



FACTORS ASSOCIATED WITH THE INCIDENCE OF WASTING IN TODDLERS IN JAMIKA VILLAGE, BANDUNG CITY IN 2025

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Abstract. Wasting is one of the most severe forms of acute malnutrition that occurs due to an imbalance between nutrient intake and bodily needs over a short period of time. This condition is a critical indicator of child nutritional status and significantly increases the risk of illness and mortality. Based on anthropometric measurements conducted in RW 03, Jamika Sub-district, Bandung City, in 2025, the prevalence of wasting among children under five was found to be 8.9%. This study aims to identify the factors associated with the incidence of wasting in this area. The research employed a quantitative method with a cross-sectional design. A total of 56 respondents were selected using total sampling. Data were collected through questionnaires, interviews, anthropometric measurements, and 2x24-hour food recalls. The univariate analysis revealed that 69.6% of mothers had good nutritional knowledge, 76.8% of children had normal dietary intake, 51.8% had experienced infections less than three times in the past three months, and 76.8% received exclusive breastfeeding. Bivariate analysis using the Chi-square test showed significant associations between maternal nutritional knowledge ($p=0.040$), dietary intake ($p=0.000$), infectious diseases ($p=0.015$), and exclusive breastfeeding ($p=0.041$) with the incidence of wasting. In conclusion, this study found that maternal knowledge, dietary patterns, frequency of infections, and exclusive breastfeeding practices are significantly related to the incidence of wasting among children under five. Preventive efforts should focus on enhancing maternal nutrition education, routine growth monitoring at community health posts, promotion of exclusive breastfeeding, and early treatment of infections.

Keywords: Wasting, child nutrition, maternal knowledge, dietary intake, exclusive breastfeeding, infectious diseases

1. INTRODUCTION

Wasting is a form of acute malnutrition in toddlers, characterized by a low weight-for-height (WHZ) index with a z-score below -2 standard deviations. Globally, in 2022, approximately 45 million children under five years of age were affected by wasting, including 13.7 million cases classified as severe wasting, with a global prevalence of 6.8%, which remains above the World Health Organization (WHO) threshold of less than 5% [18].

In Indonesia, the prevalence of wasting increased from 7.7% in 2022 to 8.5% in 2023, exceeding the national target of 7% by 2024 [1]. Data from the 2022 Indonesian Nutritional Status Survey (SSGI) reported a stunting prevalence of 21.6% and a wasting prevalence of 7.7%, showing no significant decline compared to 2021 (7.1%). In West Java Province, the prevalence of wasting in 2023 was 3.23%, with considerable regional variation, ranging from 13.55% in Bekasi Regency to 1.21% in Purwakarta [1]. In Bandung City, wasting prevalence was recorded at 4.2% in 2022, which was below the city target of 7%. However, in Jamika Village, the prevalence reached 7.7% in 2023 and decreased to 6.2% in 2024, remaining above the WHO standard.

Wasting has serious consequences for child health, including impaired immune function, delayed cognitive and behavioral development, and an increased risk of morbidity and mortality [18]. Previous studies have identified several factors contributing to the incidence of wasting, including low maternal nutritional knowledge, inadequate dietary intake, recurrent infectious diseases, and suboptimal breastfeeding practices [2], [6], [7]. A preliminary assessment conducted in RW 03, Jamika Village, indicated that although most mothers possessed basic knowledge about toddler nutrition, not all practiced appropriate feeding behaviors, particularly in providing a varied and balanced diet. In addition, a high frequency of infectious diseases among toddlers was observed. A small-scale preliminary study involving 10 mothers revealed that eight mothers understood general nutritional requirements for toddlers; however, only five provided a varied diet consisting of carbohydrates, protein sources, vegetables, and fruits, while the remaining mothers relied on monotonous meals such as rice porridge or vegetables alone. Furthermore, seven mothers reported that their toddlers had experienced infectious diseases, including fever and respiratory tract infections, within the previous three months, which negatively affected children's appetite. Nine mothers reported exclusive breastfeeding during the first 0–6 months of life. Jamika Village consists of 11 neighborhood units (RW), with RW 03 having the highest number of toddlers, totaling 126 children. RW 03 also recorded the highest number of nutritional problems, with 12 cases of stunting and 7 cases of wasting, based on data from the E-Penting application in 2024. Given these conditions, this study aims to analyze the factors associated with the incidence of wasting among toddlers in RW 03, Jamika Village, Bandung City, in 2025, focusing on maternal nutritional knowledge, toddler dietary intake, history of infectious diseases, and breastfeeding practices.

2. METHODS

2.1 Type of Research

This research is observational and analytical. Researchers observe the specified variables, namely knowledge about nutrition, nutritional intake, infectious diseases, and exclusive breastfeeding, then analyze their relationship with *wasting* without conducting any intervention. This research uses a *cross-sectional* approach, which is a momentary approach at a certain point in time and is not followed continuously over a certain period of time.

2.2 Sample

The population in this study consisted of mothers with toddlers aged 12-59 months residing in RW 03, Jamika Village, Bandung City, totaling 126 toddlers in May 2025. The sample size in this study was 126 toddlers. The sample was collected using *accidental sampling*. Inclusion Criteria Mothers whose toddlers were included in the target data in the E-Penting RW 03 Jamika Village application. Exclusion Criteria Mothers who did not take care of their children themselves at home and mothers who had lived in RW 03 Jamika Village for less than 6 months.

2.3 Instruments

2.2.1 Weight and height observation sheet The observation sheet was used to record weight and height data and determine nutritional status.

2.2.2 *Baby Scale* and Digital Foot Scale Weight is measured using a *baby scale* and digital foot scale with an accuracy of 100 g or 0.1 kg. *The baby scale* is used to weigh

children up to 2 years of age or as long as the child can lie down or sit still. For older children, weighing is done using digital weighing scales.

2.2.3 Infantometer/Length Board and Stadiometer Height is measured using an infantometer and stadiometer with an accuracy of 0.1 cm. An infantometer is used to measure the height of children up to 2 years of age. For older children who can stand upright, a stadiometer is used.

2.2.4 Nutritional intake assessment observation sheet According to the food consumption assessment module from Aisyiyah University Yogyakarta in 2021, a 24-hour food recall form will be used to assess nutritional intake. The 24-hour food recall method has the principle of exploring an individual's food consumption on the previous day, starting from 00:00 to 24:00 WIB. The advantages of food recall are that it is easy to do, does not burden respondents, can be used for respondents from all backgrounds (illiterate, uneducated, etc.), and is more objective than dietary history. Data collection should not be carried out on special days such as holidays or harvest times, as eating patterns may not reflect daily habits.

2.2.5 Questionnaire The questionnaire will be used to collect data on mothers' knowledge of nutrition, infectious diseases, and exclusive breastfeeding. The questionnaire was developed by the researchers themselves and will undergo a validity and reliability testing process beforehand.

2.4 The data used in this study is primary data obtained directly from the research respondents, namely mothers of toddlers. Data was obtained through a Google Form questionnaire to gather information about mothers' knowledge of nutrition, infectious diseases, and breastfeeding, while information about nutritional intake will be obtained using a 24-hour food recall form. Data collection was carried out by the researcher with the assistance of RW 03 Jamika Village cadres who have been trained in anthropometric measurements.

3. RESULTS AND DISCUSSION

RESULTS

3.1 Frequency Distribution of Knowledge and Intake Patterns Regarding Nutrition in Toddlers

Knowledge	f	
Good	39	69.6
Fair	13	23.2
Insufficient	4	7.1
Total	56	100.0
Nutritional Intake Pattern		
Above RDA	1	1.8
Normal	43	76.8
Mild Deficit	7	12.5
Moderate Deficit	3	5.4
Severe Deficit	2	3.6
Total	56	100

A total of 39 people (69.6%) had knowledge that good, The this indicates that most indicates that most mothers in RW 03, Jamika Village, Bandung has good knowledge about nutrition in toddlers and 43 people (76.8%) have normal nutritional intake, while 7 people (12.5%) are classified as having mild deficiencies. Most large mothers provide patterns Normal nutritional intake among toddlers in RW 03, Jamika Village, Bandung City.

3.2 Frequency Distribution of Infectious Diseases, Exclusive Breastfeeding, and Wasting Incidence in Toddlers

Infectious Diseases	f	%
> 3 times	27	48.2
< 3 times	29	51.8
Total	56	100.0
Exclusive breastfeeding		
Yes	43	76.8
No	13	23.2
Total	56	100.0
Wasting		
Wasting	5	8.9
Normal	51	91.1
Total	56	100.0

A total of 27 people (48.2%) had infectious diseases more than 3 times during the last 3 months. This indicates that most toddlers had infectious diseases less than 3 times during the past 3 months. A total of 43 people (76.8%) received exclusive breastfeeding at 0-6 months of age. Almost all mothers provided exclusive breastfeeding to infants in RW 03, Jamika Village, Bandung City. A total of 51 people (91.1%) did not experience wasting. This indicates that almost all infants in RW 03, Jamika Village, Bandung City did not experience wasting.

3.2 Relationship Between Knowledge About Nutrition and the Incidence of Wasting

Knowledge	Incidence of Wasting		X²	p value
	Wasting F(%)	Normal F(%)		
Good	1(1.8)	38(67.9)	6,414	`0.040
Fair	3(5.4)	10(17.9)		
Less	1(1.8)	3(5.4)		
Total	5(8.9)	51(91.1)		

39 individuals, 1 individual (1.8%) experienced wasting, and 38 individuals (67.9%) did not experience Wasting. some of mothers who have good nutritional knowledge have toddlers who do not experience wasting. Based on the value of X2 calculated (6.414) is greater than X2 table (5.99). This shows that there is a significant relationship between nutritional knowledge and the incidence of wasting in toddlers

3.3 Relationship Between Nutritional Intake Patterns and Incidence of Wasting

Wasting Incidence		X²	P value
Wasting	Normal		
ng			

Nutritional Intake Patterns	F(%)		X ²	p-value
	F(%)	F(%)		
Above AKG	0(0.0)	1(1.8)		
Normal	0(0.0)	43(76.8)		
Mild Deficit	1(1.8)	6(10.7)	37.2	0.000
Moderate Deficit	2(3.6)	1(1.8)	60	
Severe Deficit	2(3.6)	0(0.0)		
Total	5(8.9)	51(91.1)		

From Table 4.7, it can be seen that most mothers who provided a normal nutritional intake pattern, namely 43 people, did not experience wasting in toddlers in RW 03, Jamika Village, Bandung City in 2025.

The results of the test using the probability value show that the p-value (0.000) is less than the α value (0.05), and based on the calculated X²value (37.260), it is greater than the X²table value (9.49). This indicates that there is a significant relationship between nutritional intake patterns and the occurrence of wasting among infants in RW 03, Jamika Village, Bandung City, in 2025.

3.3 Relationship Between Disease Infection and Wasting

History of Infectious Diseases	Wasting n (%)	Normal n (%)	Total n (%)	χ^2	p-value
≥ 3 times	5 (8.9)	22 (39.3)	27 (48.2)		
< 3 times	0 (0.0)	29 (51.8)	29 (51.8)	5.897	0.015
Total	5 (8.9)	51 (91.1)	56 (100)		

From Table 4.8 it can be seen that most infants who experienced infectious diseases less than 3 times in the past 3 months did not experience wasting.

Test results using probability values from the table show that the p-value (0.015) < α value (0.05), and based on the calculated X²value (5.897), it is greater than the X²table value (3.84). This indicates that there is a significant relationship between infectious diseases and the incidence of wasting in toddlers in RW 03, Jamika Village, Bandung City, in 2025.

3.4 Relationship Between Exclusive Breastfeeding and the Occurrence of Wasting

Breastfeeding Exclusive	Incidence of Wasting		X	p value
	Wasting	Normal		
	F(%)	F(%)		
Yes	2(3.6)	41(73.2)		

No	3(5.4)	10(17.9)	4,168	0.041
Total	5(8.9)	51(91.1)		

From Table 4.9, it can be seen that mothers who exclusively breastfeed their toddlers, 2 people (3.6%) experienced Wasting occurred in 41 children (73.2%), while the remaining children did not experience wasting. This indicates that almost all mothers in RW 03, Jamika Village, Bandung City, in 2025 who provided exclusive breastfeeding and complementary feeding to their children did not experience wasting infants who did not experience of wasting.

Testing of the test using probability values, the table shows that the p-value (0.041) < α value (0.05), and based on the calculated X^2 value (4.168) being greater than the X^2 table value (3.84). This indicates that there is a significant relationship between exclusive breastfeeding and the occurrence of wasting in infants in RW 03, Jamika Village, Bandung City, in 2025.

DISCUSSION

Distribution Frequency Knowledge About Nutrition in Toddlers

Good nutritional knowledge plays a crucial role in supporting children's growth and development, as the toddler period represents a critical stage that requires adequate and balanced nutrient intake. Mothers with better nutritional knowledge tend to provide diets that meet their children's nutritional needs, which contributes to improved nutritional status among toddlers [2], [10]. Nutritional knowledge has been shown to positively influence feeding practices and parental decision-making related to child nutrition [4].

Knowledge is a key determinant of health-related behavior, as individuals with higher levels of knowledge are more likely to adopt healthy practices, including the provision of nutritious food for children [2]. Several factors influence maternal nutritional knowledge, such as educational background, access to information through health workers, mass media, and community health posts (posyandu), as well as personal experience in child care [10]. Supportive social environments and active participation in community-based health activities also contribute to increased awareness of the importance of adequate nutrition during early childhood.

Despite these positive findings, a proportion of respondents (7.1%) in this study still demonstrated insufficient nutritional knowledge. This condition is concerning, as limited understanding of toddler nutritional needs may lead to inappropriate feeding practices and increase the risk of nutritional problems, including stunting, wasting, and underweight [2], [8].

Frequency Distribution of Infant Nutrition Intake Patterns

The majority of mothers in this study provided adequate nutrition for their toddlers, which is essential for supporting optimal growth and development during early childhood. Normal dietary intake plays a fundamental role in maintaining appropriate nutritional status, as balanced nutrition contributes to immune system development, cognitive function, and overall physical growth [3], [7]. Nevertheless, a proportion of toddlers still experienced nutritional deficiencies, indicating the need for targeted interventions to prevent malnutrition.

Nutritional deficiencies, whether mild, moderate, or severe, can result in adverse health outcomes such as stunting, underweight, and delayed physical and cognitive development [15]. Inadequate intake of essential macronutrients and micronutrients during early childhood has been associated with long-term consequences, including impaired learning ability and increased susceptibility to non-communicable diseases later in life [17]. These findings emphasize the importance of ensuring sufficient and balanced nutrient intake to meet the physiological demands of rapid growth in toddlers.

Conversely, excessive nutritional intake above the recommended dietary allowance (RDA), although observed in only a small proportion of respondents (1.8%), may also pose health risks. Overnutrition during early childhood has been linked to an increased risk of overweight and obesity, which can subsequently contribute to metabolic and cardiovascular disorders in later life [5]. Therefore, appropriate dietary management that ensures both adequacy and balance of nutrient intake is crucial to prevent nutritional problems across the spectrum of undernutrition and overnutrition in toddlers.

Frequency Distribution of Infectious Diseases in Toddlers

The high frequency of recurrent infectious diseases among toddlers can negatively affect growth and nutritional status, particularly when infections occur repeatedly within a short period. Recurrent infections such as acute respiratory infections and diarrhea can disrupt nutrient absorption, reduce appetite, and increase metabolic demands, thereby contributing to the development of wasting in children [6], [13]. This condition places toddlers in a state of continuous physiological stress, which may rapidly deteriorate their nutritional status if not accompanied by adequate dietary intake.

Infectious diseases and malnutrition are closely interrelated and form a vicious cycle. Children with poor nutritional status are more susceptible to infections due to weakened immune function, while repeated infections further exacerbate malnutrition by impairing nutrient utilization and prolonging recovery time [18]. This interaction highlights the importance of preventing infectious diseases as part of strategies to reduce the incidence of wasting among toddlers.

Environmental hygiene and sanitation also play an important role in the occurrence of infectious diseases in early childhood. Limited access to clean water, inadequate sanitation facilities, and poor hygiene practices increase the risk of diarrhea and other infections, which subsequently affect children's growth and nutritional status [18]. Therefore, environmental factors should be considered alongside nutritional and health-related interventions.

Based on the findings of this study, the high proportion of toddlers experiencing recurrent infections in RW 03 reflects a combination of nutritional, environmental, and health service-related challenges. Comprehensive intervention efforts are required, including strengthening maternal and child nutrition, promoting exclusive breastfeeding, ensuring complete immunization, and improving access to clean water, sanitation, and basic healthcare services. Through an integrated approach, the frequency of infectious diseases among toddlers can be reduced, thereby supporting improved nutritional status and overall child health outcomes.

Distribution of Exclusive Breastfeeding Frequency in Toddlers

Exclusive breastfeeding plays a crucial role in supporting infant health by enhancing immune function, preventing infections, and promoting optimal growth and development during early life. Infants who are not exclusively breastfed are more susceptible to

infectious diseases, particularly respiratory tract infections and diarrhea, which can adversely affect nutritional status and increase the risk of wasting [13], [18]. In contrast, exclusive breastfeeding provides complete and easily absorbed nutrients that meet infants' nutritional requirements during the first six months of life, thereby supporting normal growth patterns.

In this study, 23.2% of infants did not receive exclusive breastfeeding, indicating the presence of barriers to optimal breastfeeding practices. Inadequate exclusive breastfeeding may increase vulnerability to infections and compromise nutritional intake, both of which are direct contributors to wasting [6], [13]. Exclusive breastfeeding also plays an important protective role by reducing the frequency and severity of infections, which helps preserve energy and nutrient reserves necessary for growth [18].

Barriers to exclusive breastfeeding may include limited maternal knowledge, social and cultural influences, insufficient family support, and lack of counseling from health workers. Strengthening education and support systems for mothers is therefore essential to improve exclusive breastfeeding practices. Community-based interventions, including maternal education, routine counseling at integrated health posts (posyandu), and support from family members, are important strategies to increase exclusive breastfeeding coverage and reduce the risk of wasting among toddlers [2], [10].

Distribution Frequency Occurrence Wasting in Toddlers

Epidemiologically, the prevalence of wasting observed in this study (8.9%) exceeds the World Health Organization (WHO) alert threshold of 5%, indicating a public health concern that requires attention [18]. A prevalence rate above this threshold reflects ongoing nutritional challenges within the community, even when the proportion has not yet reached the level categorized as severe. Although the majority of toddlers in RW 03 were classified as having normal nutritional status, the presence of wasting cases highlights underlying problems related to food access, dietary adequacy, recurrent infectious diseases, and household socioeconomic conditions.

Wasting in early childhood is commonly associated with repeated episodes of infectious diseases, inadequate energy and protein intake, and insufficient dietary diversity. Frequent infections, particularly diarrhea and respiratory tract infections, can worsen nutritional status by reducing appetite, impairing nutrient absorption, and increasing metabolic requirements [6], [13]. This pattern is consistent with the findings in RW 03, where a considerable proportion of toddlers experienced infectious diseases more than three times within the previous three months, thereby increasing their vulnerability to acute malnutrition.

Breastfeeding and complementary feeding practices also play a critical role in preventing wasting. While most toddlers in RW 03 received exclusive breastfeeding, wasting may still occur due to inappropriate complementary feeding practices, irregular feeding schedules, or limited dietary variety after the age of six months [11], [15]. In addition, maternal knowledge and family support remain important determinants of child nutritional status. Limited understanding of child nutrition and inadequate caregiving practices may increase the likelihood of wasting, even in households where breastfeeding practices are generally adequate [2], [8].

Overall, these findings suggest that wasting in RW 03 is influenced by a complex interaction of infection-related factors, feeding practices, and maternal knowledge. Addressing wasting therefore requires integrated interventions that combine nutritional education, improved complementary feeding practices, infection prevention, and family-based support to improve child health outcomes.

The Relationship Between Nutrition Knowledge and Wasting Incidence

The results of this study indicate that most mothers (69.6%) had good nutritional knowledge. Statistical analysis using the chi-square test showed a significant association between maternal nutritional knowledge and the incidence of wasting ($p = 0.040$). Mothers with better nutritional knowledge tended to have toddlers with normal nutritional status, suggesting that maternal knowledge plays an important role in shaping feeding practices and meeting children's nutritional needs.

Maternal nutritional knowledge influences caregiving behavior, particularly in food selection, meal preparation, and feeding frequency. Adequate knowledge enables mothers to provide food that meets both the quantity and quality of nutrients required by toddlers, thereby reducing the risk of wasting [2], [10]. Conversely, limited understanding of child nutrition may result in inappropriate feeding practices, such as unbalanced diets or insufficient intake of essential nutrients, which can directly contribute to the development of wasting [8].

Findings from this study also suggest that some mothers had limited understanding of the concept of wasting and the types of nutrients required for optimal child growth. This condition may delay early recognition of nutritional problems and reduce the likelihood of timely intervention. Previous studies have shown that inadequate knowledge of macronutrients and micronutrients, including protein, energy, iron, and vitamins, is associated with poor dietary diversity and increased risk of wasting among toddlers [2], [15]. Mothers who focus solely on the quantity of food without considering nutritional quality may unintentionally expose their children to acute malnutrition.

Overall, these findings emphasize that improving maternal nutritional knowledge is a key strategy in preventing wasting. Strengthening nutrition education programs for mothers may enhance appropriate feeding behaviors and support early detection and management of nutritional problems among toddlers [2], [8].

Relationship Between Nutritional Intake Patterns and Wasting Incidence

Most toddlers in this study (76.8%) had normal nutritional intake patterns. Bivariate analysis demonstrated a highly significant association between dietary intake patterns and the incidence of wasting ($p = 0.000$). No cases of wasting were identified among toddlers with normal dietary intake, whereas wasting was observed among toddlers with deficient nutritional intake, particularly those with moderate and severe deficiencies. This finding highlights the critical role of adequate dietary intake in preventing acute malnutrition.

Based on interviews using the 2×24 -hour food recall method, toddlers who experienced wasting were found to have insufficient energy and protein intake compared to the Nutrient Adequacy Rate (NAR) standards. Inadequate intake of macronutrients indicates that children are unable to meet their basal metabolic requirements, physical activity demands, and the physiological processes necessary for growth and tissue repair. Such deficiencies place toddlers at a high risk of acute weight loss.

Short-term deficits in energy and protein intake can lead to rapid depletion of body fat and muscle mass, which is a defining characteristic of wasting. When dietary intake is insufficient, the body compensates by breaking down endogenous energy reserves, resulting in significant weight loss and impaired growth [15]. Adequate energy and protein intake are therefore essential indicators in assessing and preventing the risk of wasting among toddlers.

In addition, low dietary diversity and reliance on nutritionally poor foods may further exacerbate the risk of wasting. Diets dominated by simple foods with minimal protein and micronutrient content, as well as frequent consumption of low-nutrient snacks, may provide calories but fail to support optimal growth and development [7], [9]. According to the World Health Organization, wasting is an acute form of malnutrition resulting from an imbalance between energy intake and physiological needs over a relatively short period, often compounded by infectious diseases or sudden reductions in food intake [18]. These findings reinforce the importance of ensuring adequate, balanced, and diverse dietary intake to prevent wasting in early childhood.

The Relationship Between Infectious Diseases and Wasting

The results of this study indicate a significant association between the frequency of infectious diseases and the incidence of wasting ($p = 0.015$). Toddlers who experienced infectious diseases more than three times within the previous three months were at a higher risk of wasting compared to those who were rarely ill. Recurrent infections increase metabolic demands and disrupt nutrient absorption, thereby negatively affecting children's nutritional status.

This study further demonstrates that repeated episodes of common infections, such as fever, cough, and upper respiratory symptoms, are closely related to the occurrence of wasting. Toddlers who experienced wasting frequently had a history of recurrent infections within a short period, indicating a state of repeated metabolic stress. In children with limited nutritional reserves, even mild but recurrent infections can rapidly worsen nutritional status, particularly when not balanced with adequate dietary intake.

During illness, children often experience reduced appetite, increased energy and protein requirements, and impaired nutrient absorption, especially when infections are accompanied by diarrhea or high fever. This combination contributes to acute weight loss and accelerates the development of wasting [6], [13]. Infectious diseases and malnutrition are therefore interrelated and form a self-reinforcing cycle, in which infection exacerbates malnutrition and malnutrition, in turn, increases susceptibility to further infections [18].

Overall, these findings highlight that frequent infectious diseases constitute a major risk factor for wasting among toddlers. Effective prevention of wasting should therefore include strategies to reduce the burden of infectious diseases through improved nutrition, early disease management, and strengthened child health services, alongside efforts to ensure adequate dietary intake.

The Relationship Between Exclusive Breastfeeding and Wasting

The majority of respondents in this study (76.8%) practiced exclusive breastfeeding. Statistical analysis revealed a significant association between exclusive breastfeeding and the incidence of wasting ($p = 0.041$), indicating that toddlers who were exclusively breastfed were less likely to experience wasting than those who were not exclusively breastfed. This finding underscores the protective role of exclusive breastfeeding against acute malnutrition during early childhood. Exclusive breastfeeding during the first six months of life provides optimal nutritional and immunological protection for infants. Breast milk contains essential macronutrients, micronutrients, and bioactive components, including antibodies, that support growth and strengthen the immune system. Infants who are not exclusively breastfed are more vulnerable to infectious diseases, particularly respiratory tract infections and diarrhea, which are strongly associated with the development of wasting [13], [18]. The results of this study also indicate that some toddlers

who experienced wasting had not received exclusive breastfeeding or were introduced to complementary foods before the age of six months. Early introduction of complementary foods or formula feeding may increase exposure to pathogens and reduce nutrient absorption efficiency, thereby elevating the risk of infection and acute malnutrition [11], [18]. Inappropriate feeding practices during early infancy, especially when combined with recurrent infections or inadequate dietary intake, can contribute significantly to the occurrence of wasting.

Overall, these findings highlight that exclusive breastfeeding plays a critical role in preventing wasting by reducing infection risk and ensuring adequate nutrient intake during early life. Strengthening breastfeeding promotion and providing continuous support for mothers are therefore essential strategies to reduce the incidence of wasting among toddlers [2], [10].

4. CONCLUSIONS

This study examined factors associated with the incidence of wasting among toddlers in RW 03, Jamika Village, Bandung City, in 2025. Overall, the prevalence of wasting was relatively low; however, several key determinants were significantly associated with nutritional status. Maternal nutrition knowledge, dietary intake patterns, history of infectious diseases, and exclusive breastfeeding practices were found to play important roles in the occurrence of wasting among toddlers.

The findings indicate that mothers with good nutritional knowledge were more likely to have toddlers with normal nutritional status, supporting existing theories that maternal knowledge contributes to better child-feeding practices and nutritional outcomes. Similarly, toddlers with inadequate nutritional intake, whether mild, moderate, or severe, were at a significantly higher risk of wasting, reinforcing current models that emphasize adequate dietary intake as a critical determinant of child growth.

Infectious diseases were also significantly associated with wasting, as toddlers who experienced frequent infections were more likely to be wasted than those who were rarely ill. This finding aligns with the established interaction between infection and malnutrition, where recurrent illness can impair nutrient absorption and increase metabolic demands. In addition, exclusive breastfeeding during the first six months of life showed a protective effect against wasting, confirming its importance in supporting optimal growth and immunity in early childhood.

Despite these significant findings, this study was limited by its cross-sectional design, which restricts causal interpretation. Future research is recommended to use longitudinal designs to better explore causal pathways and to include a broader range of socioeconomic and environmental variables. Strengthening maternal education, promoting adequate dietary intake, preventing infectious diseases, and reinforcing exclusive breastfeeding practices should be prioritized in community-based interventions to reduce the risk of wasting among toddlers.

5. RECOMMENDATIONS

Based on the findings of this study, several recommendations are proposed. From a theoretical perspective, although most mothers demonstrated good knowledge of toddler nutrition, continuous improvement of health education and counseling is necessary, particularly for mothers with adequate or insufficient knowledge. Health education interventions grounded in the Health Belief Model are recommended to strengthen mothers' perceptions of the importance of balanced nutrition and their role in preventing

malnutrition. For health workers, especially midwives and nutritionists, regular counseling on balanced nutrition, appropriate food preparation, and the importance of monitoring toddler growth and development should be strengthened, with particular attention to mothers with lower levels of nutritional knowledge. Health services are encouraged to implement more active and structured systems for recording and monitoring toddler growth, including consistent use of growth monitoring cards (KMS) and routine anthropometric assessments to enable early detection of nutritional problems such as wasting and stunting. At the community and local government level, sub-district authorities and PKK organizations can initiate educational programs such as mother–toddler classes, nutrition counseling sessions, and training on the preparation of affordable and nutritious foods, particularly targeting populations with limited nutritional knowledge. In addition, the community is encouraged to regularly bring toddlers to integrated health posts to monitor growth and development, receive immunizations, and consult with health workers or cadres regarding child health and nutrition.

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