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The Relationship between the Frequency of Coughs and Colds on the Growth of Toddlers Aged 1-5 Years at the Malawaken Village Health Post

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Abstract.*Mothers of newborns and children under the age of five frequently regard coughs and colds as minor ailments. This illness can actually progress to more severe issues, such as a weakened immune system, which makes kids more prone to infections that may eventually impair their cognitive development and growth. Using an analytical observational design with a cross-sectional approach, this study seeks to examine the correlation between the number of coughs and colds and the development of toddlers. All toddlers between the ages of 1 and 5 at the Malawaken Village Health Post are included in the population; 30 children were subjected to total sampling. With a correlation coefficient of 0.385 and a significance level of p = 0.026 (p < 0.05), which suggests a positive and substantial correlation, the Kendall's tau-b correlation test was used to conduct data analysis. This implies that the effect on a toddler's growth, particularly on body weight, becomes more evident as they have more coughs and colds.*

Keywords: *Child health; Colds; Frequency of Coughs; Growth; Toddlers;*

1. INTRODUCTION

The years of early childhood are a vital time in human development and growth. In this phase, young children are particularly susceptible to numerous illnesses, including acute respiratory infections (ARI). This increased susceptibility is due to an immature body system and significant interaction with their environment. Moreover, the frequently changing diet of toddlers can influence their nutritional health, thereby heightening the risk of malnutrition, which in turn can lead to a greater chance of infectious diseases (Maharani et al. , 2020).

A common illness that many young children face is the common cold, which falls under the category of Upper Respiratory Tract Infections (ARI). This illness tends to occur seasonally and can present a range of symptoms varying from mild to moderate (Aslina, 2018). The primary cause is a viral infection, mainly involving the rhinovirus, which spreads through contact with the infected person's nasal fluids or saliva. Symptoms, such as a runny nose, nasal blockage, and throat discomfort or itching, typically reach their peak within the first three days and can last between 7 to 10 days, although in some cases, they may persist for as long as three weeks (Ismawati, 2025). While adults often view it as a minor issue because it can resolve on its own, colds and coughs in infants and toddlers can escalate into more severe problems, like feeding difficulties or lower respiratory tract infections. Coughs are categorized clinically into three types: acute (lasting up to 8 weeks) (Naufal et al. , 2023).

Worldwide, the incidence of ARI in children under five remains significantly high. The World Health Organization (WHO) estimated in 2017 that around 151. 8 million children

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under five in developing nations experienced ARI. From a total of 156 million cases in this age group, about 74% were reported in only 15 countries. A substantial proportion of these cases, over half, are concentrated in six countries: India (43 million), China (21 million), Pakistan (10 million), Bangladesh, Indonesia, and Nigeria (approximately 6 million each). Data from the 2018 Indonesian Basic Health Research (Riskesdas) supports these findings, showing that the prevalence of ISPA in the population is about 10% (Fauziah and Fajariyah, 2023).

The frequent occurrence of coughs and colds in young children can lead to more health problems because this illness disrupts their daily routines and physical capabilities. If not addressed correctly, a cold cough can turn into a long-lasting cough, which might negatively affect the child's development and growth (Septiani et al. , 2023). Acute Respiratory Infections (ARI) can lead to several issues, like a higher chance of bacterial infections or toxin buildup, inflammation, and a decrease in lung performance. Potential complications include ear infections, sinus infections, pneumonia, nosebleeds, eye infections, and throat infections. This shows that ARI problems are not just related to the breathing system but can affect the whole body (Fahri et al. , 2025).

To prevent the spread of ARI, we can use vaccination, such as the flu shot, which is updated every year based on the changing virus types to avoid resistance. Additionally, boosting the immune system through healthy lifestyle choices, eating balanced and nutritious foods, and getting enough sleep is also crucial in lowering the risk of ARI (Triola et al. , 2021). The high rates of ARI in children under five are influenced by several aspects, including intrinsic factors like age, gender, nutritional status, exclusive breastfeeding, and immunization, as well as external factors such as the living environment (like housing density, ventilation, air pollution, cigarette smoke, and fuel use), and behavior, including the knowledge and attitudes of mothers (Siska, 2019).

Given this information, the writer carried out a study to examine how the frequency of coughs and colds is related to the growth of toddlers aged 1 to 5 years at the Malawaken Village Health Post.

2. RESEARCH METHODS

At the Malawaken Village Health Post, the connection between the frequency of coughs and colds and the growth of toddlers aged 1–5 years was evaluated using an analytical observational design with a cross-sectional approach. All toddlers enrolled in the Poskesdes are included in the population, and a sample of 30 toddlers was chosen using complete sampling. As measured by weight, height, and nutritional status in accordance with WHO standards, the

development of toddlers is the dependent variable, while the frequency of coughs and colds is the independent variable. The data was obtained through direct anthropometric measures and interviews with parents/guardians about the child's health history. Descriptive statistics for frequency distribution and the Kendall's tau-b test were utilized in the data analysis to evaluate the link between the frequency of coughs and colds and growth, with a significance threshold of $p < 0.05$. Ethics, such as obtaining parental/guardian consent and preserving the privacy of data, are also addressed in this study.

3. RESULTS AND DISCUSSION

Univariate Analysis

Table 1. Frequency Distribution Based on Child Age

Category	Frequency	Percentage (%)	Valid Percentage (%)	Accumulative Percentage (%)
12-23 Months	5	16.7	16.7	16.7
24-59 Months	19	63.3	63.3	80.0
>60 Months	6	20.0	20.0	100.0
Total	30	100.0	100.0	

According to Table 1, a significant portion of the children, specifically 19 kids (63. 3%), fell within the 24 to 59 months age range. There were 5 children in the 12 to 23 months category (16. 7%), and 6 children were over 60 months old (20. 0%). This indicates that most of the research participants were toddlers transitioning from preschool to early school age, which is a crucial period for observing their growth, development, and nutritional health.

Table 2. Frequency Distribution Based on Gender

Category	Frequency	Percentage (%)	Valid Percentage (%)	Accumulative Percentage (%)
Man	20	66.7	66.7	66.7
Woman	10	33.3	33.3	100.0
Total	30	100.0	100.0	

According to Table 2, most of the kids in this research were males, with 20 boys making up 66. 7% of the group, while there were 10 females at 33. 3%. This indicates that boys are more represented in the sample, which should be considered when examining the link between how often kids cough and catch colds and their growth since physical and social factors can vary between genders.

Table 3. Frequency Distribution Based on Cough and Cold

Category	Frequency	Percentage (%)	Valid Percentage (%)	Accumulative Percentage (%)
1x	23	76.7	76.7	76.7
2 x	5	16.7	16.7	93.4
>=3 Times (Frequently)	2	6.7	6.7	100.0
Total	30	100.0	100.0	

According to Table 3, most children had coughs and colds one time, specifically 23 children (76. 7%). A total of 5 children had coughs and colds two times (16. 7%), whereas only 2 children had frequent coughs and colds (3 times or more) (6. 7%). This indicates that most toddlers in this research infrequently suffer from respiratory tract infections. However, a small group of children who frequently become ill may impact their growth and nutritional well-being.

Table 4. Frequency Distribution Based on Body Weight Status

Category	Frequency	Percentage (%)	Valid Percentage (%)	Accumulative Percentage (%)
Go on	7	23.3	23.3	23.3
Down	23	76.7	76.7	100.0
Total	30	100.0	100.0	

According to Table 4, the majority of youngsters lost weight (23 or 76.7%), while only 7 (23.3%) gained weight. The fact that the majority of the toddlers in this study had sub-optimal growth, which may have been affected by environmental factors, dietary intake, and health factors such as the frequency of colds and coughs, is evidence of this. The need for health monitoring and dietary treatments to promote healthy toddler development is highlighted by these results.

Table 5. Frequency Distribution Based on Height Status

Category	Frequency	Percentage (%)	Valid Percentage (%)	Accumulative Percentage (%)
Good	20	66.7	66.7	66.7
Still	10	33.3	33.3	100.0
Total	30	100.0	100.0	

According to Table 5, most children demonstrated satisfactory height development, with 20 children (66. 7%) achieving this, while 10 children (33. 3%) maintained their height without notable improvement. This indicates that even though some children may lose weight, their height growth remains comparatively steady, suggesting that the immediate impact of frequent coughs and colds is more apparent on weight rather than on height.

Table 6. Frequency Distribution Based on Growth

Category	Frequency	Percentage (%)	Valid Percentage (%)	Accumulative Percentage (%)
Good Nutrition	22	73.3	73.3	73.3
Risk of Overnutrition	3	10.0	10.0	83.3
More Nutrition	1	3.3	3.3	86.7
Obesity	2	6.7	6.7	93.3
Malnutrition	2	6.7	6.7	100.0
Total	30	100.0	100.0	

According to Table 6, most of the kids are in good health regarding nutrition, with 22 kids (73. 3%) falling into this group. The rest are divided among various risk levels, including 3 kids (10. 0%) at risk for overnutrition, 1 child (3. 3%) with overnutrition, 2 kids (6. 7%) classified as obese, and 2 kids (6. 7%) facing undernutrition. This indicates that most toddlers in this research have healthy growth and nutrition, although there are a few children dealing with nutrition issues, both not getting enough and having too much, which might be affected by how often they cough and catch colds, their food intake, and their surroundings.

Bivariate Analysis

Table 7. Relationship between the frequency of coughs and colds and the growth of toddlers aged 1-5 years

				Knowledge	**Selection of birth control methods**
Kendall's tau_b	Frequency of Coughs and Colds	Correlation (2-tailed)N	CoefficientSig.	1.000.	.385**
					.026
				30	30
	Growth	Correlation (2-tailed)N	CoefficientSig.	.385**	1.000.
				.026	
				30	30

Based on Table 7, the association between the frequency of coughs and colds and child growth has a correlation coefficient of 0.385 for Kendall's tau-b, with a significance value of $p = 0.026$ ($p < 0.05$). This suggests that there is a strong positive correlation, which means that the more coughs and colds a toddler has, the more noticeable the impact on development, particularly on body weight. These results highlight the significance of managing respiratory tract infections and meeting dietary needs to promote healthy development in children between the ages of 1 and 5, even if the connection is only somewhat strong.

Relationship between the frequency of coughs and colds on the growth of toddlers aged 1-5 years

Children have a high susceptibility to viral infections that cause coughs and colds due to several factors. Even though their immune system has been formed, this immune ability still relies heavily on innate immunity. This occurs because previous exposure to various pathogens was still limited so that children's bodies were not able to provide an optimal immune response and as a result they were more susceptible to infection (Afifah et al., 2024).

Coughs and colds are not classified as diseases but are instead a group of symptoms resulting from an infection. Information collected from visits to the Village Health Center indicates that, on average, 23 young children seek help each month due to symptoms of coughs and colds, usually once a month, with some experiencing weight loss. This observation aligns with findings from Naufal et al (2023), which suggested that children under five may suffer from coughs and colds 1 to 3 times monthly. Generally, a child will visit a healthcare provider when their condition deteriorates enough to warrant a consultation with a pediatric pulmonologist.

From a clinical perspective, the acute symptoms related to coughs and colds typically improve within three days, although symptoms like coughing may persist longer. For children, it can take as long as three weeks to fully recover from a cough (Maro et al. , 2023). A cough is termed subacute if it lasts between 3 to 8 weeks, and it is considered chronic if it continues beyond eight weeks (Sahitarani et al. , 2020). According to the study's results, most respondents reported experiencing coughs associated with colds at a subacute rate of 93. 4%, while 76. 7% had acute cold coughs. None of the respondents experienced a chronic cough. Additionally, Maharani et al (2024) underscored that recurrent infections can adversely affect the growth and development of young children. Therefore, the frequency of coughs and colds might have a more significant impact on a child’s growth than the duration of these symptoms, considering that growth is influenced by ongoing health factors over the long term.

4. CONCLUSION

According to the findings of the study, initiatives aimed at helping children younger than five thrive and minimizing the impact of coughs and colds involve enhancing infection control by promoting a clean environment and healthy habits, ensuring age-appropriate balanced diets, routinely checking growth at community health posts, offering full vaccinations, and informing parents about the importance of keeping their children's health in good shape and how coughs and colds can affect growth.

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the findings from this study will aid in enhancing the health and development of young children at the Malawaken Village Health Post.

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