The Relationship Between Basic Immunization Completeness and The Growth and Development of Children Aged 11-24 Months at Srikandi Husada Clinic, Kudus Regency

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Abstract.

Children who have completed a complete series of basic immunizations are more likely to have optimal growth status and development in accordance with their age stages, when juxtaposed with children who have not completed the basic immunizations. This phenomenon can be explained by the fact that basic immunization contributes to building the immune system which further allows children to absorb nutrients properly and prevent diseases so that growth and development in children can occur optimally. This study aims to investigate the relationship between basic immunization completeness and the growth and development of children aged 11-24 months. This study uses an analytical observational research design with a cross sectional approach. All children aged 11-24 months at Srikandi Husada Clinic, Kudus Regency involved a population selected as a sample through purposive sampling techniques. The data was analyzed using the Spearman Rho test. The results showed that out of 59 children, 31 children received complete basic immunization and 28 children did not receive complete basic immunization. The percentage of growth increased by 55.9%, the percentage of growth did not increase by 44.1% while the percentage of development in accordance was 54.2%, doubtful by 27.1% and deviation by 18.6%. The results of the analysis indicated that the completeness of basic immunization was related to the growth of children with a p-value of 0.014<0.05 and an r value of 0.319. Meanwhile, in the aspect of child development, a p-value of 0.000<0.05 was obtained with an r value of 0.494 which indicates that the completeness of basic immunization is related to child development. So, it can be concluded that there is a relationship between the completeness of basic immunization and the growth and development of children aged 11-24 months at the Srikandi Husada Clinic, Kudus Regency.

Keywords: *Basic Immunization; Growth ;Development and Children Aged 11-24.*

I. INTRODUCTION

The golden age is a crucial stage in the growth and development of children from the beginning of their lives. This period includes the first 1000 days of life from the time of pregnancy to the age of two. The growth and development of children in this phase occurs rapidly so adequate support from parents and the surrounding environment is needed (Sumarmi Sumarmi et al., 2025). A child's physical size and body structure develop as he or she grows. Meanwhile, the physical structure and increasingly complex functions of the child's body are a sign of development (Amanda Putri Nasution et al., 2025). Changes in physical, motor, intellectual, emotional, language and social aspects in children occur in this phase (Gannika, 2023). Based on data from the National Socio-Economic Survey (Susenas) published by the Central Statistics Agency (BPS) in 2023, it is estimated that there are approximately 30.2 million early childhood children in Indonesia. Of these, there are 11.22% of infants (under 1 year old), 59.95% of toddlers (ages 1-4 years), and 28.83% of preschool children (ages 5-6 years). This data shows that West Sumatra occupies the 9th position with an early childhood percentage of 12.35%. Meanwhile, the Padang City Statistics Agency reported that in 2022, the number of early childhood children in the city for the age category 0-4 years old was 76,734 people, while as many as 71,949 people were in the age group of 5-9 years.Physical development in children can be observed from their nutritional status, which is measured using the Healthy Towards Healthy Card (KMS). The use of KMS for growth and development data collection can detect the risk of malnutrition early so that it can prevent more serious problems (Agiwahyuanto et al., 2021).

In the context of early detection of growth and development periodically, the posyandu program plays an important role. Community participation, especially posyandu cadres, also plays a role in reducing the rate of growth and development failure in children (Fadholah et al., 2023). Body mass measurement and body length measurement are carried out as components of the posyandu health program and the Development Screening Questionnaire (KPSP) is applied according to the age of toddlers to detect

developmental disorders in children. By detecting the growth and development of children, it can help in the prevention of stunting (Linda Fitria Nuraini et al., 2024). According to World Health Organization (WHO) data in 2020, 38.9 million children under the age of five are obese (overweight), 45 million children are underweight (too thin for their height), and 149 million children are stunting (too short for their age). Growth and development in children has a significant effect on health and quality of life in the future. The short-term effects of poor growth and development include children becoming indifferent or indifferent, impaired speech, and other developmental disorders. Meanwhile, its long-term or sustainability impacts include decreased intelligence levels, ability to think, difficulty concentrating, and decreased confidence.Basic immunization affects children's growth and development, because children who have poor health usually grow and develop more slowly. Growth and development in children can be achieved if they get adequate nutrition and avoid diseases.

Immunization for infants and toddlers is a preventive measure against the disease. Immunization is expected to protect children from diseases that can cause abnormalities and death. Therefore, complete basic immunizations completed in children are effective in preventing disease infections and boosting immunity (Hirfa & Rosyati, 2023). One of the strategies used to strengthen the immune system in children is immunization, which helps them avoid illness or only experience mild symptoms when exposed to the disease (Dewi, 2024). Immunization has consistently shown its effectiveness in preventing diseases that can be avoided by immunization. These diseases include Tuberculosis (TB), diphtheria, pertussis, hepatitis B, poliomyelitis, and measles which all contribute to improving health in children (Ministry of Health of the Republic of Indonesia, 2021). Immunization is recommended for infants in the age range of 0 to 12 months, during which time the baby's immune system can function optimally. The Hepatitis B vaccine, the Bacillus Calmette Guerin (BCG) vaccine, the Polio Oral Bivalent Vaccine (bOPV), the Inactivated Polio Vaccine (IPV), the Diphtheria, Pertussis, Tetanus, Hepatitis B, Pneumonia, and meningitis vaccines caused by Hib infection (DPT-HB-Hib), and the measles and rubella (MR) vaccine are part of the basic immunization program implemented in 2022 (Ministry of Health of the Republic of Indonesia, 2022). Meanwhile, the Pneumococcal Conjugate Vaccine (PCV) and Rota Virus (RV) vaccines will be added to the basic immunization schedule in 2023 (Ministry of Health of the Republic of Indonesia, 2023).

Based on data from the Indonesian Ministry of Health in 2023, basic immunization in Indonesia in 2022 has increased to 94.9%. However, this percentage has not reached the WHO target of 99% or there are still around 240,000 children in Indonesia whose basic immunization has not been met. West Java ranks in the top sixth in terms of complete basic immunization coverage according to Indonesia's health profile in 2022, followed by Central Java, NTB, Banten, DIY, and Lampung (Indonesian Ministry of Health, 2023). On the other hand, Tasikmalaya City occupies the 15th position out of 27 regencies/cities in West Java at 99.6% in 2022 (West Java Health Office, 2022). Data from the Indonesian Ministry of Health in 2020 shows that immunization adequacy which is still very low occurs in children aged 3-4 months.Previous research conducted by Setyarini (2025) confirmed the correlation between the completeness of basic immunization and the growth and development of children at the Winong I Health Center, Pati Regency. This study is in line with the findings from Kusuma (2023) which indicate a relationship between basic immunization history and child development. The cognitive capacity of children who receive complete basic immunization will be superior in contrast to those whose basic immunization has not been completed or incomplete. Based on a preliminary study conducted at the Srikandi Husada Clinic, Kudus Regency, it is known that based on interviews with parents of toddlers, it was obtained that out of 10 children, there were 4 children who were still slow in growth and development, such as difficulty interacting and lacking gross motor movement. Regarding immunization status, it is known that 3 out of 10 children over 11 months of age have not been fully immunized.

II. METHODS

This research is a quantitative research with an analytical observational research design, with a cross-sectional approach, which is a type of research that measures independent and dependent variables at the same time (Rizka Zulfikar, Fifian Permata Sari et al., 2024). This study has a population of all children

aged 11-24 months who are registered and domiciled in the Srikandi Husada Clinic Working Area, Kudus Regency. Based on data in July-August 2025, the total population of children aged 11-24 months in the region is 68 children. Based on the results of the calculation using the Slovin formula, the number of samples was rounded to 59 samples. The primary data of this study comes from the research instrument, namely the Pre-Screening Developmental Questionnaire (KPSP) to see development in children, then the instrument to see growth in children is the Towards Healthy Card (KMS). This study uses secondary data obtained from clinical data such as the number of immunizations and local health profile data. In this study, univariate analysis and bivariate analysis were also carried out.

III. RESULT AND DISCUSSION

Univariate Analysis of Respondent Characteristics

The characteristics of the respondents in this study included gender, age, completeness of immunization, child growth, and child development. The following is an explanation of the characteristics of the respondents based on the table below:

1. Gender

Table 1. Frequency Distribution of Respondents by Gender (n=59)

Characteristics	Categories	Frequency	%
Gender	Male	33	55,9
	Women	26	44,1
Total		59	100,0

Source : Primary Data (2025)

Based on table 1, it can be seen that out of 59 respondents, there were 33 male children (55.9%), and 26 female children (44.1%).

2. Age

Table 2. Frequency Distribution of Respondents by Age (n=59)

Characteristics	Categories	Frequency	%
Age	11-17 Months	37	62,7
	18-24 Months	22	37,3
Total		59	100,0

Source : Primary Data (2025)

Based on table 2, it can be seen that of the 59 respondents, most of them were aged 11-17 months, namely 37 children (62.7%) and respondents aged 18-24 months as many as 22 children (37.3%).

3. Immunization Completeness

Table 3. Distribution of Respondent Frequency Based on Basic Immunization Completeness (n=59)

Characteristics	Categories	Frequency	%
Basic Immunizations	Complete	31	52,5
	Incomplete	28	47,5
Total		59	100,0

Source : Secondary Data (2025)

Based on table 3, it can be seen that of the 59 respondents, as many as 31 children (52.5%) have a complete basic immunization history, while the other 28 children (47.5%) have an incomplete basic immunization history.

4. Child Growth

Table 4. Distribution of Respondent Frequencies Based on Child Growth (n=59)

Characteristics	Categories	Frequency	%
Growth	Rise	33	55,9
	Not Rising	26	44,1
Total		59	100,0

Source : Primary Data (2025)

Based on table 4, it can be seen that out of 59 respondents, as many as 33 children (55.9%) experienced increased growth, while 26 children (44.1%) experienced non-increased growth.

5. Child Development

Table 5. Frequency Distribution of Respondents Based on Child Development (n=59)

Characteristics	Categories	Frequency	%
Child Development	Conform	32	54,2
	Dubious	16	27,1
	Deviations	11	18,6
Total 59			100,0

Source : Primary Data (2025)

Based on table 5, it can be seen that of the 59 respondents, the majority have a developmental status of 32 children (54.2%), 16 children (27.1%) in the dubious category and 11 children (18.6%) in the deviant category.

Bivariate Analysis

Analysis of the Relationship between Basic Immunization Completeness and Child Growth and Development at Srikandi Husada Clinic, Kudus Regency

Table 6. Distribution of Respondents Based on the Relationship between Basic Immunization Completeness and Child Growth (n=35)

Basic Immunizations	Child Growth				Total		r	p Value
	Rise		Not Rising					
	n	%	n	%	n	%		
Complete	22	71,0	9	29,0	31	77,1	0,319	0,014
Incomplete	11	39,3	17	60,7	28	22,9		
Total	33	55,9	26	44,1	59	100,0		

*: Spearman Rho Test

Based on table 6, the results were obtained that of the 31 children who had complete basic immunization, there were 22 children who had increased growth and 9 children who had no increased growth. Meanwhile, of the 28 children who had incomplete immunizations, there were 11 children who had increased growth and 17 children who had no growth. The results of the statistical test using Spearman's Rho were obtained with a value of p = 0.014 < 0.05 and a value of r (Continuity Correlation) was obtained with a value of 0.319 which is in the range of 0.200 – 0.399 (the correlation has a weak tightness) and has a positive relationship direction, so it can be concluded that there is a relationship between the completeness of basic immunization and the growth of children at the Srikandi Husada Clinic, Kudus Regency.

Table 7. Distribution of Respondents Based on the Relationship between Basic Immunization Completeness and Child Development (n=35)

Basic Immunizations	Child Development						Total		r	p Value
	Conform		Dubious		Deviations					
	n	%	n	%	n	%	n	%		
Complete	24	77,4	5	16,1	2	6,5	31	77,1	0,494	0,000
Incomplete	8	28,6	11	39,3	9	32,1	28	22,9		
Total	32	54,2	16	27,1	11	18,6	59	100,0		

*: Spearman Rho Test

Based on table 7, the results were obtained that of the 31 children who had complete immunization, there were 24 children who had appropriate development, 5 children who had doubtful development and 2 children who had abnormal development. Meanwhile, of the 28 children who had incomplete basic immunizations, there were 8 children who had appropriate development, 11 children who had doubtful development, and 9 children who had abnormal development.The results of the statistical test using Spearman's Rho obtained a value of p=0.000 < 0.05 and an r value (Continuity Correlation) was obtained with a value of 0.494 which is in the range of 0.400 – 0.599 (correlation has moderate tightness) and has a positive relationship direction, so it can be concluded that there is a relationship between basic immunization completeness and child development at Srikandi Husada Clinic, Kudus Regency.

Univariate Analysis

1. Gender

The results showed that most of the respondents were boys as many as 33 children (55.9%), while girls were 26 children (44.1%). The difference in the number of boys and girls in the sample at the Srikandi Husada Clinic in Kudus Regency looked quite balanced. This difference in numbers is still within an acceptable range and does not reflect a particular trend in sample selection. In terms of immunization, recent studies have revealed that gender or gender does not have a significant impact on the status of basic immunization completeness. Research findings from Seduced (2024) stated that the most determining factors for achieving complete immunization include maternal knowledge, ease of access to health services, and quality of service, not the gender of the child. This is in line with the results of research at the Srikandi Husada Clinic which shows that boys and girls have equal freedom in getting immunizations.

In addition, differences in growth and development in children based on gender have been seen from an early age, including in the period of 11-24 months, especially in language and social-emotional aspects. Girls are more likely to have better language skills as well as more mature social responses and emotional control compared to boys. Meanwhile, in motor development, no consistent differences were found between the two. This difference is not entirely influenced by family environmental factors such as parental education, socioeconomic conditions, or parenting patterns, so it indicates the possibility of biological factors and differences in social stimulation that are not measurable. Thus, these findings suggest that gender may be a factor related to variations in early childhood growth and development and is important to consider in monitoring and providing developmental stimulation in children (Guan et al., 2025).

2. Age

The results showed that of the 59 respondents, most of them were 11-17 months old, namely 37 children (62.7%) and 22 children (37.3%) of respondents aged 18-24 months. The age distribution of the respondents showed that most children were in the late infant to early toddler phase, which is a very crucial period for the completion of basic immunization. In the age range of 11–17 months, the main vaccines such as HB, BCG, Polio, DPT-HB-Hib, and MR first doses are generally scheduled to be administered. Children with younger ages tend to have a greater chance of receiving immunizations on time because parents are still actively monitoring the schedule through the posyandu. Research conducted by Seduced (2024) He also emphasized that children under 18 months have a higher chance of achieving complete immunization because the vaccine administration schedule is still routinely delivered by health workers. Basic immunization coverage in children over 18 months tends to decrease, resulting in reduced posyandu visits and routine control.

This explains that children aged 11–17 months in this study have a greater chance of achieving basic immunization completeness. Age also has an influential relationship with children's developmental achievements. In the 12-18 month period, progress in motor, language skills, and social-emotional aspects takes place very quickly so that this phase is often used as the right time to assess growth and development through the KPSP instrument. A 2025 study examining children aged 12–24 months revealed that the 12–18 month age group tends to experience better development, especially in gross motor and social interaction skills. Therefore, the age range of respondents in this study can be considered appropriate to assess the relationship between basic immunization and child growth and development (Octania et al., 2025)

3. Immunization Completeness

The results showed that out of 59 respondents, there were 31 children (52.5%) who received complete basic immunization and as many as 28 children (47.5%) who received incomplete basic immunization history. This percentage of immunization completeness illustrates that mothers in the Srikandi Husada Clinic area, Kudus Regency have poor awareness and compliance in protecting children from infectious diseases that can be avoided with immunization. Thus, achieving the national target of complete basic immunization coverage requires the active role of health workers in efforts to increase the implementation and reach of basic immunization.The completeness of basic immunization is influenced by factors such as the level of maternal knowledge about the benefits of immunization, discipline in following immunization times, the role of the family, and the ease of access to health services. Mother's knowledge has

proven to be the dominant factor in determining the completeness of children's basic immunizations. Mothers who have a poor level of knowledge have children whose basic immunizations are incomplete. Lack of knowledge on the part of mothers such as knowledge about the benefits of providing basic immunization to children will affect their perception of ensuring that children receive complete basic immunizations (Agustin & Rahmawati, 2021). Mothers' views on vaccination have a significant influence on children's health practices related to immunization. Mothers with a positive outlook tend to recognize the importance of vaccination as a mechanism to protect children's health and prevent infectious diseases. They are usually more initiative in gathering information about the benefits of vaccination and adhering to immunization schedules consistently.

Instead, negative views often arise from a lack of trust, fear, or misknowledge about immunizations. This can encourage mothers to delay, hesitate, or refuse vaccination of their children which ultimately contributes to low levels of immunization coverage (Irmawati et al, 2025). In addition, family support also plays an important role in the completeness of basic immunization. The support of husbands and family members can increase the motivation of mothers in bringing their children for immunization, while the lack of support will be an obstacle for mothers in completing immunizations. Family support in the less category is caused by instrumental support which includes the provision of materials, money given, the provision of goods and food and facilities (Janatri et al., 2022). Mothers who consistently come to the posyandu tend to have more opportunities to provide complete immunizations of their children. Routine posyandu visits make mothers more often get reminders of immunization schedules and get information and education directly from cadres and health workers. The Government of Indonesia continuously implements programs to achieve the fulfillment of children's rights to grow up healthy and avoid diseases. A complete basic immunization program plays an important role in building children's immunity protection against diseases that can be avoided by immunization such as measles, diphtheria, pertussis, polio, and hepatitis B (Mega & Palopo, 2025).

4. Child Growth

The results showed that of the 59 respondents, there were 33 children (55.9%) who experienced increased growth and as many as 26 children (44.1%) who experienced non-increased growth. The increased growth showed that most children in the study area were getting adequate nutrition, relatively good health conditions, and adequate access to health care. However, the presence of 44.1% of children with no growth indicates that there are still some children who are at risk of experiencing health problems or obstacles in meeting nutritional needs during the golden age.Growth problems that occur at this time or in the future, are generally caused by inadequate nutritional intake and are further exacerbated by the frequent infection of children. This disorder can start in the womb due to stunted fetal growth, continue with insufficient nutritional intake to support the rapid growth and development process in infancy and children, and is further aggravated by exposure to recurrent infections in the early period of life (Bulan et al., 2022). Infectious diseases can trigger stunting or failure to grow in children. Such infections can manifest through pathogens such as bacteria, viruses, fungi, or parasites such as worms. The infants and toddlers did not have a higher resistance to infectious diseases because their immune systems were still in the immature stage of development. These infection conditions can reduce the nutritional status of children due to reduced appetite and disruption of the process of nutrient absorption in the digestive tract so that growth in children is disrupted (Nasution et al., 2024).

Providing additional food accompanied by a variety of menus also has a positive impact on weight gain for children with poor nutritional status. Menu variety plays an important role in increasing interest in eating so that the intake of nutrients needed for growth can be optimally met. Children who receive food with monotonous tastes, shapes, and types tend to experience a decrease in appetite so that energy and nutrient intake becomes unfulfilled. On the other hand, parents who are able to process additional foods with a diverse menu such as combining sources of carbohydrates, proteins, vegetables, and fruits can increase the attractiveness of food and encourage them to consume better amounts of food so that it has a significant impact on growth in children (Stuart & Scott, 2024). In terms of integrity, the findings of this study reveal that child growth is the result of a combination of various factors, especially nutritional adequacy, incidence

of infection, and protection obtained through immunization. Based on these results, it is necessary to increase education to mothers about infection prevention efforts and the importance of providing complete basic immunization. Health workers also need to strengthen growth monitoring through posyandu activities, maintain optimal immunization coverage, and intervene as early as possible in children who begin to show indications of growth slowdown.

5. Child Development

The results showed that the majority of children had the appropriate category developmental status as many as 32 children (54.2%), the dubious category as many as 16 children (27.1%) and the deviant category as many as 11 children (18.6%). These findings suggest that the majority of children are already at a developmental stage that is age-aligned. However, there are still some children who need more intensive monitoring and stimulation so as not to experience developmental delays in the future.Early childhood has development including gross motor, fine motor, language, cognitive, and social-emotional aspects. Optimal development can be achieved when the child's nutrition, stimulation, health, and environment needs are properly met. Parenting patterns and providing the right diet also play a very important role in supporting children's growth and development. As parents age, experience and maturity in parenting increase so that they are able to provide more effective parenting patterns during what is considered a critical period of child development (Kusumaningrum et al., 2025).

Parents can provide developmental stimulation to children by using toys such as beads that can strengthen children's fine motor skills. Beads made of plastic with varying shapes and colors can train children's abilities and creativity. The activity of stringing beads into bracelets and necklaces based on the color and shape of the beads causes children to think, understand and pay attention to how a rope can enter small and large holes. In addition, there are other toys such as rubber bracelets, paper, candles, blocks, puzzles that can improve children's fine motor skills (Risdiana et al, 2025) The results of this study confirm that child development is the result of complex interactions between biological factors, environment, parenting, nutrition, and health. These findings show the importance of optimizing infection stimulation and prevention and strengthening the role of parents through health education to ensure that all development is in line with their age phases.

Bivariate Analysis

1. The Relationship between Immunization Completeness and Child Growth

The results showed that of the 31 children who had complete immunization, there were 22 children who had increased growth and 9 children who had no increased growth. Meanwhile, of the 18 children who had incomplete immunizations, there were 11 children who had increased growth and 17 children who had no increased growth. The results of the statistical test using Spearman's Rho obtained a value of $p=0.014 < 0.05$ and an r value (Continuity Correlation) was obtained with a value of 0.319 which is in the range of 0.200 – 0.399 (the correlation has a weak closeness) and has a positive relationship direction which means that the more complete a child's basic immunization, the better his growth tendency.The relationship between immunization and the growth process can be explained through aspects of immunology as well as energy metabolism. When the child is protected from infectious diseases through immunization, the body's energy does not need to be used to fight pathogens, so it can be fully focused on the formation of new tissues and support the growth process. In contrast, children who are often infected because they do not get immunized will face metabolic stress that triggers the release of catabolic hormones and inhibits the process of anabolism. This condition causes the growth rate in children to be disturbed (Sundari & Scientific, 2025). In addition, the quality of nutritional intake and feeding patterns play an important role in supporting the body's anabolism process.

Children who do not get adequate amounts of protein, energy, and micronutrients tend to experience growth slowdowns, even though the immunizations received are complete because the body lacks the resources to form new tissues and maintain optimal metabolic function (Praštalo et al., 2025). Children who live in environments with inadequate sanitation also have a greater chance of developing growth disorders than children who live in areas with good sanitation. Limited access to proper defecation facilities and the practice of open defecation have led to increased exposure to feces in the environment. This exposure

increases the risk of enteric infections, and repeated infections can inhibit the absorption of nutrients in the intestine, resulting in a slowdown in linear growth. Poor sanitation can trigger environmental enteric dysfunction (EED), which is a chronic inflammatory condition in the intestines due to repeated exposure to environmental bacteria which is one of the important mechanisms for failure to grow (Yang et al., 2021).Thus, this study confirms that the completeness of basic immunization is an important component in the strategy to increase child growth. Efforts to fulfill nutrition alone are not enough if they are not followed by health protection through immunization to prevent diseases that can interfere with children's growth. Therefore, primary health services such as posyandu, independent midwifery practices and clinics must link immunization programs with growth monitoring activities so that potential growth disorders can be detected and prevented from the beginning.

2. The Relationship between Basic Immunization Completeness and Child Development

The results showed that of the 31 children who received complete immunization, there were 24 children who had appropriate development, 5 children who had doubtful development and 2 children who had developmental deviations. Meanwhile, of the 18 children who received incomplete basic immunizations, there were 8 children who had appropriate development, 11 children who had doubtful development, and 9 children who had abnormal development. The results of the statistical test using Spearman's Rho obtained a value of $p=0.000 < 0.05$ and an r value (Continuity Correlation) obtained a value of 0.494 which is in the range of 0.40 – 0.599 (correlation has moderate closeness) and has a positive relationship direction which means that the more complete the immunization a child receives, the better the chance of having development according to his age. Development in children is a process that is not limited to physical but also has an impact on the maturity aspects of movement, thinking, language, social-emotional and adaptive maturity. Development in children can be according to their age if there are no inhibitions such as infections or diseases experienced by children.

Immunization is an effective form of prevention because it works by forming immunity in children so that children will not get seriously ill when exposed to infection. Immunization also contributes to cognitive and social-emotional development through improved health in children (Prince, 2025). The completeness of immunization in children affects the length of education and high scores at the time of education compared to their peers who only receive partial immunizations or have never been vaccinated. Conditions such as stunting, underweight, wasting, and cognitive impairment can be intermediate factors that explain how immunization incompleteness has an impact on low academic achievement and less than optimal health. In other words, complete basic immunization is related to a reduced risk of stunting, wasting, and underweight in the early period of life. This condition affects the development of education and the health status of children in the future. In addition, children who receive complete basic immunizations usually have better cognitive abilities that can contribute to more meaningful learning achievement in the future (Riswandi & Resosudarmo, 2025) Incomplete immunization in children can affect future learning abilities, especially basic reading and arithmetic skills.

Children with zero-dose status or children who received no basic immunizations at all early in life were more likely to have significantly lower learning outcomes, especially in basic reading and numeracy skills. This research conducted in India explains that immunization not only works in preventing disease, but also contributes indirectly to cognitive development because children who regularly receive immunizations are less likely to experience severe infections such as measles or pneumonia and stunting due to recurrent illnesses so that children are better able to follow the learning process without health barriers (Johri et al., 2023).Overall, this study proves that basic immunization has an impact on child development. Children who are fully immunized tend to be healthier, have fewer infections, and have a greater chance of receiving optimal stimulation so that their cognitive, motor, language, and social-emotional development can take place according to their age. With immunization protection, children can go through a golden age of development with quality health that allows the achievement of good motor, cognitive, language, and social-emotional development according to age.

IV. CONCLUSION

The results showed that there were 33 children who were male (55.9%), 26 children were female (44.1%) with most of them aged 11-17 months, namely 37 children (62.7%) and 22 children aged 18-24 months (37.3%). The results showed that 31 (52.5%) children who received complete basic immunization and 28 (47.5%) children who did not receive complete basic immunization. The results showed that most of them experienced increased growth, namely 33 children (55.9%) and as many as 26 children (44.1%) experienced non-increasing growth. The results showed that most of them had the appropriate category development status as many as 32 children (54.2%), the doubtful category as many as 16 children (27.1%) and the deviant category as many as 11 children (18.6%). The results showed that of the 31 children who had complete immunization, there were 22 children who had increased growth and 9 children who had no increased growth. Meanwhile, of the 28 children who had incomplete immunizations, there were 11 children who had increased growth and 17 children who had no growth.

The value of p=0.014 < 0.05 and the value of r (Continuity Correlation) was obtained with a value of 0.319 which was in the range of 0.200 – 0.399 (the correlation has a weak closeness) and had a positive relationship direction, so it can be concluded that there is a relationship between the completeness of basic immunization and the growth of children at the Srikandi Husada Clinic, Kudus Regency. The results showed that of the 31 children who had complete immunization, there were 24 children who had appropriate development, 5 children who had doubtful development and 2 children who had developmental deviations. Meanwhile, of the 28 children who had incomplete basic immunizations, there were 8 children who had appropriate development, 11 children who had doubtful development, and 9 children who had abnormal development. The value of p = 0.000 < 0.05 and the value of r (Continuity Correlation) was obtained a value of 0.494 which is between the range of 0.40 – 0.599 (the correlation has a medium closeness) and has a positive relationship direction, so it can be concluded that there is a relationship between the completeness of basic immunization and the development of children at Srikandi Husada Clinic, Kudus Regency.

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