Matheus, 2025).

Toddlers' diet is closely related to the eating habits they have formed since they began to grow. Food care is an ordinance mothers impose on their children about what and how to eat. It is designed and run by the mother in feeding activities that ultimately affect nutritional status. The way of feeding is a concrete manifestation of parental care directed at the child, aimed at fulfilling their nutritional needs. Parents have an important role in determining the type of food, the number of servings, and the frequency of their children's meals (D. Rahmawati et al., 2024).

Problem handling *Stunting* is a priority for the government, including efforts to control risk factors, such as cigarette consumption. Smoking behavior in men also adversely affects sperm quality, which can trigger a variety of reproductive health problems. This has the potential to increase the risk of *Infertility* (infertility), even miscarriage (*abortion*) during pregnancy, one of which is due to exposure to cigarette smoke. Pregnant women who are exposed to cigarette smoke have a 4.09 times higher risk of developing anemia. Anemia can reduce nutrient supply to cells, tissues, and glands, especially those that produce thyroid and growth hormones. Low levels of thyroid hormones during the growth period can lead to *Stunting.* (Mairani et al., 2023). Based on previous research, the dominant determinants of Stunting in children aged 13-24 months are maternal education, exclusive breastfeeding status, and the accuracy of MP breastfeeding. (Nurbaiti et al., 2019).

Stunting is a chronic nutritional problem that remains a primary focus of global and national health policies due to its broad impact on the quality of human resources. Various previous studies have shown that stunting in toddlers is influenced by interrelated, multidimensional factors, both direct and indirect. Previous research has identified that maternal factors such as education level, age at childbirth, parity, and pregnancy distance have a significant relationship with stunting incidence. Mothers with low levels of education tend to have limitations in understanding nutrition and child rearing, which affects their ability to meet toddlers' nutritional needs. In addition, the mother's age that is too young (<20 years) or too old (>35 years) increases the risk of pregnancy complications and fetal growth disorders that lead to stunting. In terms of child factors, low birth weight (BBLR) has been widely reported as a strong predictor of stunting. Babies with BBLR have limited nutritional reserves, making them more susceptible to linear growth disorders. The practice of exclusive breastfeeding is also an important determinant, where the non-fulfillment of exclusive breastfeeding during the first 6 months of life contributes to an increased risk of stunting. Cutting-edge research also highlights the role of immunization completeness and a history of infectious diseases, such as diarrhea and ISPA, in relation to a child's nutritional status. Children who frequently experience infections often have impaired nutrient absorption and decreased appetite, worsening chronic nutritional conditions. In addition, feeding patterns and the quality of MP-ASI at 6–59 months are increasingly recognized as crucial factors, particularly regarding nutrient frequency, variety, and adequacy. Although many studies have addressed the determinants of stunting, most studies still focus on bivariate or multivariate analyses separately. They are limited to specific regions and vary across different sociocultural characteristics.

Based on this, it is important to know the determinants of *stunting* in toddlers aged 6-59 months in Pekalipan Village, Cirebon City in 2025, so that it is expected to be used as a priority for prevention, treatment and further health interventions as an effort to prevent the occurrence of health problems related *to stunting* in toddlers in the Pekalipan Village, Cirebon City. Therefore, the researcher is interested in identifying the determinants of stunting among toddlers aged 6-59 months in Pekalipan Village, Cirebon City, in 2025.

LITERATURE REVIEW

The relationship between the mother's age and the baby's birth weight is powerful, especially among mothers < 20 years old. At this age, the development of the reproductive organs and the physiological function of the mother have not yet reached optimal levels. Imperfection in emotional and mental maturity can also hinder a young mother's ability to cope with pregnancy, so complications often occur. The risk of pregnancy, such as preeclampsia and fetal growth disorders, is higher in mothers who give birth < 20 and> 35 years. This indicates that the mother's age during pregnancy can contribute to poor birth outcomes and limit the potential growth of the child. (Pusmaika et al., 2022).

Gender is an identity in toddlers. The sex of both girls and boys is at risk of becoming *stunted.* (Z. E. Y. Anggraeni et al., 2020). Toddlers' growth is directly influenced by factors such as energy and protein intake, BBL, and health conditions (e.g., infectious diseases). In addition, indirect factors include exclusive breastfeeding, toddlers' gender, mothers' height, mothers' education level, and economic status. The community can contribute to efforts to reduce the prevalence of *Stunting* By routinely bringing children to the posyandu on time. These regular visits allow optimal monitoring of the child's growth, thereby preventing *Stunting*.

A baby's birth weight is an important indicator for determining whether a toddler has low birth weight (BBLR), in accordance with WHO standards. BBLR itself is one of the main risk factors for *Stunting*. Some studies show that children born with BBLR are at a higher risk of stunting than babies born with normal weight. In addition, the impact of birth weight on height growth is most significant in the first six months of life. If the nutritional status of toddlers can be improved in this first six-month period, there is a possibility that their height can grow normally, so that they can avoid *Stunting* later in life (Z. E. Y. Anggraeni et al., 2020).

Education is an important means for a person to expand their horizons and knowledge. Individuals with higher levels of education tend to have a broader understanding than those with lower levels. Correspondingly, children born to educated parents are less likely to experience *stunting than those born to poorly educated parents*. (Maiza et al., 2022).

Low height in children is often used as a long-term indicator of nutritional deficiencies due to inadequate food intake, both in quality and quantity, coupled with the presence of infectious diseases. Please note that parents' height also affects the incidence *of stunting* in toddlers. Children are more likely to experience *stunting* if they inherit a short-nature carrier gene from one or both parents who have a low height due to a pathological condition (e.g., growth hormone deficiency). However, children of short parents due to malnutrition or illness can still grow to a normal height, provided they are not exposed to other risk factors. (Wulandari & Muniroh, 2020).

The recommended pregnancy interval for a mother after giving birth is two years. A pregnancy that occurs too soon can cause various serious complications for the mother, including bleeding during pregnancy, childbirth, and the risk of producing babies with poor health. Mothers who become pregnant again in less than two years after giving birth will find it difficult to fully recover their physical condition and face challenges in managing the time to care for two toddlers. The first two years of a toddler's life are a crucial period during which a child's growth and development occur rapidly. Therefore, mothers need to maintain adequate nutrition to maximize breast milk production and meet toddlers' nutritional needs, especially during this period. If the mother's nutritional intake is insufficient, she can suffer from KEK. Too frequent and close pregnancies can deplete essential nutrients such as fats, proteins, glucose, folic acid, minerals, and vitamins from the mother's body, ultimately disrupting metabolism and inhibiting optimal fetal growth. (Wardani, 2022).

Parity, or the number of children born alive by a mother, indirectly contributes to the incidence of *Stunting*. This is because parity is closely related to parenting and ensuring children's nutrition, especially when economic conditions are inadequate. Children born to mothers with multiple births tend to be more at risk of receiving suboptimal parenting and malnutrition during the growth period. In addition, having many siblings can slow down the growth of children due to competition for limited sources of nutrition at home (Sarman & Darmin, 2021)

The phenomenon of indiscriminate defecation, both in rivers, yards, and other improper places, is still often seen in rural communities, especially in areas where rivers flow. The lack

of public motivation to adopt clean, healthy living behaviors is allegedly the main cause of this practice. Open defecation is a significant health issue in Indonesia; Inherent socio-cultural constraints hamper efforts to improve the degree of public health. The culture of people who prefer to defecate (BAB) in any place makes them reluctant to make latrines in their respective homes, based on concepts and definitions *Millennium Development Goals* (MDGs) which in 2016 were continued with *Sustainable Development Goals* (SDGs), households are said to have access to proper sanitation if the sanitation used meets health requirements, including equipped with goose necks, septic tanks (*septic tank*)/Wastewater Treatment System (SPAL) used alone or jointly (Helena Ludorika Simanihuruk et al., 2023).

Breastfeeding History

1. IMD and Exclusive Breastfeeding

Early Breastfeeding Initiation is an effort to train and accustom babies to suck breast milk, which is done for the first time when the baby is born. This method will significantly increase the baby's chances of getting Exclusive Breast Milk later. Thus, the baby will be met with nutritional needs until the age of 2 years, and prevent malnourished children (Rosalina et al., 2024). Exclusive Breast Milk is the only food that should be given to newborns up to the age of 6 months; its nutritional content is sufficient to meet the baby's nutritional needs. Breast milk can also regulate various hormones that regulate appetite and fat metabolism in the baby's body, helping maintain an ideal baby weight and preventing nutrient deficiencies that can lead to later stunting. (Rosalina et al., 2024).

2. Colostrum Administration

Colostrum is the first breast milk produced during pregnancy. Although it is often misunderstood as "stale milk" by some, colostrum is actually a nutrient-rich, immune-boosting liquid. The colostrum content is very high in protein, fat-soluble vitamins, and minerals. Not only that, but colostrum also contains immunoglobulins, which are antibodies that mothers pass on to their babies. These immunoglobulins play an important role in providing passive immunity to newborns, protecting them from potential bacterial and viral threats later in life. (Sartika et al., 2024). Delays in colostrum administration increase the risk of *stunting* in babies by 1.3 times. (Wahyu et al., 2023).

Prelacteal Feeding

Prelacteal intake, which is the provision of food or drinks other than breast milk before breast milk comes out, is often carried out by the public because of the assumption that breast

milk has not come out or the presence of infections such as diarrhea and breast milk. This habit harms children's health by inhibiting their growth and development. These improper practices can trigger nutritional problems and contribute to the high prevalence of *Stunting*. In Indonesia, *Stunting* has various causes, one of which is prelacteal intake in babies, which increases the baby's susceptibility to infectious diseases. Infections that attack the digestive system inhibit optimal nutrient absorption, even though children under five years old need adequate vitamin and mineral intake to reach maximum height. To suppress the increase in prevalence of *Stunting*, early treatment is vital. This includes regular monitoring of toddlers' growth through height measurements at posyandu. In addition, routine health counseling is also needed to increase the nutritional knowledge of parents, especially mothers, regarding exclusive breastfeeding and the prohibition of providing prelacteal intake to newborns. Thus, mothers' knowledge will increase to realize a nutrition-conscious family. The program to increase nutritional intake in the first 1000 days of life (HPK), from conception through pregnancy to the first two years of the child's life, also needs improvement (Rohmah et al., 2022).

Current Breastfeeding Status

Breastfeeding is the most effective way to provide nutrition for a baby's growth and development. More than 66% of toddler deaths during the first year of life are related to improper feeding practices. A study conducted at the Empowered Action Group (EAG) in States, India, revealed that exclusive breastfeeding is an important determinant of a child's nutritional status. Therefore, the single most economical intervention to reduce infant mortality in developing countries is to promote exclusive breastfeeding. Family factors and maternal motivation also play a role in the breastfeeding process. Not infrequently, breastfeeding mothers who are malnourished have inadequate milk production, thus encouraging the provision of complementary foods (MP-ASI) to babies before the age of 6 months (Sulistianingsih & Sari, 2018) Proper administration of MP ASI (Complementary Foods for Breast Milk) during the 6-23 months age range is crucial, as this period marks the peak incidence of growth failure, micronutrient deficiency, and infection. MP ASI functions as a supplement to fill the nutritional gap, because breast milk alone is no longer sufficient for children's nutritional needs after 6 months of age. If intake of MP breast milk is inadequate, the child's macronutrient and micronutrient needs will not be met, further impacting their linear growth.

Monosodium glutamate (MSG) is a flavor enhancer commonly used in cooking. Children, especially in their growing years, are more sensitive to the effects of MSG than adults. Exposure to MSG can cause neuronal cells in the brain to overwork, to the point of extreme exhaustion, and eventually to die within a few hours. The death of these neuronal cells progressively decreases brain function, which is very harmful to brain development, especially in toddlers. The earlier a child starts consuming MSG, the greater the risk of long-term damage to brain development, including decreased intelligence. In addition, the snacks children often consume do not meet their daily nutritional needs. This is because most snacks are calorie-dense foods or drinks that are low in nutrients, and are high in salt, sugar, and fat (e.g., cakes, biscuits, sugary drinks, and chips). If children eat more snacks and eat less of the main meal, their nutritional intake will be significantly reduced. As a result, the energy needed for their growth and development will not be spared. The younger children get used to this diet, the more severe the nutritional deficiencies they experience, especially given that this period is one of linear growth and very rapid brain development (Wahyuni et al., 2021).

Washing hands with soap is an essential sanitation practice that aims to remove germs from hands and fingers using soap and water, thus breaking the chain of disease transmission. This action is one of the main strategies in disease prevention, considering that hands often act as germ carriers that move pathogens from one individual to another, either through direct or indirect contact (Wulan Cahya Rahmatika, Yudho Bawono, 2022).

The most common health problems that afflict children are infections such as diarrhea, ARI, and worms, as well as various other chronic diseases. This health disorder can inhibit children's growth and development due to reduced food intake and suboptimal nutrient absorption. This causes the body to be deficient in essential nutrients. If these health problems persist, the body's immune system will be weakened, increasing the risk of disease or infection. This kind of sustained condition can trigger chronic nutritional disorders that ultimately risk causing growth problems, such as *Stunting.* (Yuwanti et al., 2021).

Based on the study of previous research and the results of this research, several research gaps still need to be studied further, including:

1. Limitations of descriptive research on stunting determinants in urban areas at the village scale. Most previous studies focused on rural areas or areas with a high prevalence of stunting, while studies in urban areas with relatively good determinants of stunting were still limited.

2. Lack of studies that emphasize the role of feeding patterns in the context of "good" determinants. Many studies identify maternal education and economic status as the main factors, but few have examined why stunting still occurs even though these indicators are already in the good range.
3. Lack of integration between parenting behavioral factors and children's health status. Previous research has often separated analyses into nutritional, infectious, and parenting factors, thereby failing to provide a holistic picture of the interactions among stunting determinants.
4. Limited empirical evidence for the formulation of locally-based interventions. Specific local data is still needed as the basis for preparing contextual, targeted stunting prevention programs at the village level.

METHODS

In addition to using the analytical observation method, this study employs a cross-sectional research design to examine the dynamics of the correlation between risk factors and effects, using an observational approach and collecting data simultaneously. (Iqbal, 2022). This design is an analytical study that analyzes the relationship between determinants *of stunting toddlers aged 6-59 months in Pekalipan Village, Cirebon City,* 2025.

Data Analysis

Univariate analysis aims to explain or describe the characteristics of each research variable. In general, this analysis yields only the distribution of the frequency and percentage for each variable. (Putri et al., 2020). The data analyzed in this study were maternal education, maternal age, birth weight, exclusive breastfeeding, immunization completeness, history of infectious diseases, and feeding patterns.

Formula:

$$P = \times 100f/n$$

Source : (Early, 2024)

Description:

P = Percentage of results obtained
f : Variable frequency
n : Number of respondents

Table 1. Classification of the Interpretation of Percentage Calculation

Large Percentages	Interpretation
0%	None
1% - 25%	A small part
26% - 49%	Almost half of it
50%	Serenity
51% - 75%	Most
76% - 99%	In general
100%	Whole

Source : (Sholiha et al., 2021)

DISCUSSION

The novelty of this research lies in the following aspects:

1. Comprehensive approach to determinant characteristics. This study not only assesses one or two risk factors, but also presents a comprehensive picture of stunting determinants, which includes maternal and child characteristics, health history, and feeding patterns in one analytical framework.
2. Focus on micro-level urban villages. Unlike many previous studies conducted at the district or provincial level, this study specifically examines the determinants of stunting in Pekalipan Village, Cirebon City, thus providing a more detailed and relevant contextual picture for local intervention planning.
3. Paradoxical findings of "good" determinants with significant stunting prevalence. This study shows that although most respondents have high maternal education, complete immunization, exclusive breastfeeding, and normal birth weight, the prevalence of stunting is still found to be 19%. This confirms that stunting is not solely influenced by classical determinants, but also by parenting factors and nutritional behavior.
4. Emphasis on feeding patterns as dominant determinants. This study highlights inappropriate feeding patterns as a key problem, while other determinants are relatively strong, thereby enriching new perspectives for behavior-based stunting prevention efforts.

Univariate Analysis

The purpose of this univariate analysis is to describe the characteristics of each variable studied. The data analyzed in this study were the distribution of maternal education frequency, maternal age at birth, birth weight, exclusive breastfeeding, completeness of immunization,

history of infectious diseases, feeding patterns, and *stunting*. The explanation of the picture is described in the table as follows:

Table 2 Distribution of maternal education frequency, maternal age, birth weight, exclusive breastfeeding, completeness of immunization, history of infectious diseases, feeding patterns, and *Stunting*.

Variable	Frequency (n)	Percentage (%)
Mother's Education		
Low (SD-SMP)	30	19,6
High (High School-College)	123	80,4
Total	153	100,0
Mother's age at childbirth		
At risk (< 20 years and > 35 years)	26	17,0
No risk (20-35 years)	127	83,0
Total	153	100,0
Birth weight		
BBLR < 2500 gr	11	7,2
Normal > 2500 gr	142	92,8
Total	153	100,0
Exclusive Breast Milk		
Non-exclusive (given foods other than breast milk at the age of 0-6 months)	39	25,5
Exclusive (breastfed 0-6 months)	114	74,5
Total	153	100,0
Immunization completeness		
Incomplete	19	12,4
Complete	134	87,6
Total	153	100,0
History of infectious diseases		
Yes	12	7,8
No	141	92,2
Total	153	100,0
Feeding patterns		
Inaccurate < 55%	133	86,9
Exactly 55-100%	20	13,1
Total	153	100,0
Stunting		
Stunting (< -3 elementary to < -2 elementary)	29	19,0
Normal (-2 elementary to > 2 elementary school)	124	81,0
Total	153	100,0

Based on the data in table 2, it shows that of the 153 respondents studied, in general, mothers have a higher level of education (SMA-Tertiary), which is 123 people (80.4%), a small number of people are poorly educated (SD-SMP) as many as 30 people (19.6%), in general, respondents are in the non-risk age category (20-35 years) as many as 127 people (83.0%), a

small number of mothers with risk age (<20 years and >35 years) amount to 26 people (17.0%). In general, babies born with normal body weight (>2500 grams) are 142 people (92.8%), a small percentage experience BBLR (<2500 grams) 11 people (7.2%), most babies get exclusive breastfeeding for 0-6 months, namely 114 people (74.5%), almost half do not get exclusive breastfeeding as many as 39 people (25.5%), in general children have received complete immunization as many as 134 people (87.6%), A small number are incomplete, only 19 people (12.4%). Thus, the immunization coverage in the respondents was relatively good, in general the children had no history of infectious diseases, namely 141 people (92.2%), a small number of people had experienced infection (7.8%). However, generally respondents had improper feeding patterns (<55%), namely 133 people (86.9%), a small number had the right diet (55–100%), only 20 people (13.1%), In general, the nutritional status of children (*stunting*) is in the normal category, namely 124 people (81.0%), a small number of people are *stunted* as many as 29 people (19.0%).

Based on the results of the research, 153 respondents were included in the general maternal education category in the higher education category (SMA-Tertiary) (80.4). This describes a person's intellectual capacity to absorb information and their social life. The results of this study are in line with the research. Trisyani (2020), which found the majority of higher education mothers (53.84). In contrast to research Nurmalasari (2020) Who found a large proportion of low-educated mothers (51.8%) (Nurmalasari et al., 2020).

In line with research (Sholihah et al., 2024) Who found in general maternal education in stunted toddlers in the higher education category (76.9%). In this study, the respondents' education was the last. Therefore, as a person's level of education increases, they become better able to receive information. By obtaining higher education, individuals tend to get information more easily, both from others and through the media. The more information received, the wider the insights gained related to health (Sholihah et al., 2024).

In contrast to research conducted by (Nurmalasari et al., 2020) The study found that the level of maternal education in Mataram Ilir Village, Seputih District, Surabaya, Central Lampung showed that of the total respondents, most of the respondents with the low education category, namely 139 (58.6%), had low basic education, and 98 respondents (41.4%) had education in the high category. (Nurmalasari et al., 2020).

A mother's education is a process that goes through during formal education as one of the important factors affecting children's development, a good education for mothers will enable them to acquire a wide range of information and knowledge about health, including the right

way to raise children, children's health, children's education, and other topics (Shodikin et al., 2023). A mother's low level of education can make it difficult for her to follow instructions related to nutritional fulfillment, and they is often skeptical or underestimates the importance of meeting nutritional needs and other health services that contribute to child development. With increasing levels of education, knowledge, and skills, there is a greater opportunity to enhance family food security and improve childcare practices (Nuridah, 2024).

One indicator of a family's socio-economic condition is education. Higher education can help individuals or communities more easily access and apply information in daily life. This is very important, especially for the education of childminders. When a mother's level of education and knowledge is low, this results in her inability to choose and prepare food for her family to meet balanced nutritional standards (Nurmalasari et al., 2020). Based on this description, it can be stated that mothers' educational level is related to their ability to access information and directions on toddler nutrition, and they often do not believe in the importance of health services that support child growth.

Mother's age at childbirth

Based on the study results, the 153 respondents were generally in the non-risk category (20-35 years) at childbirth (83.0%). This shows that most of the mothers are at a healthy reproductive age. The age of a mother is the period from birth to the time the study was conducted, and it is related to the reproductive health of the respondents. The ideal time for women to experience pregnancy and childbirth is between the ages of 20 and 35, when the reproductive organs have reached maturity accompanied by the development of emotional, social, and the ability to care for the baby by a mother (Rufaindah & Patemah, 2024).

The results of this study are in line with the research (Wahyuni et al., 2023), which found that the age of mothers of toddlers was mainly 20-35 years old (75%). Very young mothers (under 20 years old) and elderly mothers (over 35 years old) have an increased risk of giving birth to babies with poor conditions. This happens because, at an age of under 20, biologically, women do not yet fully have the necessary development to undergo pregnancy. On the psychological side, they are also often ill-equipped to cope with the moral, mental, and emotional pressures that arise. Meanwhile, women over the age of 35, especially if they are pregnant frequently, often experience decreased reproductive function or some degeneration compared to their supposed reproductive ability, resulting in a higher potential for complications (Hipson & Anggraini, 2021).

In contrast to research Stuart (2022) Who found that the age of the mother of the toddler mainly was at risk, namely <20 years or >35 years (66%) (Utami et al., 2022). Previous research has shown that age can affect a person's ability and approach to receiving information. Age factors also play an important role in determining knowledge, experience, beliefs, and motivation, which in turn affect a person's attitude towards certain things, especially in meeting the nutritional needs of young children. (Dwi Ertiana & Shafira Berliana Zain, 2023). Based on this description, it can be stated that at the age of mothers under 20 years old who are relatively young, the condition of their reproductive organs is not fully mature or appropriately developed to be able to get pregnant and give birth. From a psychological perspective, they are also not ready to face the moral, mental, and emotional demands. Meanwhile, at the age of mothers over 35 years old, their reproductive function tends to decrease or degenerate, which increases the risk of complications for both mother and baby.

Birth weight

Based on the results of the research, 153 respondents were generally toddlers with normal birth weight (≥2500 grams) (92.8%). This shows that only a small percentage of toddlers are born with low birth weight. The baby's birth weight is a benchmark used to assess whether the child has low birth weight according to WHO standards. Throughout the period of child development, many other factors contribute to weight at birth, including the ability to meet children's nutritional needs and the child's health at the beginning of life. (Z. E. Y. Anggraeni et al., 2020).

This research aligns with the research. Augustine (2022) It found that most of the toddlers had normal birth weight (85%). In contrast to research Dwi Putri & Tiara Levia (2022) Who found the majority of toddlers with low birth weight (689%) (Dwi Putri & Tiara Levia, 2022). Babies born with low body weight can be affected by their development, which is seen through anthropometric measurements. Birth weight is often closely related to short-term mortality, as well as health complications of infants and children, and future growth and development. If children born with low birth weight get adequate nutrition, then healthy growth can be achieved. (Dasantos & Dimiati, 2020).

The presence of problems during the prenatal period can affect babies born with low body weight, who have the potential to face challenges in both the short and long term. Among the long-term risks that may be encountered are problems with growth and development, speech and communication dysfunction, and impaired vision (Khayati & Sundari, 2019). Based on this description, it can be stated that birth weight can affect its growth and development. There are

several short- and long-term risks associated with a low-birth-weight baby. However, if children born with low body weight receive adequate nutrition, they can achieve normal growth for their age.

Exclusive breastfeeding

Based on the study, 153 respondents received exclusive breastfeeding (74.5%). This shows that most toddlers are not given any food or drink other than breast milk from birth to 6 months. Exclusive breastfeeding is defined as the intake of nutrients derived only from breast milk during the first six months of life, except for the administration of fluids in emergencies or when experiencing severe illness. (Hikmahrachim et al., 2020).

The results of this study are in line with the research. Hikmahrachim (2020) It found that most respondents (72.2%) received exclusive breastfeeding. Breast milk is the best source of nutrition for babies after birth. The benefits of breast milk can be seen from perspectives such as nutrition, immunity, psychology, economics, and others. The first liquid given to babies is colostrum, which is rich in fat and protein and supports the immune system, helping children build resistance to various diseases. The lack of exclusive breastfeeding is one of the contributing factors *to stunting in toddlers, which is* related to past events and will affect the future of the child. In contrast, proper breastfeeding can help maintain toddlers' nutritional balance, allowing their growth to proceed normally and optimally. (Fitri & Ernita, 2019).

In contrast to research, Hatta (2020) found that most of the toddlers did not get exclusive breastfeeding (59.5%) (Hatta, 2020). The baby's development and progress are greatly influenced by the type of food it receives. Babies who receive breast milk will have a better nutritional status and experience maximum growth and development. Increased weight, height, and head circumference are indicators of good growth, while healthy development is reflected in improved motor, psychomotor, and language skills. The World Health Organization (WHO) recommends that every baby receive breast milk exclusively from birth and continue to be fed until six months of age. Breastfeeding is considered the ideal method of nutrition in the first 4 to 6 months of a baby's life because breast milk meets nutritional needs with a balanced composition and supports the baby's growth. Infancy is the phase in which growth occurs very quickly, especially during the first two years of life. If calculated from birth, the baby's weight doubles in the fourth month; after that, growth begins to slow, including the baby's body length. This rapid growth requires adequate nutrition for the baby (Hanifah & Sab'ngatun, 2020).

Based on this description, exclusive breastfeeding is essential for a baby's growth and development. Breast milk contains many nutrients that are also beneficial for the baby's immune system. Good growth requires adequate nutrient intake. Babies get exclusive breastfeeding during the age of 0-6 months without being given any food or drink except in sick or emergency conditions.

Immunization completeness

Based on the study results, 153 respondents (87.6%) completed immunization. This indicates his response to immunization based on his age.

The results of this study are in line with the research. Ujang Daud (2023) Which found that most respondents were fully immunized (85.4%). Children who do not get immunized do not have protection against some infectious diseases, so they are at risk of getting sick, which may negatively impact their nutritional condition. This happens because infection is strongly linked to the ability of the immune system and can ultimately affect a child's nutrition with a decrease in his nutritional status. In addition, child development encompasses various aspects, including cognition, physical, language, social-emotional, moral, and spiritual. Incomplete immunization still affects growth, but development does not depend on just one aspect, as the developmental process occurs in several phases. (Aprilia & Demand, 2023).

In contrast to research by Alvionita (2022), who found the majority of toddlers had incomplete immunization status (64%) (Rahayuningrum & Nur, 2022). Immunization is the process of providing the body with protection from disease by introducing certain substances into the body so that individuals can fight diseases that are currently epidemic or dangerous to the person. Immunization against a disease provides only protection against that disease; to avoid other diseases, additional immunizations are needed. The goal of immunization is to protect children from diseases, reduce morbidity and mortality, and prevent disabilities caused by certain diseases. Immunization plays a significant role in strengthening toddlers' immune systems. Toddlers with incomplete immunization status, such as many toddlers who do not receive measles immunization, are affected by the assumption of toddlers' mothers that immunization will increase the risk of measles and fever after being immunized, so they are reluctant to take their children to the Posyandu (Rahayuningrum & Nur, 2022).

Based on the description above, immunization provides one of the body's defenses against various diseases. Children who have an incomplete history of immunization do not have protection from some diseases; in addition to that, their growth can also be stunted.

History of infectious diseases

Based on the study results, 153 respondents were included, generally without a history of infectious diseases. This shows that respondents are generally in good health and have never had a history of infectious diseases such as diarrhea, ISPA (Acute Respiratory Tract Infection), or others. Environmental hygiene and sanitation factors significantly affect the occurrence of infectious diseases, such as poor handwashing before meals and an unclean environment. Cleanliness in food storage and presentation has a significant positive effect on children's nutritional status. Consumption of unclean food can lead to infections that are often accompanied by decreased appetite, nausea, or diarrhea. This condition can result in a decline in the nutritional status of toddlers and adversely affect their growth and development (Subroto et al., 2021).

The results of this study are in line with the research. Subroto (2021) The study found that the majority of respondents (68.1%) had no history of infectious diseases. In contrast to research Khairani & Effendi (2020) Found that most respondents had a history of infectious diseases (87%) (Khairani & Effendi, 2020). Diarrhea in young children often causes fluid loss, problems absorbing nutrients, and loss of electrolytes necessary for ideal growth. When a young child has diarrhea, his body releases important fluids and nutrients that are supposed to support his growth. Problems in its absorption due to infection also make it difficult for young children to obtain enough energy to support their ideal physical growth. Infections of the upper respiratory tract, such as flu, cough, and cold, often have a significant impact on a young child's respiratory health, ultimately affecting the body's metabolic processes. (Matheus, 2025).

According to the researchers, children who have had prolonged infections are at a higher risk of stunting. In addition, they are also likely to experience side effects from infections that can reduce their physical condition. Hygiene practices are also an important factor. Children who eat food as a result of poor hygiene are at higher risk of being exposed to infections. This infection is usually characterized by loss of appetite and nausea, which results in the child's nutritional intake being insufficient. This situation can negatively impact children's growth (Subroto et al., 2021). Based on the description above, it can be stated that a history of prolonged infectious diseases, one of which can cause *Stunting*. Aspects of environmental hygiene and sanitation are factors related to infectious diseases.

Feeding patterns

Based on the study, 153 respondents in general reported that the feeding pattern was inappropriate (86.9%). This shows that many parents still do not understand toddlers' feeding patterns and nutritional needs.

The results of this study are in line with the research. Andolina (2023) Who found that most respondents (51.9%) had inappropriate feeding patterns. In contrast to research Rahmawati (2024) Which found that in general, respondents with proper feeding patterns (93.5%) (D. Rahmawati et al., 2024). Diet in early childhood is related to nutritional habits instilled from an early age. Diet reflects the mother's parenting actions toward the child regarding the method and context of eating. It is designed and implemented by mothers who associate feeding with activities that ultimately determine the child's nutritional status. The way of feeding is a concrete form of parental care used to meet children's nutritional needs. Parents have the obligation to choose the type of food, regulate portions, and determine the frequency of meals for their child. (D. Rahmawati et al., 2024).

Nutritional intake for children plays a crucial role in their growth and development. The quality of nutritional intake can be measured through individual nutritional status. How a child is fed will determine their nutritional intake. If it does not meet nutritional needs, it can lead to malnutrition. Therefore, it is recommended that mothers always choose a healthy diet when selecting foods and the nutrients they contain. Adequate and balanced nutrition can be achieved by following a diet designed to meet children's nutritional needs. The goal is to maintain and improve children's health, because the components of the food they consume extensively affect the health they receive from their parents. (Andolina et al., 2023).

Optimal nutritional intake is essential for the growth and physical development, as well as the intelligence of infants, children, and all age groups. A good diet should start as early as possible, with varied meals and educating children about proper mealtime. In this way, children will get used to implementing a healthy diet. In general, nutritional problems such as *Stunting* occur because children do not get balanced, nutritious food and wrong parenting. Dietary errors contribute to *stunting.* It is caused by the mother's lack of understanding of the quality of food ingredients that are well managed without reducing the intake of protein, iron, calcium, energy, and zinc. During cooking, it is important to provide food at the right time (Andolina et al., 2023).

Based on the description above, the feeding pattern is parental care aimed at meeting children's nutritional needs. Optimal nutritional intake can affect children's growth and physical

development, as well as their intelligence. The right feeding pattern includes the distribution of varied foods and education to children about the right meal time.

Stunting

Based on the study's results, 153 respondents had normal nutritional status or were not stunted (81%).

The results of this study are in line with the research. Matheus (2025) Which is found in general toddlers with normal nutritional status or not, *Stunting* (77,3%) (Matheus, 2025). *Stunting* in childhood is often unnoticed by parents and only seen after the child is two years old, which can affect intellectual abilities and productivity in the future, and even potentially lead to death. (Fitri & Ernita, 2019). *Stunting* is a form of chronic malnutrition that arises from prolonged inadequate nutrition due to feeding that does not meet nutritional needs. *Stunting* can start from the time the fetus is still in the womb and is only seen when the child reaches the age of two. Malnutrition in early life can increase infant and child mortality, make sufferers more susceptible to disease, and result in suboptimal physical growth in adulthood. The cognitive ability of individuals who have experienced Stunting is also low, resulting in prolonged negative economic impacts for Indonesia. (Dwi Putri & Tiara Levia, 2022).

Children who experience *Stunting* may never reach their full potential and intelligence. Those affected by *Stunting* tend to have lower incomes in adulthood as a result of limited education and learning challenges, and are at higher risk of overweight and obesity compared to children of normal height. One of the important aspects of the National Action Plan to accelerate the decline *of stunting, as stipulated in Presidential Regulation No. 72 of 2021, is to strengthen communication for behavior change and increase the community's role*. Efforts and policies implemented by the Population and Family Planning Coordinating Board (BKKBN) to overcome Stunting include continuing to provide comprehensive information to the relevant community (Fitriahadi et al., 2023).

Prevention and countermeasures: Stunting is a shared responsibility that all parties must address by focusing on the specific causes of *Stunting*. One way to achieve this is through increasing public knowledge about *Stunting*. One of the groups that needs attention is adolescent girls, who can be reached through educational interventions in schools using counseling methods. This counseling can increase understanding of *Stunting*. A good understanding will have a positive impact on attitudes toward preventing *Stunting*. Adolescence, especially at the Junior High School level, is a phase in which individuals can

receive and understand a wide range of information, enabling them to apply it in their daily lives. To reduce the prevalence of Stunting, it is important to educate teenagers so they understand the issue well. Adolescents are at an important phase of the life cycle, transitioning from childhood to adulthood. (Muchtar et al., 2023).

Based on this description, it can be concluded that stunting is often not noticed by parents; therefore, it is necessary to monitor children's growth and development regularly. Stunting prevention and control include addressing the specific causes of *stunting*. One way to achieve this is through increasing public knowledge about *stunting*.

CONCLUSION

Based on the results of a study on the characteristics of stunting determinants in toddlers aged 6–59 months in Pekalipan Village, Cirebon City in 2025, it can be concluded that most of the toddlers are in a non-stunting condition. However, the prevalence of stunting remains quite high at 19.0%. The majority of mothers have a high level of education and are at a healthy reproductive age at the time of delivery. Most toddlers are born with normal weight, receive exclusive breast milk, receive complete immunizations, and have no history of infectious diseases.

However, improper feeding patterns are still evident among most respondents, indicating problems with the practice of nutritional care for toddlers. This condition has the potential to be an important factor in stunting, even though other determinants are relatively strong. Therefore, efforts to prevent stunting need to be focused on improving the knowledge and skills of parents, especially mothers, in implementing appropriate, balanced, and nutritional patterns for toddlers. Promotive and preventive interventions, including nutrition education, regular growth monitoring, and strengthening the roles of posyandu and health workers, are needed to reduce stunting rates in the region.

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